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Constructing Models of Alcohol and Sexual Health Literacy in Adolescence.

by

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Abstract

In the UK, research has highlighted the need for improved education in alcohol and sexual health in the adolescent population. Consequently, Relationships and Sex Education and Health Education were made compulsory in 2019. However, preceding research highlighted that school-based alcohol and sexual health education was ill-suited to building associated health skills and competencies. Health literacy as a concept aims to address these issues by providing a framework within which health related competencies and outcomes can be developed. Consequently, the aim of this research was to develop models of alcohol and sexual health literacy in adolescents and further interrogate the use of such models in education, exploring the barriers to developing alcohol and sexual health literacy in adolescents though formal education. A pragmatic, mixed methods approach was utilised to explore the research questions. The study contributed to the field of research by creating robust, theory-based models of alcohol and sexual health literacy and discovering the following:

- Current measures of adolescent health literacy are poorly designed, often only accounting for functional health literacy.
- There are many barriers that need to be overcome to effectively deliver alcohol and sexual health education in schools, specifically, that competencies in alcohol and sexual health are perceived as challenging to teach and measure within a school setting.
- Internationally, curriculum guidelines tend to focus on the risks associated with alcohol and sexual health and fall short in building competencies over knowledge and in aiding educators with instruction.
- Introduction of compulsory Relationships and Sexual Health Education and Health Education in the UK will have little significant impact if it is not supported with more training and support for educators.

These findings and the models produced have significant connotations for the design and delivery of alcohol and sexual health education in schools.

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Print name: Pavithra Premkumar

Title of thesis: Constructing Models of Alcohol and Sexual Health Literacy in Adolescence.

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
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6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
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I would also like to thank my family, particularly my mother, Prema Premkumar, and my friends for their continued support.

Definitions and Abbreviations

Alcohol Health Literacy (AHL): Alcohol health literacy refers to an individual's capability to find, understand, process and apply health information in order to make informed, health related decisions about alcohol for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

Health Belief Model (HBM): Health behaviour model characterised by an individual's risk perception in determining behaviour.

Health Education (HE): curriculum subject replacing PSHE (see below), focusing on strengthening the knowledge and skills of young people around physical and mental health.

Health Literacy (HL): Health literacy refers to an individual's capability to find, understand, process and apply health information in order to make informed, health related decisions for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

Mixed Methods Research (MMR): the use of one or more data collection methods within a study

Personal, Social, Health and Economic (PSHE) education: curriculum subject replacing PSHE (see below), focused on empowering young people with life skills.

Relationships and Sex Education (RSE): curriculum subject that aims to empower young people with the knowledge and skills to initiate and interact safely with interpersonal relationships.

Sexual Health Literacy (SHL): Sexual health literacy refers to an individual's capability to find, understand, process and apply health information in order to make informed, health related decisions about sex for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

Sexually Explicit Material (SEM): pornographic or otherwise explicit material

Sexually Transmitted Infections (STIs): infections spread by sexual contact

Socioeconomic Status (SES): social class or standing of an individual or group

Substance Use Disorder (SUD): condition characterised by uncontrolled use of drugs and/or alcohol

Theory of Planned Behaviour (TBP) and Theory of Reasoned Action (TRA): Health behaviour models characterised by an individual's intention to complete a behaviour as a predictor for their actions.

United Kingdom (UK)

United States of America (U.S/U.S.A)

World Health Organisation (WHO)

Chapter 1 Introduction

Within this thesis, alcohol health literacy (AHL) and sexual health literacy (SHL) in adolescents will be explored in the context of health education in the United Kingdom (UK). Specifically, this will involve reviewing the extant research, investigating the competencies that adolescents need to be alcohol and sexual health literate and forming workable models which define AHL and SHL and enables educators to understand the competencies necessary to develop AHL and SHL. The thesis will also explore the challenges that secondary school teachers face in delivering these competencies and further discuss how and if these can be overcome.

This chapter will begin by highlighting the importance of health literacy and will then specifically investigate the issue of alcohol and sexual health literacy in adolescents. The chapter will end with a summary of the research questions and contents of the thesis.

1.1 Background

In 2017, the World Health Organisation (WHO) identified alcohol- and sexual health-related harm as among some of the largest preventable causes of adolescent death (WHO, 2017). This is reflected within the UK (Office for National Statistics, 2020). In the UK, although evidence (see section 1.1.3) illustrates that some aspects of alcohol and sexual health related harm seem to have declined, there is an increase in the rate of STI transmission particularly in young people (Office for National Statistics, 2019) and alcohol- related deaths are at the highest in all age groups since records began (Office for National Statistics, 2018). Across Europe, the UK consistently performs amongst the worst in alcohol and sexual health related harm such as rates of binge drinking, and STI transmission. This is not the case when examining other preventable causes of adolescent death such as suicide (WHO, 2019). This is surprising given that alcohol and sexual health strategies have been present in public and education policy explicitly in the UK since as early as the 1940s for sexual health and 1970s for alcohol education (Iyer and Aggleton, 2015; Mold, 2020). In contrast, mental health education has been a relatively recent addition to Government strategy and curricula (Turner, 2015). When exploring the state of alcohol and sexual health in young people, it is pertinent that the interrelationship between these is explored. Numerous studies highlight that the use of alcohol and other substances can increase sexual risk leading to an increased likelihood unwanted pregnancy and STIs (sexually transmitted infections) (Khadr et al., 2016). Various reports also suggest that alcohol and sexual health services and education should be delivered in unison to highlight the association between the two and for greater intervention impact (Khadr et al., 2016;

Royal College of Physicians, 2011). This may explain some of the trend in UK statistics that show a relatively high incidence of binge drinking and STI rate transmission in young people.

Health Education (HE) and Relationships and Sexual Health Education (RSE) was made a statutory requirement in all secondary schools from September 2020. Considering the pertinence placed on alcohol and sexual health education by the Government and the statistics indicating that this is an area of concern within the UK, I felt that it was necessary to explore the role of schools and certainly educators (i.e., teachers) in delivering alcohol and sexual health education in young people. This is particularly significant in the context of continued funding cuts to alcohol and sexual health services in the UK (Iacobucci and Torjesen, 2017; Campbell, 2019). Although the thesis will explore the role of schools and educators in delivering alcohol and sexual health education, it does not overlook the role of other sources of health information (e.g., media, internet, peers, parents and healthcare). Rather, it will explore the usefulness and potential impact of compulsory RSE and Health Education in a time of austerity. To achieve this, concepts of ideal sexual health and alcohol knowledge or education in adolescents will be explored considering whether this can be plausibly delivered in a school context.

1.1.1 Health Literacy

In 2019, the World Health Organisation (WHO) released a short communication detailing the importance of developing health literacy in schools (Paakkari et al., 2019). The communication argued that health literacy should form a critical part of strategy in school policy due to its relation with better health outcomes (Paakkari et al., 2019). The paper posed that:

"Health literacy is a useful phenomenon in the understanding and reduction of avoidable health disparities because it can be learned and developed" (Paakkari et al., p.1, 2019)

The term "Health Literacy" was first used in research in the 1970s relating to interventions that targeted non-communicable diseases (Nutbeam, 2000). It was employed, rather simplistically, to describe the link between an individual's literacy levels (e.g., ability to read/ write) and their health (Nutbeam, 2000). However, as the field of research advanced, the conceptualisation of health literacy began to evolve. Health literacy is now recognised as a complex interaction of factors such as context and personal skills that allow individuals to make informed decisions about their health (Nutbeam, 2000). Although it is not specifically mentioned in the definition by Nutbeam (2000), it is thought that the "health decisions" made by a highly health literate individual will lead to more positive outcomes (Berkman *et al,* 2012). In the current state of research, many definitions of health literacy exist, but they all encompass this idea. The definitions of health literacy tend to vary only slightly in terms of wording or emphasis on certain personal skills needed to be health

literate (Sørensen *et al,* 2012). However, all the definitions recognise that certain personal and social skills are needed to make autonomous and informed health decisions (Sørensen *et al,* 2012). Currently, the most frequently employed definition of health literacy is:

"*the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health*" (World Health Organization (WHO), 2016).

The popularity of health literacy research can be explained by the frequent associations between poor health literacy and poor health. For example, in a systematic review of 96 papers exploring health literacy and its related outcomes, Berkman et al. (2011) found that low health literacy was associated with poorer health outcomes (higher rates of mortality, poor overall health status, more hospitalisations) and more frequent use of emergency health care systems. More specifically, there was moderate evidence to support that individuals with low health literacy use emergency care more and preventative services less (e.g., influenza immunisations and mammography screenings) (Berkman et al., 2011). Further explorations of health outcomes have found that individuals with low health literacy are also poor at taking medication properly, worse at interpreting health labels and messages and more likely to suffer from symptoms of depression (Berkman et al. 2011). Poor health literacy has also been associated with higher mortality rates in the elderly population (Berkman et al. 2011). Other studies have suggested that individuals with low health literacy are less likely to manage their own and their family's health well, find it harder to access the appropriate health care services, tend to communicate less effectively with health care practitioners and are less likely to manage long-term conditions effectively (Public Health England, 2015).

1.1.2 Health Literacy Interventions

There are many existing interventions that aim to improve health literacy. Interventions can range from those that investigate the effects of presenting information in various ways, to interventions that target the skills and/or knowledge of the individual. A systematic review of 38 studies exploring interventions for low health literacy individuals conducted by Sheriden et al. (2011) found that multiple design features of interventions associated with how health related information was presented seemed to improve comprehension (Sheriden et al. 2011). For example, comprehension of health information improved when essential information was presented first or by itself (Sheriden et al. 2011). Additionally, presenting health information so that higher numbers indicated better outcomes also improved comprehension (Sheriden et al. 2011). More specifically,

in one study, more correct responses were made concerning "hospital quality" when a higher number indicated higher quality (Sheriden et al. 2011).

Interventions may be more effective when targeting specific types of health literacy. Within models of health literacy, there is an emergence of concepts such as eHealth Literacy (electronic health literacy) and Media Health Literacy that refer to health literacy with regards to a specific contextual domain (Levin-Zamir, Lemish & Gofin, 2011; Norman & Skinner, 2006). The use of health literacy in this way may mean that specific skills and attributes that are relevant to the subject may be identified. For example, Stellefson et al. (2011) identified six components of ehealth literacy, one of which is the ability to think critically about media or online content. This allows researchers to develop interventions that target specific skill sets and solve specific problems associated with the competency.

Published health literacy research tends to focus on the adult population which is surprising considering that many experts in this field agree that health literacy should be developed at an early age (Manganello, 2008; McDaid, 2016). Although it may be argued that adolescents, overall, are healthier and access health care less than adults (Lim *et al*, 2012), they are more likely to access health information through the internet and thus are possibly more affected by non-credible sources of information (Ghaddar et al. 2011). Further to this, adolescents are at a crucial stage of development where the skills and behaviours they learn will form their base of knowledge in adulthood (WHO, 2014). In fact, the WHO recommends a life course approach to health promotion that begins from conception through to adulthood (Pratt & Frost, 2016). Adolescence is identified as a period of great transition in which young people shift from dependent child to independent adult, moving from primary to secondary education and eventually into joining the workforce (Jacob *et al.,* 2017). The success of these transitions and the knowledge gained during these periods are extremely important for health outcomes in adulthood (Jacob *et al.,* 2017). Therefore, it seems important to ascertain how this age group obtains knowledge about health, as a means of helping them to develop into health literate adults.

A systematic review by Sansom-Daly *et al.,* (2016), including 14 international studies on health literacy in adolescents and young adults, found that, as with adults, poorer health literacy was associated with adverse health outcomes e.g., obesity, substance abuse. Similarly, a systematic review of 17 studies by Fleary, Joseph and Pappagianopoulos (2018) found that health literacy was associated with adolescents' health behaviours, including alcohol use and sexual health related behaviours.

It is clear from the evidence presented above that health literacy can provide a useful framework in which health knowledge, skills and behaviours can be understood and developed.

However, research on the outcomes and efficacy of health literacy interventions outside of healthcare settings is limited (McDaid, 2016).

Within schools in the UK, literacy in various forms is a well understood concept, particularly in its more traditional forms (e.g., numerical, reading and writing). However, within PSHE (Personal, Social, Health and Economic education) and health education more generally, there is a movement towards understanding and developing positive behaviours, skills, and knowledge in various subjects though other forms of literacy e.g., digital literacy, financial literacy, emotional and mental health literacy (Kilgour, Matthews, Christian and Shire, 2013). In other countries such as Australia, health education is explicitly developed around the concept of health literacy. Consequently, I focused on health literacy frameworks, specifically alcohol and sexual health literacy as a starting point for the exploration and development of alcohol and sexual health education in schools. Alcohol and sexual health literacy are defined in section 1.4.

1.1.3 Alcohol and Sexual Health Statistics

In the UK, the under 25 age group tends to be the most impacted by sexually transmitted infections (STIs). The rates of STIs in the 15-24 age group have risen dramatically in the past ten years (Public Health England, 2019). Young people currently account for over half of the diagnosed cases of chlamydia, genital warts and gonorrhoea (Public Health England, 2019). This may reflect an increase in young people attending clinics and getting checked for STIs (Public Health England, 2017). Although it is difficult to measure true incidence, it is thought that young people are still more impacted by STIs than other age groups because they are more likely to have multiple sexual partners (Public Health England, 2019). The pregnancy rates in young women under 25 have dropped in the past few years (Office for National Statistics, 2018); however, in 2016, the highest rates of abortion were among women aged under 16 (Office for National Statistics, 2018).

Trends in drinking among the youth population seem to show some improvements. More young people (age 11-24) are abstaining from drinking alcohol in the UK compared to rates over the previous ten years (National Statistics, 2019). Rates of binge drinking have also decreased (age 11-24) (National Statistics, 2019). Young people (age 11-15) are also becoming less tolerant in their attitudes to underage drinking, with only 50% in 2016 (67% in 2003) agreeing that it was acceptable to try alcohol (National Statistics, 2018). Only 19% agreed that it was acceptable to get drunk (31% in 2003) (National Statistics, 2019).

However, in those aged 15-49 in England, alcohol is the leading risk factor for ill health, early mortality and disability (Public Health England, 2016). This remained true in 2018, when the report was last updated. In the 16-24 age group, approximately 21% of hospital admissions were related

to alcohol use (National Statistics, 2018). Hospital admissions for alcohol-related harm for under 16s were under 10% (National Statistics, 2018). Alcohol-related harm is estimated to cost society £21bn, and specifically cost the NHS £3.5bn (Health and Social Care Information Centre, 2015). Clearly, issues surrounding alcohol and sexual health still have a large impact on young people in the UK.

There are various interventions and government initiatives that attempt to target both sexual health and alcohol issues. The Government's Drug Strategy for 2017 outlines the plan for addressing current alcohol and drug use issues within the UK (HM Government, 2017). The main aims of the strategy are to:

A. Reduce illegal and harmful substance use
B. Increase rates of recovery in those experiencing substance abuse issues.

The aims are to be achieved by:

I. Reducing demand. It is highlighted that there will be a focus on "*building resilience and confidence among our young people to prevent the range or risks they face"* (HM Government, 2017, p. 6.)
II. Restricting supply by using new technology and data to block criminal activity.
III. Building recovery by improving treatment quality and availability.
IV. Global Action by leading action and sharing best practice internationally.

Young people are identified as a high-risk group, with the document highlighting that this group is more vulnerable to social pressures. Within the 'Reducing Demand' portion of the document PSHE education is identified as the intervention through which the resilience and confidence of young people will be encouraged (HM Government, 2017, p.8). The strategy suggests that the Department of Education will further the development of PSHE (HM Government, 2017). The document further explains that PSHE-related practitioners such as school nurses and teachers will be encouraged to develop their practice with support from experts in the field such as the PSHE Association (HM Government, 2017). The Government also outlines plans to support initiatives that build better health principles in young people (HM Government, 2017).

Similarly, the Government strategy for sexual and reproductive health, 2016-2019, identifies four main health promotion priorities (Public Health England, 2015):

I. Reduce HIV transmission and resulting avoidable deaths
II. Reduce rates of STIs
III. Reduce unplanned pregnancies
IV. Reduce rate of under 16 and under 18 conceptions.

Initiatives to improve sexual health outcomes in youth involve empowerment though education (Relationships and Sex Education: RSE), increasing provision of STI testing facilities and improving access to credible and useful sources of information in healthcare systems.

In both strategies, few details are provided for how these strategies will be implemented. It is also unclear how they expand upon previous strategies, as they seem to utilise or simply describe existing systems. However, both strategies identify that young people are particularly vulnerable to social pressures and socioeconomic status related factors. Socioeconomic status (SES), educational attainment and health literacy have been linked in numerous studies. An integrative review of 16 studies by Stormacq, Van den Broucke & Wosinski (2018) found that low SES and educational attainment were important determinants of health literacy. The findings from the review suggested that health literacy mediated the relationship between SES and health status, quality of life, health behaviours and outcomes (Stromacq, Van den Broucke & Wosinski, 2018). This means that health literacy could be modified to overcome some of the health inequalities associated with SES (Stromacq, Van den Broucke & Wosinski, 2018). Further to this, the strategies highlight the importance of school-based education (PSHE and RSE) to empower this age group and improve alcohol and sexual health related outcomes over the life course.

1.1.4 PSHE/RSE Education in the UK

The Children and Social Work Act 2017 required that PSHE to be made statutory in all schools in England (House of Commons, 2019). It was later announced that this would involve statutory Health Education and RSE (House of Commons, 2019). As a result, secondary schools are now required to have up-to-date policies for RSE (Department for Education, 2019). The draft guidance for RSE and Health Education was published in 2019. The guidance provides indicators for schools on how RSE and Health Education policies should be designed and implemented, specifying groups where special provision should be made e.g., students with special educational needs (Department for Education, 2019). The guidance also provides suggestions for a staged process of teaching RSE and Health Education from primary school onwards (Department for Education, 2019).

The topics that secondary schools are expected to include in RSE are (Department for Education, 2019):

- Families: understanding different types of relationship, marriage and other types of long-term relationship, roles and responsibilities of parents and understanding whether sources of information are credible and trustworthy.

- Respectful relationships, including friendships: positive and healthy relationships, stereotypes and prejudice, bullying and harassment and legal rights and responsibilities regarding equality.
- Online and media: online safety, impact of pornography, sharing and viewing indecent images of children, understanding how information is shared and evaluating information.
- Being safe: laws surrounding sex and sexuality, forced marriage, FGM and understanding and gaining consent.
- Intimate and sexual relationships: healthy relationships, facts about reproductive health, STIs, use of alcohol and drugs in risky behaviours, gaining advice and treatment and understanding and negotiating sexual pressure.

A range of topics is expected to be incorporated into Health Education, some of which overlaps or complements the RSE program of study. In terms of alcohol use, specifically, the guidance suggests that pupils should know the following by the end of secondary school (Department for Education, 2019):

- the impact of alcohol on diet and health
- the facts about alcohol use

The introduction of statutory RSE and Health Education are significant first steps in the promotion of alcohol and sexual health literacy in adolescents. However, the draft guidance provided falls short in that it lacks guidance for curriculum plans. General themes are explored without indicators for how certain subjects should be taught and in what detail. However, Government-endorsed associations (e.g., the PSHE Association) offer assistance for educators (House of Commons, 2019). The PSHE Association provides lesson plans for health education and RSE sessions tailored to different age groups as well as resources that teachers and students can use to explore topics covered within the lessons in further detail. It is important here to highlight that the lack of detail in the Government curriculum guidance is not necessarily a negative and indeed may be a direct reaction to curriculum guidance that was previously felt to be overly prescriptive (Roberts, 2019). The lack of detail in the guidance may be an attempt to allow teachers more autonomy to actively develop subjects to suit the needs of their students (So, 2019).

However, issues arise when considering that the Government have pre-described statutory themes for learning in the first instance that will inevitably be monitored or assessed. Regulatory bodies such as Ofsted were previously partly responsible for this. A previous Ofsted report on PSHE in English schools deemed that PSHE “required improvement or was inadequate in 40%” of schools (Ofsted, 2013, p.6). In these schools, Ofsted reported that PSHE focused on the mechanics of sex,

contraception and reproduction without exploring emotional and contextual factors, which left students with little understanding of how to apply this knowledge (Ofsted, 2013). Ofsted also reported a lack of age appropriate, quality education in RSE (Ofsted, 2013). Importantly, the report outlined issues surrounding assessment of pupils' learning in PSHE/RSE. The report stated that the assessment of pupils' knowledge in PSHE/RSE topics was weak, resulting in repetition of topics and low engagement from pupils (Ofsted, 2013).

Evidence from studies and surveys exploring teacher and student views on RSE and PSHE in the UK are more mixed. For example, a survey of 240 PSHE teachers in the UK by the Sex Education Forum (2019) reported that close to half (48%) of respondents felt that the quality of RSE delivered in their school was high or very high. On the other hand, 99% of respondents also indicated that they would like more support on delivering RSE that is inclusive (Sex Education Forum, 2019). In a survey of 1000 young people, 41% of respondents indicated that RSE was good or very good in their schools (Sex Education Forum, 2020). In the same survey, less than 6 in 10 felt that they had learnt all they needed to in school about sex education. In a smaller scale survey by Davies and Matley (2020), teachers indicated that they felt there was insufficient coverage of topics within alcohol and sexual health education. Teachers also indicated that there were many barriers to teaching PSHE/RSE such as a lack of time allocated to the subject, lack of training and guidance, confidence in raising taboo subjects (Davies and Matley, 2020). The issue of training and guidance was also highlighted in the survey by the Sex Education Forum (2019) with 29% of respondents claiming that they had not received any training in RSE.

The range of responses to the quality of PSHE education in the UK are undoubtedly impacted by differences in school funding, training, student needs, curriculum priorities and many other contextual factors. Understandably due to previous disagreements about curriculum guidance, the Government avoids being overly prescriptive in their guidance for RSE and HE to allow teachers more freedom. However, this might have a negative impact on schools and teachers who lack the support and resources to be able to deliver alcohol and sexual health education at a higher standard. Particularly considering very few of the teachers who deliver PSHE are subject-matter experts, and many do not receive training (Sex Education Forum, 2019). Literature exploring the efficacy of prescriptive vs. pedagogical freedom in curriculum design presents both as useful and effective strategies if employed in the correct context. For example, prescriptive curriculums may be more useful in contexts with less support, training for teachers, whilst more freedom in the curriculum may allow teachers with adequate support and guidance to thrive (International Bureau of Education, 2020). Consequently, it is important to understand the needs of teachers first, before providing curriculum guidance. This issue will be explored in more detail in the latter part of the thesis.

1.1.5 Competency based education

The concept of competence is often mentioned in relation to developing health literacy in individuals. In fact, 'competence' is explicitly included in some definitions of health literacy (McDaid,2016). Competence is not a new concept in education (Glaeser, 2018). PISA (Program for International Student Assessment) defines competence as:

"more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context" (OECD, p.4, 2005).

This definition of competence in educational settings places significance on the demonstration of skills in real-life situations which aligns with the aims of health literacy models and definitions including that of Nutbeam (2000). Competency based education (CBE) demands that students demonstrate mastery of predetermined competencies before advancing to more difficult concepts or before being allowed to progress whereas more traditional knowledge-based curricula focus on the recitation of content (Torres et al.,2018). CBE also aims to overcome issues of student disadvantage in education by providing a more rigorous content and assessment directed by student background as opposed to measuring student learning based on quantity of lessons on a subject (Sturgis,2017). There is evidence to show that these aspects of CBE enhance student learning and outcomes more than knowledge-based education (Torres et al.,2018). In the UK, the decision for implementing a competency vs. knowledge-based curriculum is at the discretion of schools (Torres et al., 2018).

However, the evidence presented in section 1.1.4 suggests that traditional, knowledge-based methods of delivering alcohol and sexual health education may not be effective. The 2013 Ofsted reports specifically highlights concerns that students lack the understanding of how to apply or demonstrate skills learn in PSHE/SRE. Consequently, CBE in alcohol and sexuality education is more frequently being explored as a route to developing effective RSE and HE (Hirst, 2008; Martin, Nelson and Lynch, 2013).

1.2 Research Aims and Questions

To summarise, statistical evidence highlights that despite prolonged Government strategy to combat these issues, alcohol and sexual health related harm is still prevalent in young people in the UK. In 2019, RSE and HE became compulsory to address issues such as alcohol and sexual health related harm in adolescents where funding cuts to other healthcare services have meant that schools may for many be the only freely accessible source of health education. Concurrently,

researchers supported by international organisations such as WHO have suggested that building health literacy in young people, particularly in school settings, can lead to better health outcomes later in life. Additionally, educational settings are familiar with the concept of building literacy as a competency that addresses disadvantage and leads to better outcomes across the lifespan. Competency is intrinsic to the concept of health literacy. Competency-based education also aligns with the central tenets of pragmatic philosophy which posits that knowledge is a result of experiential learning (described further in Section 1.3). Evidence from sources such as Ofsted suggests that a traditional knowledge-based curriculum in alcohol and sexual health education may be ineffectual in building skills. Consequently, the following chapters will explore how alcohol and sexual health literacy can be developed in formal educational settings.

It is difficult for educators to develop the competencies that adolescents require without a) knowing what these are/ should be, and b) having a strategy for evaluating these competencies. It was necessary, therefore, that models of alcohol and sexual health literacy were developed to address these issues. The main aim of this thesis was to construct models of adolescent AHL and SHL to inform effective competency-based alcohol and sexual health education curriculum.

The purpose of developing conceptual models of AHL and SHL were to organise existing and new knowledge with the aim of providing a visual representation of theoretical constructs to guide future research and education in adolescent alcohol and sexual health literacy (Asher, 1984). Alcohol and sexual health literacy are critical public health issues and early intervention, and prevention are widely recognised as having the potential to improve health outcomes in this area. School based education is an integral part of early intervention in the UK, particularly given a long history of austerity measures which have led to a significant decrease in the alcohol and sexual health services provided to young people. With a focus on early intervention, conceptual models of AHL and SHL provide frameworks within which these complex systems can be better understood to develop effective interventions in a variety of settings. While focusing on the development of AHL and SHL models, the role of education as intervention, specifically PSHE and RSE lessons, was also critically examined within the thesis.

To construct models of AHL and SHL and examine the competencies that adolescents need to be health literate in these areas (Manganello, 2008), the research questions in this thesis were:

1. What competencies do international experts (researchers and policy makers) believe are needed for an adolescent to be literate in alcohol and sexual health?

2. How can existing models of adolescent health literacy and health behaviour be adapted to provide a framework for models of AHL and SHL?

3. How well do existing measures assess health literacy in adolescents?

4. What competencies do local PSHE teachers believe are needed in order for an individual to be health literate in alcohol and sexual health?

5. What are the barriers and facilitators to delivering these competencies, according to expert secondary teachers in the UK?

A mixed methods research (MMR) design was used to create the models for AHL and SHL. Table 1.1 indicates the general methods used to address the research questions.

The remaining chapters in this thesis are:

1. Introduction
2. Literature Review Exploring the Factors that Impact Adolescent Sexual Health and Alcohol Health Literacy
3. A review of Adolescent Health Literacy Models and Systematic Review exploring the validity and reliability of the measures and the concepts assessed by Adolescent Health Literacy Measures.
4. Exploratory Qualitative Study: Alcohol and Sexual Health Education in Dorset and Hampshire Schools.
5. Analysis of Alcohol and Sexual Health Curriculum guidelines for Secondary Schools in Eight Countries.
6. Discussion

Table 1.1: Table depicting research questions addressed in each chapter of the thesis.

	Literature review (Chapter 2)	Systematic Review (Chapter 3)	Exploratory Qualitative study (Chapter 4)	Curriculum analysis (Chapter 5)
Research question 1	x	x		x
Research question 2	x	x		
Research question 3		x		
Research question 4			x	
Research question 5			x	

1.3 Methodology

1.3.1 Rationale

Mixed methods research is described by Johnson et al., (2007, p123) as:

"…the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research (e.g., use of qualitative and quantitative viewpoints, data collection, analysis and inference techniques) for the purposes of breadth and depth of understanding and corroboration" (as cited in Creswell and Clark, 2011).

A mixed methods approach was employed as it is best suited for research problems in which the data source is insufficient or requires the corroborated result (Creswell and Clark, 2011). Currently, research in adolescent AHL and SHL that models and assesses the phenomenon is limited. Models that do exist tend to simply mimic general models of health literacy, based on the work of Nutbeam (2000) instead of defining skills and outcomes associated with SHL and AHL.

Mixed Methods Research (MMR) has been gaining momentum as a method within social sciences research evidenced by a rapid rise in recent years of articles utilising this methodology (Timans, Wouters and Heilbron, 2019). Doyle, Brady and Byrne (2016) identified the following rationale for using mixed methods, namely: triangulation, completeness, offsetting weaknesses and providing stronger inferences, answering different research questions, explanation of findings, illustration of data, hypothesis development and testing and instrument development and testing. The rationale for utilising an MMR approach relevant to this study are (Doyle, Brady and Byrne, p179, 2009):

> "Completeness: using a combination of research approaches provides a more complete and comprehensive picture of the study phenomenon."

> "Offsetting weaknesses and providing stronger inferences: many authors argue that utilising a mixed methods approach can allow for the limitations of each approach to be neutralised while strengths are built upon thereby providing stronger and more accurate inferences."

> "Answering different research questions: mixed methods research helps answer the research questions that cannot be answered by quantitative or qualitative methods alone and provides a greater repertoire of tools to meet the aims and objectives of a study."

Following this rationale and as reflected in the research questions, models of AHL and SHL will be developed utilising existing literature or quantitative methods whilst qualitative data will be used to contextualise the findings among research participants (e.g., teachers). As a result, this thesis is formed of smaller quantitative and qualitative studies rather than one large research project.

1.3.2 Theoretical drive

For the purposes of the thesis, pragmatism was used a philosophical and epistemological framework for interrogating and evaluating the concepts of AHL and SHL in terms of their practical functioning and utility in educational setting. A classical pragmatic epistemology aligned most closely with the approach taken by Dewey (1938) was utilised within the thesis meaning research methods were chosen depending on their capability to answer the research question (Feilzer, 2009). A central tenet of Deweyan pragmatism is transactional realism, specifically that knowledge arises from transactions between the individual and their environment (Biesta and Bubules, 2004). Knowledge is gained through trial and error or through symbolic operations (i.e., thinking about courses of action). Reality is revealed as a consequence of the activities of an individual interacting

with their environment, it is normative in nature. Both the individual and their environment are dynamic forces. As an individual interacts with their environment with the aim of maintaining balance, they develop patterns of possible actions which form habits (Biesta and Bubules, 2004). When the individual interacts with the environment, they are both under the influence of the environment (e.g., the culture) and they also exert changes within the environment creating a system of dynamic feedback. Consequently, the truth is dependent on context. The pragmatic paradigm is rooted in intersubjectivity, feeling that the truth is at the intersection of various individuals' cognitive perspectives.

Pragmatism aims to find a middle ground between positivist/post-positivist and constructivist/interpretivist paradigms by choosing research methods based on the research question in hand, understanding that while qualitative and quantitative methods are distinct, both can be utilised to advance the production of knowledge (Doyle, Brady and Byrne, 2016). The pragmatist paradigm accepts that an objective reality exists outside of human experience but that this can only be encountered and understood through human experience (Tashakkori and Teddlie 2008). This means that knowledge and reality are grounded in habits and beliefs that are socially constructed.

Deweyan pragmatism suggests that there is no epistemological separation between theory and practice. Scientific inquiry is an instrument through which individuals may understand the nature of a problem so that it may be solved through action. The knowledge gained from scientific inquiry do not differ from or contain more value than the knowledge gained from individual experiences (Biesta and Bubules, 2004). Consequently, the quantitative and qualitative phases of the research within the thesis had equal weight in the development of adolescent AHL and SHL models (Johnson et al., 2007). Through multiple stages and methods of data collection and abductive reasoning, I sought to develop understanding of adolescent alcohol and sexual health literacy by combining the reliability of empirical research with the validity and context of lived experience. Regarding ontology, my reasoning was abductive meaning conclusions within the thesis will be formed from by deducing the simplest or most likely conclusion from a set of observations (De Jaegher et al., 2017).

1.3.3 Design approach

Pragmatic inquiry can be described as a serial or sequential process. There is an understanding that there is no absolute endpoint to inquiry in any given subject as new knowledge and experiences from the individual causes change in their context which in turn affects the

individual (Biesta and Bubules, 2004). The process of inquiry can be described in the following process:

- It is felt that a problem requires further inquiry
- The problem is located and defined
- Possible solution(s) are suggested
- The solution is developed and tested through observation and inquiry leading to acceptance and rejection by those actioning it.

The 'problem' identified thus far lies within the development or lack thereof of AHL and SHL in adolescents. In the following chapters, AHL and SHL are defined (section 1.4) and located within the context of the adolescent's internal and external environment through synthesis of existing literature and the qualitative study of Educators' experiences (Chapters 1-5). Possible solutions are discussed whilst reviewing the findings that arose from the process of inquiry (Chapter 6) and continued and further research will be required to accept or reject the use of health literacy models within educational settings.

The function of a model or framework is to represent complex concepts in a format that is simple to grasp. Considering complexity of this task and the widespread use of models in health and education, developing models of AHL and SHL was the most plausible solution to defining, locating, and contextualising AHL and SHL in adolescents. From a pragmatic stance the models must be useful in guiding actions in real-life settings, and this is certainly an objective of existing health literacy models and definitions.

To achieve the aims of the thesis, a sequential and dependent design approach was utilised so that findings from one part of the study are built upon by another (Schoonenboom and Johnson, 2017). This process of synthesis and contextualisation of research and lived experience is integral in developing pragmatic, actionable models. In the initial parts of the thesis, existing data was collected and collated to form the basis of adolescent AHL and SHL models. The validity of such models was then be probed by the latter chapters (4 and 5) using qualitative design methods to form conclusions about the use and application of such models. As shown in Figure 1.1, the point of data integration was after all data had been collected and analysed (Schoonenboom and Johnson, 2017).

The justification for methods used to address the research question will be discussed in each individual chapter. Figure 1.1 summarises how the findings from each chapter of the thesis reconcile to answer the aims and research questions of the thesis.

1.3.4 Limitations

The limitations of MMR are that it largely increases the complexity of evaluations and requires increased resources compared to single methodology approaches. Ensuring that the rigour and quality of each individual piece of research is to the same standard can be difficult particularly when quantitative methods might require much larger sample sizes than qualitative methods to reach statistical significance. This also impacts the weight given to the observations from each study. Finally, critics of MMR highlight that it is not possible to determine the most effective method for enquiry before research is conducted (Brierley, 2017). To address some of these issues the methods in each study are provided throughout and the generalisability of findings is discussed critically in each chapter and in the discussion.

1.4 Defining Health Literacy

For the purposes of this research, it was necessary to define health literacy to consolidate and simplify existing definitions. The aim here was to develop a definition capturing the most comprehensive and evidence-based aspects of health literacy. Particularly as the pragmatic paradigm considers the nature of truth to be at the intersection of beliefs.

The new definition was formed by conducting a Boolean search using WorldCat, PubMed and ScienceDirect databases using the terms “definition” AND “health literacy”. This produced 351 results from which 36 different definitions of health literacy were identified (see appendix A). The definitions underwent manifest content analysis.

“manifest content analysis is defined as describing what is occurring on the surface, what is and literally present, and as “staying close to the text.” Manifest content analysis is concerned with data that are easily observable both to researchers and the coders who assist in their analyses, without the need to discern intent or identify deeper meaning” (Kleinheksel et al., 2020, para.4).

This method of analysis was chosen to produce a definition that would account for common themes in existing definitions of health literacy.

Utilising an open and inductive coding process, the definitions were read through and broken into meaning units for familiarisation (Bengtsson, 2014). These units were subsequently arranged into codes which are shown in Appendix A. This process was repeated to ensure that all codes present in the definitions were adequately represented in the analysis. The codes were then organised into themes all of which were checked against the original data set (i.e., the definitions)

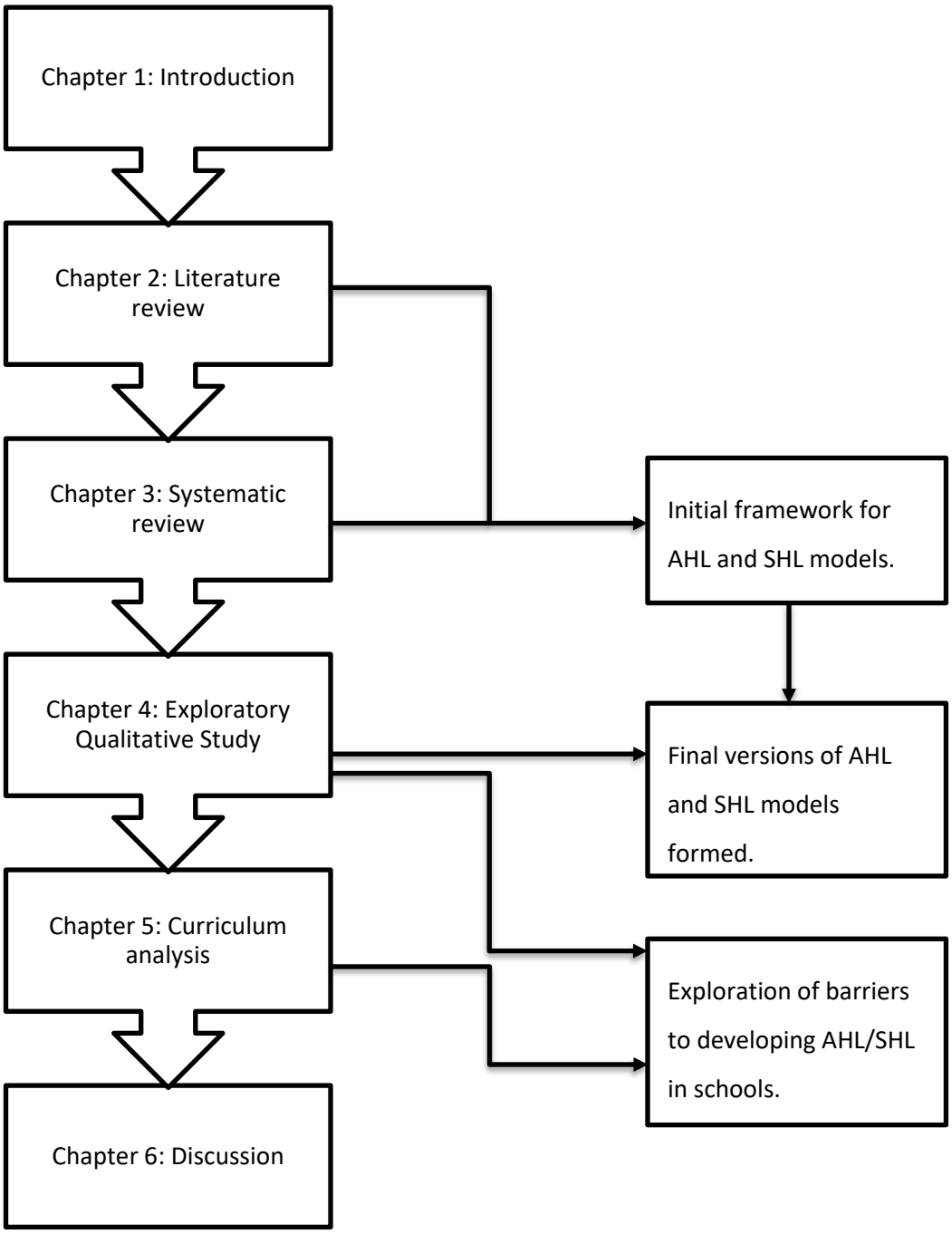
to ensure that they remained as close to the text as possible. The three main themes present in definitions of health literacy pertained to the competencies needed to achieve health literacy, the interaction of these competencies with context and the outcomes of health literacy. The definition was formed using the most frequent codes found in each theme. Codes that were present in over five definitions were included in the final definition. For example, under the theme of 'Individual skills/ knowledge and behaviour', the code 'apply information' was present in 16 definitions and thus was included in the final definition of health literacy utilised in this thesis. Within this thesis, health literacy is defined as:

> Health literacy refers to an individual's capability to find, understand, process and apply health information in order to make informed, health related decisions for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

This definition was be used in relation to alcohol and sexual health. It expanded upon existing definitions and particularly the definition by Nutbeam (2000) by highlighting the importance of multiple skills and the individual's context.

In Chapter 2, the extant research is reviewed to determine the factors that impact adolescent sexual health and alcohol health literacy.

Figure 1.1 Figure depicting organisation of thesis chapters



Chapter 2 Literature Review Exploring the Factors that Impact Adolescent Sexual Health and Alcohol Health Literacy

2.1 Introduction

The aim of this chapter was to review the main external and internal factors associated with alcohol and sexual health in adolescents to form the foundations of AHL and SHL models. The extant literature was reviewed with the purpose of consolidating existing literature to form the foundation of AHL and SHL models and to identify any gaps in knowledge within this area of research.

The following research questions are addressed in this chapter:

- **Research question 1:** What competencies do international experts (researchers and policy makers) believe are needed for an individual to be literate in alcohol and sexual health?
- **Research question 2:** How can existing models of adolescent health literacy and health behaviour be adapted to provide a framework for models of AHL and SHL?

2.2 Method

To direct the literature search, Manganello's (2008) model of adolescent health literacy was used to identify and subsequently substantiate factors that may impact adolescent alcohol and sexual health literacy. The model is presented in Chapter 3 and was used to direct the review in this chapter as it provides an existing theoretical framework of factors that impact adolescent health literacy. A Boolean literature search was conducted between January 2015- April 2015 using the keywords shown in Appendix B using the Delphis interface scanning ScienceDirect, Pubmed and PsychINFO databases. The search terms used correspond to the following sections in this chapter and are presented in detail in Appendix B. The abstracts were examined for information and those matching the inclusion criteria were included in the literature review. The inclusion criteria were as follows:

I. Sample population were between the ages 9-24
II. Studies are reported in English.
III. Studies are peer reviewed.

Where possible, only reviews or longitudinal studies from the UK or similar cultural contexts were chosen for inclusion (Adamopoulos and Kashima, 1999). Where studies based in the UK were not available, studies based in other "Western" countries (e.g., USA, Australia) were chosen to allow for findings to be more applicable in the cultural context of the UK, however due to limited research in particular areas this was not always possible. Further, the locations of some studies were not reported, particularly in reviews or systematic reviews. The pertinence of this is discussed further later in this chapter. Overall, over one thousand results were obtained abstracts were scanned to determine inclusion. 115 studies were included within the review.

2.3 Issues affecting Alcohol Use/Misuse in Adolescents

2.3.1 External Influences

2.3.1.1 Impact of Literacy/ Education on Alcohol Use in Adolescents

Alcohol abuse has consistently been inversely linked with educational attainment in teenagers (Bradley & Greene, 2013). In a 25-year span of evidence in the USA, Bradley and Greene (2013) found that behaviours such as alcohol misuse were implicated as significantly affecting educational attainment in some way in 96.6% of studies (n = 122). It is unclear, however, whether alcohol consumption affects educational attainment or vice versa as there is plenty of evidence that supports both directions (Hayatbakhsh et al, 2011).

Longitudinal studies and those that control for confounding variables provide more insight into the relationship between alcohol use and education in adolescents and across the lifetime. Herttua, Mäkelä and Martikainen (2015) explored educational inequalities in patients admitted to hospital for a reason attributable to alcohol between 2000 and 2007, controlling for the price reduction of alcohol in 2004 in Finland. After measuring levels of education across the patient groups, they found that lower levels of education were associated with an increased risk of alcohol related hospital admission across men and women, after controlling for age, economic income, and economic activity (Herttua, Mäkelä & Martikainen, 2015). Conversely, Huerta & Borgonovi (2010), using data from the British Cohort Study, found that higher educational attainment was more associated with daily or problematic drinking in later life in women. The results also suggested that a higher level of educational qualification and academic performance are associated with various typologies of alcohol

consumption in women. This could be due to a range of factors such as relative pressures of higher status jobs associated with higher educational attainment (Huerta & Borgonovi, 2010).

Regarding adolescents, longitudinal data collected by Latvala et al (2014) at ages 12, 14, 17 and 19-27 (n= 4761, Finland) suggested that alcohol use predicts lower educational attainment regardless of prior achievement. Similarly, extracting data from the National Child Development Study, Staff et al (2008) (n= 9107, England) established that alcohol misuse in adolescence had a direct negative effect on post-secondary educational qualifications by 42 years of age in men but not women, and the effect was more pronounced in men from working class backgrounds. The study concluded that heavy drinking in the teens largely impacts men from disadvantaged backgrounds but has relatively small effects on women (Staff et al, 2008). Exploration into the confounding factors that can affect educational attainment and alcohol use by Hayatbakhsh et al (2011) in Australia found that after controlling for confounding variables, children who performed poorer in school were at more risk of drinking in early adulthood. The confounding variables tested included: maternal alcohol use, age, marital status, mental health status and education, family income, maternal reports of perceived school performance and internalising or externalising alcohol use (Hayatbakhsh et al, 2011).

Specific alcohol intervention programs within schools (such as in PSHE) have been found to reduce episodes of binge drinking and drunkenness in adolescents (Department for Education, 2015). There is some evidence to support that alcohol programs with life skills training, have a positive impact on student knowledge and efficacy to reduce frequency of drunkenness and binge drinking episodes (Department for Education, 2015). Aspects that lead to effective alcohol programs included those that: equipped teachers with the skills needed to deliver such programs, engaged parents/ guardians/ carers, and invited external professionals to deliver effective interventions (Department for Education, 2015).

2.3.1.2 Impact of the Media/ Internet on Alcohol Use

The influences of the media on the drinking behaviour of adolescents are a growing area of research, with studies suggesting that adolescents are particularly susceptible to messages portrayed in the media due to the neuro-developmental changes experienced at this age (Randolph et al, 2013). There is a wealth of evidence to support the notion that media exposure can increase drinking behaviours in adolescents in the UK (Smith & Foxcroft, 2009). Alcohol promotion, advertising and general portrayal of alcohol consumption in the media have all been implicated in increasing the likelihood of drinking behaviours in adolescents (Smith & Foxcroft, 2009). For example, in a systematic

review of longitudinal studies (n = 13, studies from USA, New Zealand, Belgium and Germany) conducted by Anderson et al (2009), studies frequently reported that exposure to media messages related to promotion of alcohol significantly increased the probability of adolescents beginning to consume alcohol. This study also reported that these media messages can increase levels of drinking in adolescents who already drink alcohol (Anderson et al, 2009).

Although the research provides a strong link between media exposure and alcohol use, there is little evidence on whether this drinking behaviour can become problematic. A longitudinal study conducted by Hanewinkel and Sargent (2009) attempted to measure this in 2708 German adolescents. Participants were surveyed about television and movie use and exposure (e.g., if they have a television in the bedroom) and resurveyed after 12-13 months. The study attempted to measure initiation of drinking without parental knowledge and binge drinking behaviours as a gauge of problematic drinking. Overall, exposure to alcohol use in movies and having a television in the bedroom were found to be independent predictors of problematic drinking behaviours in adolescents (Hanewinkel & Sargent, 2009).

Aside from exposure to television and film, there is also evidence to suggest that content in YouTube music videos can also impact adolescent drinking behaviours (Cranwell et al. 2015). Cranwell et al (2015) used an online survey design to measure the occurrence of alcohol use or promotion (amongst other factors such as tobacco use and promotion) in videos as well as what proportion of the 2068 sample of adolescents in the UK viewed the content. The authors reported that alcohol imagery arises in 45% of all YouTube videos and direct branding occurs in 7% of videos (Cranwell et al. 2015). Female adolescents were more likely than males to watch and re-watch videos and thus the authors concluded that female adolescents may be at more risk of exposure than males (Cranwell et al., 2015).

On the other hand, exposure to negative media messages about alcohol have been shown to have a preventative impact in terms of drinking in adolescents in the USA (Randolph et al, 2013). Equally, it is naïve to assume that adolescents make alcohol related decisions based purely on the media, or that media is an overriding influence in these decisions (Randolph et al, 2013). There are a range of studies that report that parental discussion and influence, perceptions of media and peer and family alcohol use can all mediate decisions made by adolescents with regards to media and alcohol (Randolph et al, 2013; Austin, Pinkleton & Fujioka, 2000).

2.3.1.3 Parental Influences on alcohol use

Parental guidance can have a significant impact on the alcohol-related decisions made by adolescents. Nevertheless, discrepancies may exist between parent and adolescent expectations of behaviour which can have a negative impact on teens (Abar et al, 2015). Concerning alcohol use behaviours, Abar et al (2015) investigated a sample of 606 American adolescents and their parents, examining parental knowledge, control, and solicitation of alcohol as well as child disclosure of alcohol use. A 12 month follow up was also conducted. The results showed that the adolescents' reports of alcohol use were more closely related to the adolescents' behaviour than the parents' reports (Abar et al, 2015). Greater discrepancies between parental and child reports were associated with a greater probability of alcohol use in adolescents (i.e., parents who seemed to know less about their adolescent's drinking behaviour had adolescents who consumed more alcohol) (Abar et al, 2015).

When there is little discrepancy between parent and child, parenting factors can reduce alcohol use (Ryan, Jorm and Lubman, 2010). Ryan, Jorm and Lubman (2010) conducted a systematic review attempting to identify parental factors associated with reduced alcohol use in teenagers. Of 77 longitudinal cohort studies, the parenting factors most associated with delayed alcohol initiation were: parental modelling, involvement, and monitoring, limiting availability of alcohol, and the relationship quality between parent and child as well as related factors such as communication (Ryan, Jorm and Lubman, 2010). These factors also predicted reduced levels of drinking in adolescents at follow- up (Ryan, Jorm and Lubman, 2010). 55 of the studies included in the systematic review were conducted in the USA but details of where the other studies were conducted was not reported in the paper. Similarly, a global review of psychosocial risk factors that lead to the initiation of drinking alcohol in adolescence reported that one of the most common precursors for drinking initiation is parental approval (Donovan, 2004).

2.3.1.4 Peer Group influences on alcohol use

Peer influence and/or pressure is often the target for research in substance use in adolescents. From childhood to adolescence, there tends to be a shift in the importance adolescents place on parental guidance, with greater importance of peer influence (Borsari and Carey, 2001). With this shift comes the danger that peer influence can cause adolescents to engage in riskier behaviours such as heavy drinking. Osgood et al (2013) investigated the initiation of alcohol use and friendship in school-going teens (n = 13, 214) in a longitudinal study in the USA. The findings showed that peers can significantly influence drinking behaviour and that adolescents tend to choose peers based on

similarity of drinking behaviour (Osgood et al, 2013). Teens who participated in consuming alcohol were also more frequently chosen to initiate friendships, suggesting that alcohol consumption was viewed as a high-status activity among adolescents (Osgood et al, 2013).

Peer effects on drinking behaviours are also expressed in the use of social networking sites (SNS). Longitudinal data compiled by Huang et al (2014) on 1563 American adolescents on social media use and risky behaviours found that exposure to peers' pictures of drinking was significantly positively associated with individual alcohol use. Teens with peers who drank alcohol were at greater risk of engaging in the behaviour themselves; however, interestingly, teens without friends who drank alcohol were found to be more susceptible to the SNS effect mentioned previously (Huang et al, 2014).

Although the importance of peers on alcohol use is evident, few papers were found in the search that examined the mechanisms of this effect. Nonetheless, in a review of peer influences on alcohol use in US college students, Borsari and Carey (2001) suggested that peer pressure to drink alcohol within a college environment occurs through three discrete processes: persistent offers of alcohol, modelling, and social norms. Persistent offers of alcohol can range from kind offers to more assertive commands. Modelling occurs when students base their behaviour on the behaviour of others, they may deem to be socially important in some way. Finally, social norms dictate that within an environment, specific sets of social rules apply. Thus, in college, heavy drinking is a norm and so students are expected to act in accordance with these norms to be socially accepted (Borsari and Carey, 2001).

There is emerging evidence to suggest that mediating and moderating factors are at play. In the interaction between class climate, peer, and adolescent alcohol consumption, Tomczyk, Isensee and Hanewinkle (2015) found a small, significant mediating effect in the association between peers' and adolescents' alcohol use in a sample of 2490 German students (Tomczyk, Isensee and Hanewinkle, 2015). Moderating effects in this association were found with student to teacher ratio and the number of 'at- risk' students in class (Tomczyk, Isensee and Hanewinkle, 2015). More specifically, teacher to student ratio had a protective moderator effect on the association between peer and adolescent alcohol use, whereas the number of at-risk students had an enhancing moderator effect on the association (Tomczuk, Isensee and Hanewinkle, 2015). This may be because where at-risk students are fewer, teachers are able to monitor other students more closely and impart more information.

2.3.1.5 Impact of health services on alcohol use

In the UK, 17077 young people accessed specialist substance misuse services in 2015-16, of which 48% sought help for alcohol (Public Health England, 2015). Yet, it is believed that many more may require help with alcohol related issues (Healey et al. 2014). Data from the National Epidemiological Survey on Alcohol and Related conditions (n= 43.093, USA) suggested that being younger was associated with not seeking care, or not perceiving a need to seek care for alcohol use disorders (Oleski et al. 2010). This may be a result of the fact that many existing treatments may not be tailored to the needs of adolescents or may be perceived by adolescents as less helpful (U.S. Department of Health and Human Services, 2006). In a review conducted by Sterling et al. (2010), the authors suggested that the main barrier for adolescents seeking treatment is concerned with the organisation of U.S. health care systems. A lack of funding for specialised treatment units and lack of communication between different treatment units are thought to slow the process of effective treatment for substance misuse in adolescents (Sterling et al. 2010).

Regarding access to treatment, Haughwout et al. (2016) utilised National Survey data from the USA (n = 79,885) to explore the settings in which adolescents were likely to receive treatment for substance use. Males with substance use disorders (SUDs) were more likely to receive treatment than females (Haughwout et al. 2016). In respondents without SUDs, contact with the criminal justice system predicted an increased likelihood of seeking or using treatment (Haughwout et al. 2016). Talking to parents also increased treatment utilisation in adolescents (Haughwout et al. 2016). There exists a wealth of evidence within the literature investigating the effectiveness of alcohol interventions in adolescents. However, there are few studies researching the effectiveness of current healthcare systems and the barriers that keep adolescents from them. Thus, it is difficult to pinpoint how healthcare systems can impact the alcohol use behaviours of adolescents. Nevertheless, the findings by Haughwout et al. (2016) suggest that other factors (e.g., communication with parents) may influence the help-seeking behaviours of adolescents with alcohol use problems.

2.3.1.6 Impact of socio-economic status (SES) on alcohol use

Findings from studies relating to the relationship between SES and substance use vary, depending on age (Humensky, 2010). Historically, low SES has been associated with increased substance use (Humensky, 2010). Nevertheless, there is a growing body of evidence to suggest that high SES is also associated with substance abuse (Humensky, 2010). Humensky (2010) employed data from the National Longitudinal Survey of Adolescent Health in the USA to examine the relationship

between adolescent SES and substance use in adulthood. The study found that high parental education and income was associated with higher rates of binge drinking in adulthood (Humensky, 2010). However, the study did not account for other problematic drinking behaviours.

Kendler et al. (2014) studied the relationship between SES, alcohol consumption and problems in adolescence through a broad range of alcohol-related outcomes for individuals at various ages in the UK. The findings were that:

- Age 16: high SES significantly predicted frequent alcohol consumption (higher rates of drinking) and low SES predicted alcohol- related problems (higher rates of alcohol related harm such as alcoholism).
- Age 18: high SES significantly predicted more frequent and heavy episodic alcohol consumption and weakly predicted alcohol dependence.

2.3.2 Internal Factors

2.3.2.1 Impact of Culture/ Religion/ Race or Immigration Status on alcohol use

Culture and religion can impact the decisions made by adolescents to engage in certain behaviours. This may be true especially in the case of behaviours related to alcohol as it is well documented that certain religions and cultures prohibit the use of alcohol. Religion is often reported to be inversely associated with underage or adolescent alcohol use, even when demographic factors are accounted for (Brechting et al, 2010; Porche et al, 2015). However, the nature of this interaction can be more complex, with the extent of the religious belief affecting the relationship with adolescent substance use (Brechting et al, 2010). For example, there is evidence to suggest that adolescents with strong religious beliefs that do not frequently participate in religious practices are more likely to report alcohol use than those who often participate in religious practices (Brechting et al, 2010).

Additionally, it may be important to consider the effects of culture or race in the interaction between religion and alcohol use. A study of US 10th grade students (n = 45,659) conducted by Wallace et al (2007) explored how religiosity and culture affected alcohol use among White, Hispanic and Black ethnic groups. The study reported that religiosity was a protective factor against alcohol use across all ethnic groups; however, the effects of this were greater in white adolescents than in others (Wallace et al, 2007). It is unclear why this is the case; however, it was suggested that this may be due to the nature of religiosity being a more individual construct in White youths compared to Hispanic and Black adolescents (Wallace et al, 2007).

Religiosity has also been implicated in the relationships between parental and peer influence and adolescent alcohol use. There is evidence to suggest that the protective influences of religion are often overcome by peer influence (Grier and Gudiel, 2010). Grier and Gudiel (2010) conducted a study in the USA to examine aspects of religiosity which may act as protective factors against negative peer influence in adolescents (n = 220). Although the study found that peer influence more strongly predicted anti-social conduct than religiosity, the authors suggested that some religious practices (e.g., social justice) can be more protective than others in mediating the effects of peer influence.

A few studies have suggested that parental religiosity can impact adolescent substance use, including alcohol use (Merrill, Folsom and Christopherson, 2005). In a study conducted by Bjarnason et al (2005) of 3524, 15-16-year-old students in Iceland, religious participation was associated with lower levels of alcohol use. However, parental alcohol use was not significantly associated with children's alcohol use. Students drank significantly less in schools where more parents knew each other and where parents were religious (Bjarnason et al, 2005). Finally, the association between alcohol misuse and immigration status is somewhat complicated by factors such as country of origin and assimilation (Donath et al. 2016). A large-scale review conducted by Sudhinaraset, Wigglesworth and Takeuchi (2016) suggested that globally, the prevalence of problem drinking in immigrant populations is due to the unique challenges and hardships faced by this population, or because drinking increases due to assimilation with the new environment. However, the study also indicates that several factors such as age of migration can affect this previous finding (Sudhinaraset, Wigglesworth and Takeuchi, 2016).

2.3.2.2 Impact of Cognitive Ability, Social Skills and Physical Ability on Alcohol Use

Many studies have shown that alcohol misuse during adolescence can lead to significant cognitive impairments (Brown and Tapert, 2004). Literature reviews by Brown and Tapert (2004) and Zeigler et al. (2005) reported that adolescents with problematic or chronic drinking behaviours experience significant deterioration in memory, verbal and non- verbal learning and visuospatial tasks. These adolescents are at elevated risk of neurodegeneration and abnormal changes to brain structure (Brown and Tapert, 2004; Zeigler et al. 2005). The literature also suggests that these adolescents tend to suffer from behavioural problems later in life (Zeigler et al. 2005). The research in this area tends to be robust; however, less research exploring the effect of cognitive ability on adolescent alcohol use was found during the search. However, Willem et al. (2013) investigated the associations between cognitive biases and alcohol use in a sample of 94 adolescents. The findings suggest that low attentional bias and high attentional control can act as protective factors in adolescent alcohol use

(Willem et al. 2013). Further to this, Muller et al. (2013) investigated the relationship between IQ and alcohol consumption in 50,000 young males in Switzerland. Higher IQ was found to be associated with low to moderate drinking after controlling for confounding variables (Muller et al. 2013). The study also reported that confounding variables such as education and disability contributed significantly to the relationship between alcohol use and IQ, suggesting that the interactions between multiple variables must be accounted for in alcohol use behaviours (Muller et al. 2013). Although higher IQ may be associated with higher levels of alcohol health literacy, there may be other factors that affect the strength of this relationships e.g., education and disability.

In terms of social skills associated with alcohol use, Barkin, Smith and DuRant (2002) found that self-efficacy strongly predicted alcohol use in adolescents. The study used questionnaires with 2646 adolescents (USA) to examine the associations between particular social skills and substance use (Barkin, Smith and DuRant, 2002). Similarly, a five- year- study of students (USA) conducted by Scheier et al. (1999) reported that youth considered to possess poor social skills tended to report more alcohol use. This association may have been mediated by refusal skills, which was low in these students (Scheier et al. 1999). Similarly, McKay et al. (2012) conducted a cross-sectional and longitudinal study of adolescents in Northern Ireland (n = 4088), measuring associations between: global self- esteem, academic, social, and emotional self- efficacy, and alcohol involvement. Problematic alcohol use was associated with higher social self-efficacy but lower emotional and academic self-efficacy (McKay et al. 2012). Perhaps different types of self- efficacy can influence alcohol use behaviours in different ways, but it is difficult to summarise these effects without more research in this field.

Only one study, by Blum, Kelly and Ireland (2001), was identified that investigated the impact of physical ability on alcohol use. These authors used data from the National Longitudinal Study of Adolescent Health (n= 20,780) in the United States. The study reported that youth with mobility impairments were significantly more likely than peers to report alcohol use before the age of 12. No other differences between impaired and non-impaired groups were found. The study also reported that youth with cognitive impairments were significantly more likely to report risky alcohol use behaviours (Blum, Kelly and Ireland, 2001). This may be because youth with cognitive impairments were more exposed to risk factors and less exposed to protective factors than non- impaired youths (Blum, Kelly and Ireland, 2001).

2.3.2.3 Impact of gender on alcohol use.

National Statistics in England report that adolescent girls are as likely as boys to have consumed alcohol, but gender differences arise when drinking behaviours are investigated (National Statistics England, 2015). A review conducted by Healey et al. (2014) found that girls aged 15-16 in the UK, Norway, Denmark and Iceland reported binge drinking and drunkenness more than boys, a finding that is reversed in other European Countries. Healey et al. (2014) suggested that this may be a result of social change in these countries that socially and economically empower women. Reviewing the literature, the consensus seemed to be that male adolescents are more at risk of developing problem drinking behaviours than female counterparts (Schulte, Ramo and Brown, 2009). In a review of gender differences in factors affecting alcohol use in adolescents, Schulte, Ramo and Brown (2009) presented evidence that perhaps due to a combination of physiological and social changes that affect males and females differently, males begin to manifest a combination of factors e.g., greater risk-taking behaviours that put them at greater risk of problematic drinking. For example, some studies suggest that males have a higher tolerance for alcohol than females, leading to males consuming larger quantities of alcohol to achieve the same effect (Schulte, Ramo and Brown, 2009).

2.3.2.4 Other internal factors associated with alcohol use

Externalising behaviours have also been implicated in adolescent alcohol misuse (Marshall, 2014). Externalising behaviours are problem behaviours that are expressed in the child's behaviour towards their environment e.g., hyperactivity, delinquency etc. (Jianghong, 2004). A longitudinal study of 7-19-year-olds conducted by Heradstveit et al. (2018) in Norway found that externalising problems were positively associated with alcohol and drug use problems (n= 2438). Another, similar study conducted in Norway by Kjeldsen et al. (2018) of 921 children that followed them from ages 1.5 to 19 found that high externalising behaviour was associated with early intoxication.

Moreover, sensation seeking behaviours have also been linked to alcohol misuse in young people (Marshall, 2014). A review of findings from the Monitoring the Future study in the U.S. by Patrick and Schulenberg (2014) concluded that high levels of alcohol or drug use were associated with sensation seeking. Correspondingly, a review by Wever and Quaglino (2017) found that binge drinking was associated with sensation seeking behaviour, but the causal relationship was unclear.

2.4 Factors affecting Sexual Health in Adolescents

2.4.1 External factors

2.4.1.1 The Association between Education and Sexual Health Behaviour.

Greater educational attainment is associated with greater health (Freudenberg and Ruglis, 2007) and educational attainment has long been associated with sexual health behaviour (Freudenberg and Ruglis, 2007). In a systematic review studying the associations of adolescent health behaviours with academic performance by Busch et al (2014), risky sexual behaviours were consistently associated with poorer grades in schools in the USA. However, these effects may be mediated by factors such as social network usage and guidance from parents (Busch et al, 2014). Interestingly, it has been suggested that this finding only emerges in delinquent adolescent groups who attain poorly in education regardless of sexual behaviours (Busch et al, 2014). Similarly, a large, self-report study (N = 3248) in Japan found that satisfaction in school was not significantly associated with sexual activity (Takakura, Wake and Kobayashi, 2010). On the other hand, a large study (N = > 2000) in the U.S. of the sexual behaviours of male adolescents found that educational attainment and recognition within school could act as protective factors in early sexual debut and risky sexual behaviours (Lohman and Billings, 2008). A study by Graf and Patrick (2015) exploring lifelong sources of sexual information in adults in the USA (n= 410) found that individuals who recalled receiving formal sexual health education in adolescence (usually though the schooling system) demonstrated significantly higher safer sex knowledge compared to individuals that did not receive any formal sexual health education.

In contrast, in a systematic review focusing on the risk of HIV infection in developing countries, educational attainment was associated with greater risk of HIV infection in Africa, whereas in Thailand it was associated with lower rates of infection (Hargreaves and Glynn, 2002). It was suggested that these mixed results could reflect the fact that the age range varied (Hargreaves and Glynn, 2002). These findings may also reflect the complex interactions of factors such as religion, culture, parental influence and education that affect sexual health behaviour.

Aside from general educational attainment, in the UK, RSE and Health Education will be compulsory from 2020. These lessons can provide a wide-reaching intervention to make young people more health literate. Good quality RSE has been shown to have a protective function in adolescent sexual health, for example in delayed initiation and reduced frequency of sex, reducing the number of sexual partners and increasing the use of contraception (Department for Education, 2019). A multi-

faceted approach to RSE is thought to be most effective, as some evidence shows that a contraception-only based program of RSE can lead to higher rates of unintended pregnancy in students (Department for Education, 2015).

2.4.1.2 The Impact of Media/ Internet on Sexual Health Behaviour.

The influences of media on risky behaviours have been researched widely, with strong associations found between various types of media and positive and negative health behaviours. The internet and media can be used as a source of sexual health information by adolescents as they provide an anonymous and confidential way to access information that may be deemed too embarrassing to ask other sources (e.g., doctors, parents, etc.) (Springate and Omar, 2013). The internet can provide both credible and flawed sources of information.

Concerning the negative consequences of the internet, accessing pornography between the ages of 10 and 17 can have adverse consequences, as these adolescents often exhibit more high-risk sexual behaviours (e.g., greater number of partners, reduced use of contraceptives) and are more likely to have skewed views of sexually appropriate behaviours (Springate and Omar, 2013). However, there is emerging evidence that pornography can, under the correct circumstances, be a useful and confidential source of information for young people (Dawson, Gabhainn and MacNeela, 2019).

Further, the internet can also be used to anonymously search for potential sexual partners (Springate and Omar, 2013). In a literature review, Springate and Omar (2013) reported that young people who seek partners online are more likely to contract STIs than peers who do not seek partners online, but this finding may be because these adolescents also have more partners. Additionally, in a review by Brown, Keller and Stern (2009), studies investigating the effects of various forms of media on behaviour found that exposure to sexually explicit materials, regardless of source (e.g., internet, television, music) can have a negative impact on adolescents. Frequent exposure to explicit content on television and film is associated with early sexual debut, unplanned pregnancy, an increase in the number of sexual partners and less contraceptive use (Brown, Keller and Stern, 2009).

However, in some instances. Exposure to sexually explicit material has been shown to be useful for sexual development. For example, a qualitative study of 47 black, same sex attracted young men (15-19 years old) in the USA by Arrington- Sanders et al., (2015) explored the role of sexually explicit material in sexual development. Participants reported that sexually explicit material (SEM) provided the only source of information to learn about sexual development. Participants also cited that SEM provided information on the mechanics of same-gender sex, gauging readiness for sex and

roles and responsibilities during sex (Arrington- Sanders et al., 2015). The results reported in these studies must be considered in the context of pooled information however a systematic review conducted by Jones et al (2014) suggested that studies in this area are often limited. These authors also found that there is very little research on the influence of media on adolescent sexual behaviours and attitudes but due to the design limitations, the results that do exist tend to be weak and cannot be generalised to the wider population (Jones et al, 2014).

With increasing access to various formats of media, there is growing concern that young people are at risk of becoming deeply and adversely impacted by hyper-sexualised and inappropriate content (Flood, 2009). However, reviews exploring this issue often report both positive and negative effects of media on adolescent wellbeing and sexual behaviour (Best, Manktelow and Taylor, 2014). Studies have also indicated that social media and networking can provide a platform from which young people can exploit themselves by creating their own sexually explicit materials, often for some perceived benefit (e.g., higher status within peer group) (Cookingham and Ryan, 2015). Peer norms among social media sites can often influence the behaviours exhibited by teens; for example, if an individual perceives their social media peers to engage in high-risk behaviours, they are more likely to engage in high-risk behaviours themselves (Cookingham and Ryan, 2015). This is often exacerbated by the fact that teens tend to exaggerate their high-risk sexual behaviours in peer contexts and downplay any safe behaviours (e.g., condom or contraceptive use) (Cookingham and Ryan, 2015).

It can be surmised that teens exposed frequently to sexually explicit material (e.g., pornography) can be influenced in some way by the material, most often negatively (Collins et al, 2017). Similarly, evidence from a study by Lou et al (2012) further implicated mass media as significant influences in the sexual knowledge, attitudes, and behaviours of teens cross-culturally across Taiwan, China and Vietnam, three countries which are slowly departing from the traditional to more modern societies.

On the other hand, recent studies have suggested that the media can be a useful source of information about safe sexual health practices (Strasburger, Jordan and Donnerstein, 2010). Guse et al. (2012) conducted a systematic review of 10 studies (7 conducted in the US) that explored the use of the internet and media in sexual health interventions in adolescents (12- 24 years old, mainly students). Eight studies described web-based interventions, one study used mobile phones and one study used social networking sites (Guse *et al,* 2012). Six studies employed a randomised control design, while others were quasi- experimental or pilot studies. The overall findings suggested that the internet, social networking sites and mobile phones could be used to improve sexual health

behaviours in young people, including improving the use of contraception, increasing knowledge of STIs and improving knowledge of pregnancy risk (Guse et al, 2012). As such, although the media or internet can have a negative influence on young people, this may be mediated by individual differences and interpretation of the material accessed.

Moreover, the media and/ or internet can also be utilised as a source for effective intervention in sexual health behaviours. Jones et al (2014) conducted a systematic review of social media and text messaging interventions for people aged 15-24. The results showed that interventions utilising social media and text messages could increase knowledge about the prevention of STIs (Jones et al., 2014). There was some weak evidence to suggest that these interventions could also improve behaviours associated with sexual health e.g., increase STI screenings (Jones et al., 2014). If information is credible and reliable, media could provide a way in which positive sexual health information could be transmitted to large populations of adolescents (Collins et al., 2017).

2.4.1.3 Parental Influences on Sexual Health Behaviour.

As with most health behaviours, parental influence has been shown to impact the sexual behaviours of adolescents (Wight, Williamson and Henderson, 2003). A longitudinal study conducted by Wight, Williamson and Henderson (2003) of Scottish teenagers (N = 5041) illustrated that low parental monitoring (parental awareness of the child's activities), in particular, was strongly associated with early sexual debut in both males and females. Interestingly, the ease with which adolescents communicated with their parents about sexual behaviour did not significantly predict sexual behaviour (Wight, Williamson and Henderson, 2003). Similarly, in a research synthesis conducted by Miller, Benson and Galbraith (2001) parental monitoring, positive parent- child relationships and parents' values about sexual relationships acted as protective factors for teenage pregnancy. They also found that studies largely report mixed effects of parental communication on teen pregnancy, perhaps due to methodological disparities between the studies (Miller, Benson and Galbraith, 2001).

In a study in the US exploring the potential moderator effects of maternal and paternal psychological control in the sexual behaviour of adolescents involving a sample of 181 13- 16-year-olds, parental influences were found to outweigh peer influences on sexual behaviour (Oudekerk et al, 2014). High levels of parental control were associated with risky sexual behaviours irrespective of peer attitude; however, this finding is inconsistent with many other studies (Oudekerk et al, 2014). Moreover, peer acceptance of risky sexual behaviours was associated with higher levels of risky sexual behaviours only when the teen experienced high levels of maternal psychological control (Oudekerk

et al, 2014). This was also apparent for female participants and high paternal control but for males, high paternal control was associated with risky sexual behaviours irrespective of peer attitudes (Oudekerk et al, 2014). This suggests some interaction between parental and peer influences on sexual health behaviour.

2.4.1.4 Peer Group influences on Sexual Health Behaviour

Research has often shown that across the lifespan, individuals use peers frequently as a source of sexual health information (Bleakley et al, 2009; Graf and Patrick, 2015). In a study in the U.S conducted by Widman, Choukas-Bradley and Helms (2013) young people who communicated more with parents and peers about sexual topics (e.g., contraception, sexual health) were more likely to communicate with dating partners about contraception and use contraception. Other large-scale studies have indicated that perceived social norms and having peers who are teen parents can increase the likelihood of young adolescents engaging in sexual behaviours early (Cox et al, 2015).

Furthermore, in a longitudinal study of 1350 American 15-18-year-olds (Henry et al, 2007), friends' perceptions and use of condoms were related to individual condom use. The study suggested that adolescents and their peers tend to have similar beliefs, attitudes, and views though this is modulated by parental control (Henry et al, 2007).

2.4.1.5 Impact of Health Services on Sexual Health Behaviour.

Several factors can impact how adolescents use or access health services with regards to sexual health. Parkes, Wight and Henderson (2004) conducted a large-scale study in the UK, in which 5747 15–16-year-olds were questioned about their use of sexual health services. The authors found that low service use was related to greater distance (proximity) to services, low spending money, and high parental monitoring. Adolescents who reported better knowledge, who reported that school sexual education was effective and who were comfortable talking about sex and contraception tended to use services more (Parkes, Wight and Henderson, 2004). A clinical review conducted by Tripp and Viner (2005, p.593) reported:

- "Confidentiality"
- "Knowledge about legal framework covering services to adolescents"
- "Good access"
- Clinics specifically for male patients as well as those for female only patients
- "Non-judgmental attitudes"
- "Choice of staff by gender where possible"

- "Awareness of cultural issues"
- "Contraceptive methods appropriate to age of young person"
- "Counselling services appropriate for young people"
- Free onsite treatment for STIs
- "Clear routes of referral and liaison to specialist services"

as desirable aspects of sexual health services for adolescents.

Although these aspects have been identified as desirable by young people, it is important to recognise that some of the barriers associated with the use of sexual health services may be due to other external factors such as policy, culture, or socio-economic status. For example, regarding confidentiality, in some cases where young adolescents (minors) disclose sensitive information that pertains to their safety, the healthcare provider may have to breach confidentiality to protect the young person. Further to this, certain laws e.g., legal age of consent, may add to feelings of stigma for young adolescents seeking guidance from sexual health services. Thus, it is important to add government policy as an external factor that affects health behaviour in the adolescent sexual health literacy model.

2.4.1.6 Influences of Socio-economic Status (SES) on Sexual Health Behaviour.

A report conducted by the World Health Organization (WHO) in 2010 entitled "The social determinants of sexual and reproductive health" linked poverty to poor sexual health outcomes through several mechanisms. A poor or unstable economy can often mean that less resources are invested in social services such as education, transport, and healthcare and this (as illustrated in the previous sections) can greatly impact sexual health (WHO, 2010). In adolescents, the report suggested that the lack of autonomy to make health choices in young people (due to age restrictions, parental approval etc.) is heightened by poverty (WHO, 2010). A large-scale study conducted by Singh, Darroch and Frost (2001) and made use of population surveys and general statistics in five developed countries (U.S.A, UK, France, Canada and Sweden) to examine the relationship between socioeconomic disadvantage and women's' sexual and reproductive behaviour. The study found that adolescent women of low income and education were more likely to give birth (and thus have more children) than higher income and education peers (Singh, Darroch and Frost, 2001). However, childbearing during adolescence was also related to race, ethnicity, and immigration status (Singh, Darroch and Frost, 2001).

Similarly, a global review by Hawes, Wellings and Stephenson (2010) examining first heterosexual intercourse found that socioeconomic disadvantage was linked with early sex. The review also suggests that the proportion of highly deprived 13- to 16- year-olds who have sex is significantly higher than counterparts with low levels of deprivation (Hawes, Wellings and Stephenson, 2010). Importantly, the review provides evidence to suggest that the observations relating socioeconomic status to sexual health may be a result of educational level (Hawes, Wellings and Stephenson, 2010). The NATSAL (National Survey of Sexual Attitudes and Lifestyles) reported that after taking educational level into account, the associations of SES with sexual health were not significant (Scott et al., 2017). However, unintended pregnancy and sexual competence (only in men) were independently associated with SES (Hawes, Wellings and Stephenson, 2010; Scott et al., 2017). Sexual competence was measured by four domains: contraceptive protection, consent, self-perceived autonomy, and perception of acceptable timing.

2.4.1.7 Other external factors that impact sexual health behaviour

Regarding other external factors that impact sexual health, there is some research to suggest that simply having a romantic partner can influence sexual health (Kirby, Lepore and Ryan, 2005). However, this is often dependent on the partner's characteristics and can be mediated by other influences such as parental monitoring and peer influence (Templeton *et al.,* 2016). A systematic review and synthesis of qualitative evidence by Templeton *et al.,* (2016) found that romantic partners during adolescence can influence use of contraception or protection during sex. Young women are more likely to be pressured into sexual intercourse within a relationship than males (Templeton *et al.,* 2016). Further to this, a U.S. study by Valois *et al.,* (1999) found that young people with a greater number of sexual intercourse partners were more at risk from unintended pregnancy and STIs.

2.4.2 Internal Factors

2.4.2.1 Associations of Culture, Religion, Race and Immigration Status with Sexual Health Behaviour.

Culture, religion, and associated values are often associated with a young individual's decision to initiate or maintain a sexual relationship (Long-Middleton et al, 2013). This can have large scale implications in terms of sexual health measurement and research, particularly in countries with populations consisting of various races and ethnicities. It is important, therefore, to understand the relationship of these factors with sexual health literacy in adolescents. Rostosky et al (2004) conducted

a review of longitudinal studies examining the influence of religious beliefs on adolescent sexual behaviour. Of the ten studies examined, the overall conclusion was mixed, indicating that religious beliefs affected the sexual debut of female adolescents but not necessarily males. The studies also indicated little influence for race in association with sexual behaviour in White and Black adolescents (Rostosky et al, 2004). However, there are some studies that indicate an association of ethnicity with sexual behaviour. For example, Jayakody et al (2011) conducted a large-scale survey in 2001 (n = 2689) and 2003 (n = 2675) of young adults in East London. The results indicated that Black Caribbean, Black African, White Other (non- British White individuals) or Mixed Ethnicity men were more likely to report engaging in high-risk sexual behaviours such as early sexual debut than White individuals (Jayakody et al, 2011). However, these relationships could be observed due to other underlying factors that also influence sexual health (e.g., socioeconomic status, family values etc.) (Lou et al, 2014).

When exploring ethnicity and religion, immigration status may also provide some answers as to why a disparity may exist amongst different populations in sexual health knowledge. In a large-scale survey in Toronto (n = 1216) exploring the relationship between immigration and access to sexual health services among teens, race was a stronger predictor of youth accessing sexual health services than immigration status (Salehi, Hynie and Flicker, 2014). This was still apparent in acculturated ethnic groups. Ahrold and Meston, (2010) in a study of US college students, (n= 1,415) found that Hispanic and Euro-Americans have less conservative sexual attitudes than Asian peers. However, a longer period of acculturation resulted in more similar sexual attitudes among Asian, Hispanic, and Euro-American students (Ahrold and Meston, 2010). In Euro-American and Asian students, religiosity also significantly predicted more conservative sexual attitudes (Ahrold and Meston, 2010). Considering the research presented thus far, it appears that race/ ethnicity and culture can be associated with sexual health behaviours.

2.4.2.2 Impact of Cognitive Ability and Social Skills on the Sexual Health of Adolescents.

There were few studies that examined the relationship between specific cognitive abilities or social skills and sexual health. Nevertheless, the association between low cognitive ability and sexual health in adolescents has been explored. Adolescents with low cognitive abilities or mental impairment represent a unique set of challenges when compared to non-impaired counterparts as they are particularly vulnerable to abuse or coercion (Quint, 2016). However, a study by Haydon, McRee and Halpern, (2011) which used data collected from the National Longitudinal Study of Adolescent Health (n = 11,878) in the United States, found that young adults with cognitive impairments were no more likely to experience forced or coerced than non-impaired counterparts

(Haydon, McRee and Halpern, 2011). However, this may be since cognitively impaired adolescents may not have the ability to recognise coerced or forced sex (Haydon, McRee and Halpern, 2011). Similarly, a study conducted by Kahn and Halpern (2016) using data from the same study (n = 13845) found that adolescents with low cognitive ability were less likely to experience vaginal, oral, or anal sex than average ability counterparts. Conversely, data from the National Longitudinal Study of Adolescent Health (n = 422) suggested that non- virgin, mentally impaired adolescents were less likely to use contraception and were more at risk from STIs and pregnancy than other adolescents (Cheng and Udry, 2005). Although a few studies report this finding, Haydon, McRee and Halpern (2011) suggested that there is insufficient information from which to draw this conclusion as this population is under-researched in the context of relationships and sexual/ reproductive health.

Regarding specific cognitive or social abilities, few studies link specific skills with sexual health. However, interventions based on "life skills" are proven to be effective in the field of adolescent sexual and reproductive health (UNICEF, 2012). Life skills are described as: "behaviours that enable individuals to adapt to and deal effectively with the demands and challenges of life" (Advocates for Youth, 2002, p.1). Life skills promote empowerment through working on the ability to:

- "Make decisions, solve problems and think critically and creatively"
- "Clarify and analyse values"
- "Cope with emotions and stress"
- "Feel empathy with others and be self- aware". (Advocates for Youth, 2002, p.1)

Some evidence for the effectiveness of life skills interventions in sexual health is provided by a study conducted by Magnani et al. (2004) in South Africa. The study interviewed youth in 1999 and 2001 (n = 2222) to measure the impact of a life skills program implemented in schools (Magnani et al. 2004). Significant effects were found in relation to the life skills intervention and sexual-reproductive knowledge, perceived condom self- efficacy and condom use at first and last sex (Magnani et al. 2004).

Similarly, Metzler et al. (2000) conducted a randomized-controlled trial in which 339 American adolescents, recruited from STI clinics, were assigned into intervention or control conditions (treatment as usual groups). The intervention targeted decision-making skills, social skills and acceptance of negative thoughts and feelings, with the aim of achieving safer-sex goals (Metzler et al. 2000). The decision-making skills module involved encouraging the adolescents to think about potential sexual contacts in terms of costs and benefits (Metzler et al. 2000). In terms of social skills, adolescents were taught skills to navigate difficult sexual situations using techniques such as

modelling (Metzler et al. 2000). Finally, adolescents were taught to experience acceptance of the negative thoughts and feelings that may accompany their behaviour change (Metzler et al. 2000). At six-months follow-up, participants in the intervention group reported: fewer sexual partners, fewer non-monogamous partners, and less sexual contact with strangers in the past 3 months (Metzler et al. 2000).

Additionally, effective communication seems to be a fundamental skill in adolescent sexual health. Widman et al. (2014) conducted a meta- analysis of 34 international studies examining the relationship between sexual health communication and condom use. Communication formats and topics were found to be significant moderators in this relationship, highlighting the need for developing communication skills in sexual health interventions. Similarly, a study conducted by Stone and Ingham, (2002) using survey data from 963 British students, found that contraception use was significantly associated with factors such as discussing contraception use before sexual contact. In terms of the evidence presented thus far, it seems that cognitive and social abilities/ skills are related to adolescent sexual health. However, the research found during the search in this review was limited which makes it difficult to identify which specific skills and abilities are key to sexual health and why this is the case.

2.4.2.3 Impact of Physical Ability on the Sexual Health of Adolescents.

Comparable to the research they conducted studying adolescents with cognitive impairments, Cheng and Udry (2002) also used data from the U.S. National Longitudinal Study of Adolescent Health (n = 1153) to investigate how physical ability impacted sexual health. The study found that physically impaired adolescents were as sexually experienced as non-impaired counterparts (Cheng and Udry, 2002). However, physically impaired males were less knowledgeable about birth control than non-impaired counterparts. Female adolescents with physical impairments were significantly more likely to have experienced forced sex than any other group, whereas males with physical disability were more likely to report greater experience of coerced sex (Haydon, McRee and Halpern, 2011; Cheng and Udry, 2002).

Furthermore, Pownall (2010) used structured and semi-structured questionnaires to explore sexual health and activity in non-impaired, physically impaired, and cognitively impaired adolescent groups (n= >100, Scotland). The study found that physically and cognitively impaired adolescent groups possessed less sexual health knowledge compared to the non-impaired group (Pownall, 2010). This finding is consistent with other research (East and Orchard, 2014). A qualitative study by East and

Orchard (2010) found that parents, educators, and health professionals tend to assign responsibility for educating this population in sexual health to another group that they deem more suitable. Therefore, it is difficult for adolescents with physical disabilities to gain relevant information through the normal sources (e.g., peers, parents, education systems and healthcare) (East and Orchard, 2010).

2.4.2.4 Impact of Gender on the Sexual Health of Adolescents.

Across all age groups in the UK, men have a higher rate of new STI diagnoses than women (Public Health England, 2015). The NATSAL-2 survey of 11161 men and women, Wellings et al. (2001) reported that women were more likely to report regret at their first sexual experience. Although the exact reason for these statistics is unknown, there is evidence to suggest that these findings may be related to gender stereotypes (Marston and King, 2006). A systematic review of qualitative studies (n = 268) conducted by Marston and King (2006) reported that gender stereotypes were integral in shaping sexual behaviour. In all studies, no matter the society or culture, men were expected to be highly sexually active, and women were expected to be chaste, with value placed on a woman's virginity at time of marriage (Marston and King, 2006). Carrying condoms or other forms of contraception, as a woman, is associated with promiscuity; however, women are also expected to be responsible for pregnancy prevention (Marston and King, 2006). For men, sexual promiscuity is associated with higher social status (Marston and King, 2006). These findings show that gender stereotypes still exist within society and can adversely influence the sexual health of young people. However, there is some evidence to suggest that the influence of gender can be moderated by other factors e.g., socioeconomic status, culture etc. (Kar, Choudhury and Singh, 2015).

2.4.2.5 Other Individual Factors that Impact Sexual Health Behaviour

A review by Kirby, Lepore and Ryan (2005) identified sexual orientation, onset of puberty, alcohol and drug use and sensation seeking behaviours as internal factors that impact sexual health. There is evidence for a link between sexual orientation and health risk behaviours (Paediatrics and Child Health, 2008). It is thought that feelings associated with rejection from parents and peers and a lack of appropriate education can cause adolescents who identify as non-heterosexual to take greater risks with sexual health (Kotchick et al., 2001; Paediatrics and Child Health, 2008).

Regarding onset of menarche (puberty) and sexual risk, there is some evidence that suggests that early onset of menarche is linked with sexual risk behaviours. A cross-sectional study of 2093 individuals aged 16-45 years conducted by Downing and Bellis (2009) found that early onset of puberty

was associated with early sexual debut (at less than 16 years of age) and having unprotected sex; the causal links of this, however, are unclear.

The link between alcohol use and sexual risk taking is widely acknowledged (WHO, 2005). A systematic review by Berry and Johnson (2018) found that alcohol and drug use was linked to higher HIV risk due to lack of condom use. The Natsal-3 survey of sexual behaviours in young people (aged 15-24) in Britain (n =3869) found that men and women that reported frequent binge drinking or recent drug use were more likely to report unprotected first sex and more partners, emergency contraception use and STI diagnoses (Khadr *et al.,* 2016). Finally, sensation seeking has also been implicated as associated with risky sexual behaviours (Roberti, 2004). A study exploring sensation seeking and risky sexual behaviour by Charnigo *et al.,* (2013) found that sensation seeking, and impulsivity were associated with young people having more partners, diagnoses of STI(s), engaging in sex with more partners and engaging in unprotected sex.

2.5 Outcomes for Alcohol and Sexual Health Literacy

To identify outcomes of healthy sexual health and alcohol use behaviours, UK government policy and relevant research papers exploring the competencies of such behaviours were reviewed. Where possible, review papers were used to identify widely cited outcomes of healthy alcohol and sexual health behaviours. The competencies found are shown in Table 2.1 and will be incorporated into the models of AHL and SHL.

Table 2.1: Outcomes of healthy sexual health and alcohol use behaviours in adolescents identified within the literature

	Government objectives	**Research-based outcomes**
Alcohol	Department of Health and Social Care, (2015) Reduction in number of young people who choose to drink Reduction in frequency and quantity of drinking. Reduced hospital admissions due to alcohol related harm.	Mentor- ADEPIS (2017) Delayed onset of alcohol use

	Government objectives	Research-based outcomes
Sexual Health	Department of Health, (2013). Reduction of STI rates Building emotional resilience Reduce unintended pregnancy rates	Wellings et al., (2001) 'Sexual competence': Use of contraceptives Consent (of self and partner) Sexual agency and autonomy Feeling that first intercourse occurred at the correct time. Grønbaek, (2009) Pleasure/ healthy sex life. Healthy relationships Development of sexual identity.

Within the field of sexual health, competencies seem more prevalent and developed when compared to alcohol health. Sexual health competencies tended to be more holistic, whilst alcohol health competencies are focused on factual knowledge. This may be reflective of the focus in alcohol education and policy to be risk-focused whilst sexual health education and policy is shifting towards a more positive approach (Shpancer, 2016). Government objectives have also focused on behaviours or incidences, perhaps because these are relatively simple to measure and produce tangible results.

2.6 Summary of Findings and Discussion

A summary of the findings reviewed in this chapter is presented below (see Figure 2.1).

Figure 2.1: Summary of Findings

- Motivation, habits and self-regulation have been identified as pertinent factors in the maintenance of healthy behaviours.
- Low educational attainment is associated with risky sexual health and alcohol misuse behaviours.
- Media/ Internet influences remain very persuasive in affecting alcohol and sexual health in adolescents, but these effects can be overcome through parental monitoring and parental communication.
- Peer groups are a frequently utilised source of reference and information in adolescence and can thus affect alcohol and sexual health.
- Adolescents tend not to access health services for alcohol or sexual health if they perceive the service to be hard to access or if they feel that their confidentiality will be breached.
- The effect of SES on sexual health in adolescents is mediated by education level.
- High SES is related to more problematic drinking in adolescents.
- Culture, religion, race and immigration can have mixed effects on alcohol and sexual health. Religion is often a protective factor whilst the other factors tend to be moderated or mediated by assimilation and parental influences.
- The results for how cognitive and physical ability affect sexual health are mixed. Although studies show that those with cognitive and physical impairment are no different to their peers, these individuals are more at risk of abuse than non- impaired counterparts.
- Communication skills are integral to negotiating safe and healthy sexual encounters.
- There is very little evidence currently to illustrate the association between cognitive ability, physical ability, social skills and alcohol. However, self- efficacy seems to be an important skill in negotiating alcohol use.
- Gender differences in sexual health tend to arise due to gender norms or stereotypes.
- Gender differences in alcohol tend to arise due to specific physiological and social changes associated with each gender.
- Positive outcomes in alcohol health focus on reduction of alcohol use, whereas outcomes in sexual health tend to be more varied.

To address whether the research questions presented in the beginning of the chapter were addressed through the literature review, the validity of findings must first be considered. Cultural contexts can impact a variety of issues related with health competencies from laws and policies related to alcohol and sexual health to how information is communicated and understood (Asher, 2984). As far as possible, research in alcohol and sexual health in Western cultures were reviewed to achieve some context similarity with the UK. However, this was not always possible due to gaps in knowledge within the research or due to a lack of clarity within the studies. For the purposes of transparency when studies reported sample size and sample context (country), these were reported. Interestingly when studies from dissimilar cultural contexts were presented, they contrasted to findings from countries similar in context to the UK. For example, in section 2.4.1.1, studies from Africa

suggested that educational attainment was related to increase to higher rates of HIV infection whereas studies from the USA suggested that higher educational attainment was related to lower levels of STIs. This highlights the importance of cultural context in factors that impact alcohol and sexual health competencies. Although this was controlled for where possible in the choice of studies from Western cultures, there are some instances within the reviewed literature where there may have been findings reported from dissimilar cultural contexts, perhaps making the findings less generalisable to the experiences of adolescents in the UK. Regarding the robustness of the research reviewed, as far as possible studies utilising, literature reviews, systematic reviews and longitudinal and national data sets were presented in this review, minimising the opportunities for bias, and highlighting shared beliefs.

Further, the literature search was directed largely by factors identified by the model of adolescent health literacy by Manganello (2008). Although some attempts were made to explore the literature beyond these factors in sections 2.3.2.4 and 2.4.2.5, Manganello's model highlights the focus of much of the literature in adolescent health being on external influences such as parental and peer relationships, education, and healthcare systems. Fewer and often less robust studies focused on individual traits and conditions that might impact alcohol and sexual health, perhaps because individual traits are harder to measure or observe. Additionally, although there was evidence to support the fact that a variety of individual and external factors impact alcohol and sexual health in adolescents, the relation between these factors and the extent of the impact is unclear. For example, is parental influence more significant than peer influence during adolescence? It is also not clear whether the significance of these factors is mediated by other factors such as individual personality traits.

Much of the research focuses on associations without discussions for why these findings might be apparent. For example, sexuality and sexual identity is associated with sexual health competencies but there is little discussion of why this might be the case although literature exists that highlights inequalities in education and healthcare for individuals that identify as anything other than heterosexual and cisgender (McNeill, 2013). Similarly, research into the competencies of healthy engagement with alcohol and sexual health presented largely consistent findings that focused on the reduction of risks particularly regarding alcohol. Government guidelines tended to focus heavily on risk reduction in both alcohol and sexual health. Concepts of autonomy and pleasure were much more frequent in literature about sexual health.

The purpose of this chapter was to review the extant literature with the purpose of highlighting the factors that are shown to impact adolescent alcohol and sexual health and further identify gaps in knowledge in this field. The research questions were:

- **Research question 1:** What competencies do international experts (researchers and policy makers) believe are needed for an individual to be literate in alcohol and sexual health?
- **Research question 2:** How can existing models of adolescent health literacy and health behaviour be adapted to provide a framework for models of AHL and SHL?

The review identified some competencies associated with alcohol and sexual health literacy through review of the literature which was presented in Table 2.1. Regarding research question two, the review identified several factors that influence behaviour associated with alcohol and sexual health which can be utilised to adapt existing models of adolescent health literacy. This will be explored further in Chapter 3. The findings from this review have addressed the research questions to some degree but, more importantly, several issues with existing knowledge that need to be explored further were identified. Consequently, the findings presented in this review need to be substantiated in the cultural context of the UK. Importantly the review also identified that although several individual and external factors can be associated with alcohol and sexual health literacy, the effect and relationship between these factors and particularly how individual factors may interact are unclear and require further research. Moreover, competencies associated with alcohol health literacy tend to be focused on the reduction of risks whilst the competencies for sexual health literacy account for pleasure and autonomy. These findings will be discussed and explored in more detail in proceeding chapters, particularly chapter four and five, in the context of Education in the UK.

The next chapter (Chapter 3) will review existing models and measures of health literacy to explore whether these models and measures can be adapted to provide measures of adolescent AHL and SHL.

Chapter 3 A review of Adolescent Health Literacy Models and Systematic Review exploring the validity and reliability of the measures and the concepts assessed by Adolescent Health Literacy Measures.

3.1 Introduction

As mentioned in Chapter 1 of this thesis, it is now a statutory requirement that schools in the UK make provisions for RSE and Health Education. Although this is an important advancement in the promotion of sexual and alcohol health in adolescents, it is still unclear how effective programmes might be evaluated. Where provisions might be made to deliver careful and considered programs of Health Education and RSE, it is difficult for schools to assess the outcome as well as the pupils' previous knowledge to improve and/or tailor these sessions, particularly without models of AHL and SHL for reference. The PSHE Association offers some guidelines on how to assess these lessons based on learning outcomes, but this becomes dependent on the curriculum that the school decides to teach rather than focusing on evaluating health literacy. Measuring alcohol and sexual health literacy in adolescents can provide a useful method for feedback, as well as a way of ensuring that young adults leaving school are equipped with the information and competencies, they need to avoid the issues that may arise from poor health literacy.

However, it is difficult to measure a construct without a model from which a measure can be constructed. A model of AHL and SHL in adolescents can provide a useful framework from which Health Education and RSE or other interventions can be designed for effectiveness. Chapter 2 of this thesis explored the factors associated with AHL and SHL in adolescents. It is now necessary to explore how existing models and measures of adolescent health literacy may be adapted to form models and measures of adolescent AHL and SHL. This chapter is therefore divided into two parts. The first part (section 3.2) will review current models of health literacy in adolescents. This will be combined with the findings from Chapter 2 (Figure 2.1) to form an initial model of adolescent AHL and SHL. These models formed part of the background literature for the second part (section 3.3) of the chapter, which is a systematic review of adolescent health literacy measures. The measures in the second part of this chapter will be compared to the models to critically assess their ability to measure AHL and SHL.

The aim of this chapter was, therefore, to explore whether the constructs measured by HL scales can be assimilated into a model of AHL and SHL in adolescents. The systematic review explores the reliability and validity of adolescent HL measures to explore whether they can be successfully adapted into AHL and SHL measures. Accordingly, this review addressed the following research questions:

- **Research question 1:** What knowledge, competencies do international experts (researchers and policy makers) believe are needed for an adolescent to be literate in alcohol and sexual health?
- **Research question 3:** How well do existing measures assess health literacy in adolescents?

3.2 Review of Adolescent Health Literacy and Health Behaviour Models

3.2.1 Methods

A literature search was conducted using the keywords shown below using the Delphis interface scanning ScienceDirect, Pubmed and PsychINFO databases. The search terms used are shown in Table 3.1 below:

Table 3.1: Summary of Search Terms

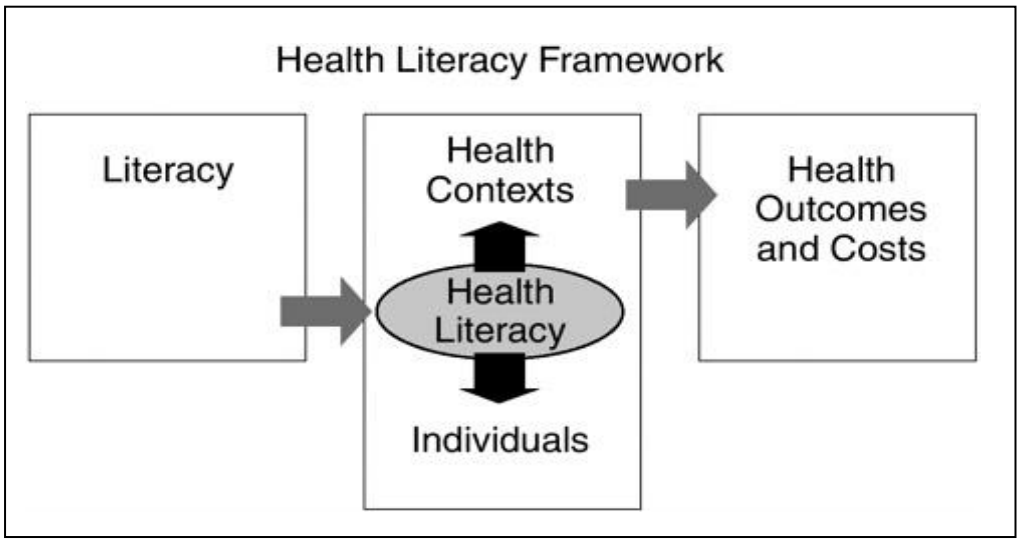
Section	Section
Health literacy AND Model(s) AND Adolescents/Teenagers/ Young People/ Teens	Model(s) AND Health Behaviour

3.2.2 Findings from Literature Review

3.2.2.1 Models of Health Literacy

The literature search retrieved only two models of Adolescent Health Literacy. The Health Literacy Framework, developed by Manganello (2008), is based on the framework for health literacy put forward by the U.S. Institute of Medicine (IOM) (see Figures 3.1 and 3.3). Manganello's adolescent health literacy model also makes use of the Ecological Model (EM) (described below) to portray how different levels of influence can affect health literacy in adolescents.

Figure 3.1: Health Literacy Framework suggested by IOM (Nielsen-Bohlman, 2004) in Health Literacy: A Prescription to End Confusion.



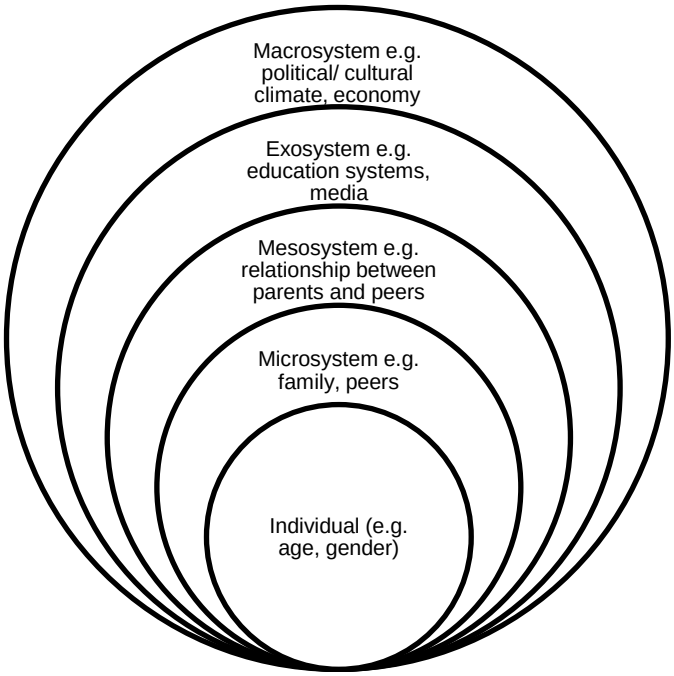
The IOM framework (Figure 3.1) places importance on "literacy" as the basis of health literacy. Literacy here is "defined as a set of reading, writing, basic mathematics, speech and comprehension skills" (Nielsen-Bohlman, 2004, p.33). Health literacy, in this model, mediates the relationship between the individual and their various health contexts (Nielsen-Bohlman, 2004). Health literacy determines the individuals' health outcomes. This framework of health literacy was constructed by a panel of experts in health within the IOM (Nielsen-Bohlman, 2004). Beyond this basic framework, the IOM also identifies that health literacy is impacted by both individual and external influences. Paasche-Orlow and Wolf (2007) presented an evidence-based review of potential causal pathways that explained the relationship between limited health literacy and health outcomes in adults. The authors posited that health literacy should be viewed as a patient and system phenomenon influenced by factors such as access and utilisation of healthcare (Paasche- Orlow and Wolf, 2007). Although the

IOM framework provides a reasonable framework with a strong evidence base, it is of my opinion that the model may be too simple, with specific individual (e.g., cognitive ability) and contextual traits (e.g., parental influence) underdeveloped. Although the adolescent health literacy model by Manganello (2008) is based on this framework, it expands on these factors in greater detail.

The Ecological Model (EM) was initially put forward by Bronfenbrenner (1992) as a way of describing how a child's development is affected by the systems around them. This model (Figure 3.2) consists of four levels, external to the individual: Microsystem, Mesosystem, Exosystem and Macrosystem (Bronfenbrenner, 1992). The microsystem consists of the structure that is in direct and close contact with the child (e.g., peers, parents, and caregivers). The mesosystem consists of the interactions between the different elements of the individual's microsystem (e.g., parents' relationships/attitudes to peers). The exosystem is any setting or element that affects the individual but in which they may not be directly involved (e.g., media). Finally, the macrosystem describes any cultural or political environment that affects all the other systems and the individual (e.g., economy, political and cultural systems). Bronfenbrenner's EM has been adapted and used within research in several ways e.g., "assessing biology- environment interactions through psychopathological contributions of biological and adoptive parents in adolescents' problem behaviour" (Tudge et al, 2009, p.202).

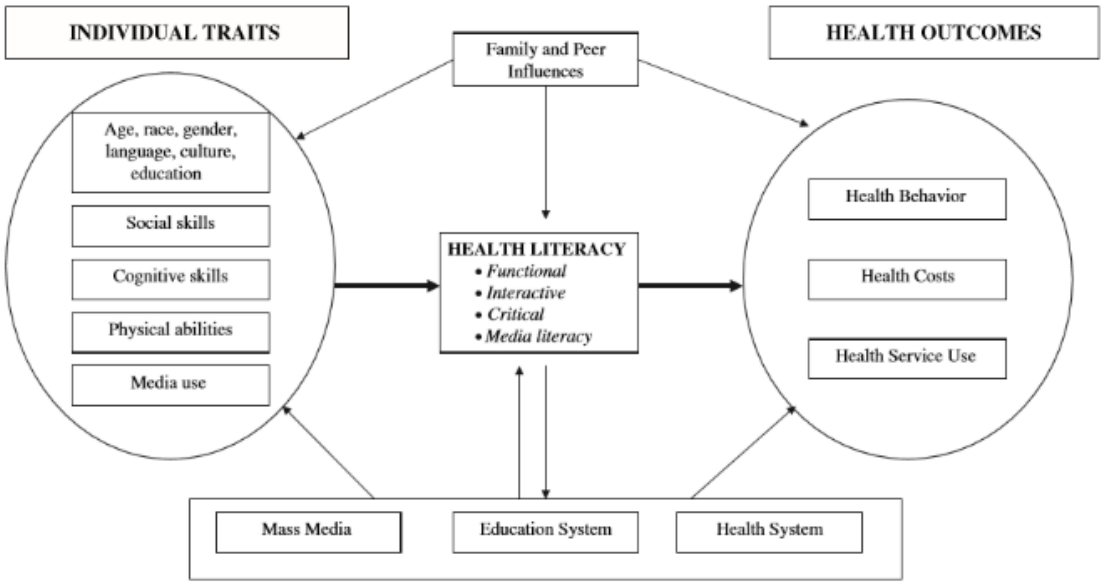
The strength of the EM lies in the fact that it provides many options (or levels) for intervention. It also aligns with the definition of health literacy as a competence that influences and is influenced by the context. However, there is a fair amount of criticism within the literature about the EM. Bronfenbrenner acknowledged that the theory places emphasis on the environment and does not adequately consider the effects of the individual's interaction within the environment (Bronfenbrenner, 1992). There is also a lack of empirical evidence to support this theory, and little detail provided about how the levels interact. By combining this model with the IOM framework, Manganello (2008) overcame some of these weaknesses.

Figure 3.2: Bronfenbrenner's EM (1992)



The adolescent health literacy model by Manganello (2008) consists of four categories of factors that interact to produce health outcomes: 1) Individual Traits, 2) Parent and Peer Influences, 3) Systems 4) Health Literacy (see Figure 3.3).

Figure 3.3: Model of Adolescent Health Literacy by Manganello (2008), p843.



The individual traits or characteristics were largely taken from the IOM framework and include factors such as age, culture, cognitive and physical abilities, and social skills. Interestingly, Manganello also includes media use here "given that adolescents are frequent users of the mass media" (Manganello, 2008, p.842). Parent and peer influences are included separately from systems in the model, as these factors are especially pervasive during adolescence. Systems can be described as anything that would be in the adolescent's exosystem or macrosystem. Health literacy, in this model, is a direct result of the effects exerted by the individual traits, parent and peer influences and the systems. The health outcomes are a result of the adolescents' health literacy.

Health literacy in Manganello's model is described in three levels: functional, interactive and critical and includes media literacy as an extra component (Manganello, 2008). These levels of health literacy were originally developed by Nutbeam (2000) as a way of defining health literacy. The levels of health literacy can be summarised as (Nutbeam, 2000):

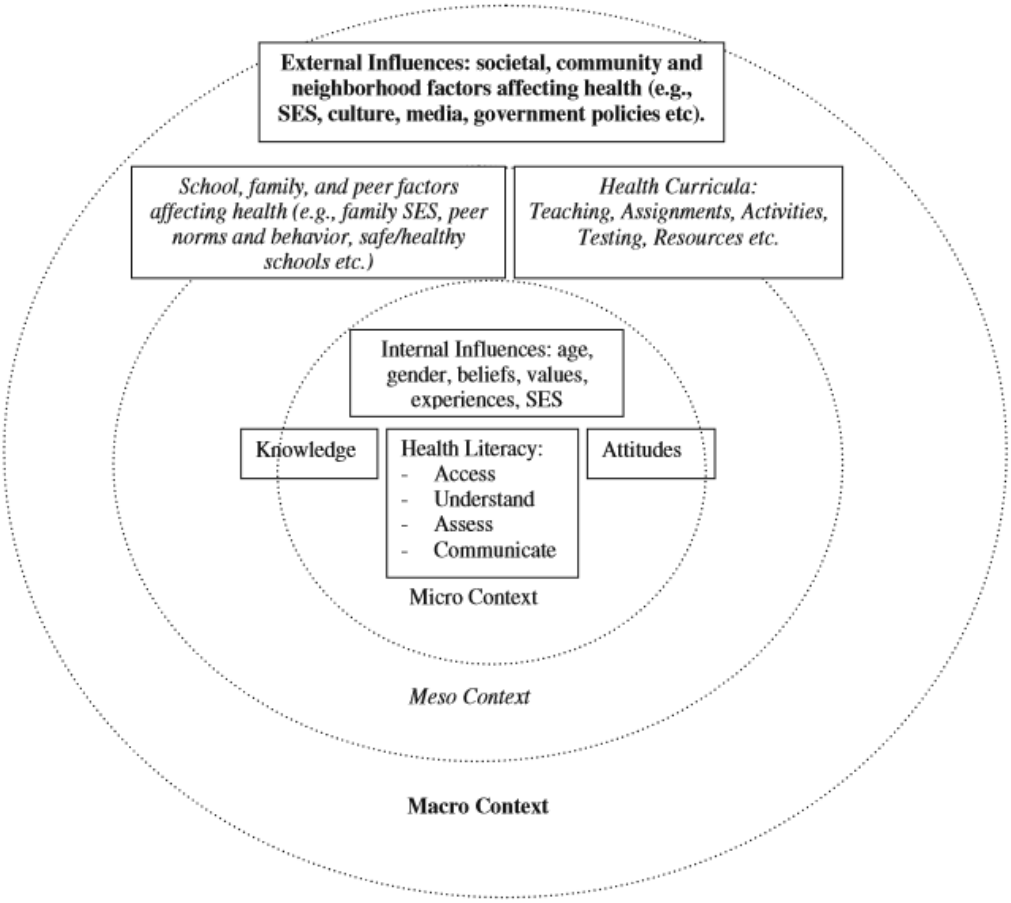
I. Functional health literacy involves basic literacy and communication skills (reading, writing etc.).
II. Interactive health literacy: Functional health literacy and social skills that allow individuals to engage with their health services and care.
III. Critical health literacy: functional and interactive health literacy, and the ability to critically appraise and use health information or information that may pertain to health.

However, there are some limitations in this model. The model postulates that factors individually, and through interaction with other factors, affect the individual's health literacy and thus their health outcomes. There is an abundance of evidence that links poor health literacy to poor health outcomes (e.g., alcohol abuse). However, there is little explanation of how these factors interact to produce positive or negative health outcomes. For example, a paper by Schmidt et al. (2010) attempted to find correlations with factors associated with health literacy, health behaviour, social status and gender in order to improve scales of health literacy in children (n = 852, Germany, age range 9-13). Social status and gender only predicted health knowledge, not health behaviour or attitudes (Schmidt et al. 2010). This suggests that measuring health literacy alone may not predict health behaviour. This places more emphasis on the systems, traits and relationships identified by Manganello (2008). Although Manganello (2008) provided evidence for how each of the traits and systems affects health literacy, there is a lack of detail. For example, it is unclear which cognitive or

social skills affect health literacy. Some of the traits are not adequately defined and thus, creating a measure of adolescent health literacy from this model would be difficult.

The next model retrieved in the literature search was the adolescent health literacy model by Wharf Higgins, Begoray and MacDonald (2009) that also uses the EM as a basis for modelling health literacy in adolescents (see Figure 3.4). These authors used a mixed method approach to design the model, using quantitative and qualitative data from students and teachers to collect data surrounding the effects of socio-ecological influences on students' learning surrounding health. A literature review was used to identify how health literacy should be defined in this case (Higgins, Begoray and MacDonald, 2009). The model identifies three levels of context in the life of the adolescent: The Micro Context, Meso Context and Macro Context. The Micro Context refers to the individual student and their traits, including health literacy. The Meso Context is similar to the Microsystem in the EM and involves any factor that has a direct influence on the individual. The Macro Context combines the Macrosystem and Exosystem from the EM and refers to external influences that indirectly (or less directly that the meso context) affects the adolescent. The Higgins, Begoray and MacDonald (2009) model was designed with a clear evidence base, reinforced by the qualitative studies carried out by the authors to inform parts of the model. The qualitative studies (N = 71 student, N = 15 teachers) showed that contextual factors (e.g., school, family, peer factors and education) can be extremely influential, with regards to health or health literacy, in the lives of adolescents.

Figure 3.4: Socio ecological Model of Adolescent Health Literacy (Higgins, Begoray and MacDonald, 2009, p.355).



However, the model does have some limitations. For example, by forgoing the Mesosystem from the EM, the model does not adequately represent how the interactions between elements within the wider context can influence the individual (e.g., interaction between parents and health curricula) (Bronfenbrenner, 1992). The model also places health literacy within the individual, as an internal influence (Higgins, Begoray and MacDonald, 2009). Higgins, Begoray and MacDonald (2009) suggested that health literacy is affected and maintained by the individual's personal attributes e.g., age, beliefs, values, etc. Alternatively, key developers of the term "health literacy" such as Nutbeam (2000) have posited that true health literacy, when all the levels of health literacy are achieved, involves health promotion and participation by the individual in their community. Therefore, health literacy can not necessarily be viewed as just a personal skill or attribute but one that impacts and is impacted by the individual's context.

Manganello's model of adolescent health literacy overcomes this by identifying health literacy as a factor that impacts and is impacted by other systems, including parents, peers, education etc. (Manganello, 2000) which is evidenced by the studies mentioned above (e.g., Mantwill, Monestel-Umana and Schulz, 2015). The research suggests that health literacy can be a mediating variable (i.e., it can at least partly explain the relationship) between factors such as gender and race, and health behaviour. A further limitation of the model by Higgins, Begoray and MacDonald (2009), as with the previous model, is that there is little evidence to support how these factors affect health behaviour and related outcomes.

Considering the strengths and limitations of each model, it seems that the model put forward by Manganello (2008) may be a more adequate starting point in conceptualising adolescent alcohol and sexual health literacy. Many of the factors present in this model (e.g., media, health, education) were also supported by findings from Chapter 2 (Section 2.6). The findings from Chapter 2 can now be arranged in the framework provided by Manganello (2008) to form initial frameworks of adolescent AHL and SHL.

3.2.2.2 Models of Health Behaviour

Health behaviour is an integral part of health literacy. In chapter 1, the review of definitions of health literacy found that the ability to make informed health decisions, health enhancement and maintenance were often cited as competencies of health literacy (See Appendix A), and this is evident in Manganello's model of adolescent health literacy as shown in section 3.2.1.1. Interestingly, however, the models of health literacy reviewed in 3.2.1.1. do not explicitly utilise health behaviour theories or models. Models of health literacy and health behaviour align with pragmatic philosophy in the common emphasis on application to practice.

As the final aim in the formation of these models is to aid in the development and evaluation of competencies associated with alcohol and sexual health literacy, it is necessary to explore models that predict health behaviour. Dewey (1938) described the nature of reality as transactional meaning that an individual effects change on and is affected by their environment (as cited in Biesta and Burbules, 2004). Some popular health behaviour models do display this dynamic interchange, identifying both individual and environmental factors that influence a person's health in various contexts. For example, widely- utilised theories such as the Theory of Reasoned Action (TRA) and its extension the Theory of Planned Behaviour (TPB) are cognitive theories that help predict health behaviours in specific contexts (Fishbein and Ajzen, 1975; Ajzen, 1985). In both theories, the intention

to engage in a behaviour predicts whether a person engaged in the behaviour. Intentions are predicted by attitudes (under the individual's control) and subjective norms (how valued their behaviour is among family and friends). Both the TRA and TPB account for beliefs that a person forms over time through learning and interacting with their environment or through learning from others. These factors closely align with the pragmatic view of knowledge forming through action. Although, meta-analytic reviews provide support for the efficacy of TRA and TPB, the models have been criticised for the exclusion of emotional factors (LaCaille, 2013). Other health behaviour models that do account for emotional components in decision making such as the Health Belief Model (HBM) are then criticised for a lack of detail on learned behaviours and actions (Taylor et al, 2007). The HBM focuses on the individual's perception of risk of completing a health behaviour as a predictor of health behaviour (Taylor et al, 2007).

The issue is that many models of health behaviour exist, with large bodies of research providing evidence for the predictive ability of each in adult and adolescent populations (Conner and Norman, 2009). With such a vast amount of health behaviour theories present within the literature, each with a body of research that supports the use of the theory and subsequent model it is difficult to ascertain which of these theories might be the most accurate in explaining health-related behaviour. Critics of health behaviour theories highlight that many health behaviour theories contain similar constructs but use different terminology and are grounded in different theoretical perspectives although when it comes to measurement, many of the constructs in all the models appear to be the same (Noar and Zimmerman, 2005). Further, research tends to focus on providing support for health behaviour theories rather than refuting them (Reid and Aiken, 2011). There is also little research into how constructs present within health behaviour models interact to predict health behaviour, an issue that is also present in health literacy models.

These issues make it difficult to ascertain which health behaviour models would be best utilised in models of AHL and SHL. However, research is emerging that attempts to draw consensus between health behaviour models with suggestions of specific constructs common to these models that are associated with health behaviour. This might provide a more suitable way to progress models of AHL and SHL than the utilisation of specific health behaviour models in the models of AHL and SHL.

A systematic review of health behaviour theories by Kwasnicka et al., (2016) identified 117 behaviour theories with five overarching themes:

- Role of motives

- Self-regulation
- Individual resources (psychological and physical)
- Habits
- Environmental and social influences.

Some of these themes are evident in the health literacy models reviewed in 3.2.1.1, particularly individual resources and environmental and social influences. In 2016, Kwansnica *et al.,* (2016) conducted a review that summarises the main characteristics cited within the research as aiding individuals with maintenance of positive health behaviours. Kwansnica *et al.* (2016) identified five major themes: maintenance motives, self-regulation, habits, resources, and environmental and social influences. Resources can be represented by individual capabilities (e.g., cognitive ability) and external factors (e.g., access to healthcare services). Resources and environmental and social influences are discussed further in the following sections of this chapter as they are relatively broad subjects. Specific resources and environmental/social influences will need to be identified with reference to the adolescent population.

Regarding maintenance motives, motivation arises from: the enjoyment of behaviour and the extent to which a behaviour is congruent with the individual's identity (Kwansnica *et al.,* 2016). Self-regulation is the ability to actively control one's own behaviour. Habits refer to the ease with which health behaviours can be carried out, consciously or unconsciously, and the time taken to make these behaviours learned (Kwansnica *et al.,* 2016). Resources relate to the capacities of the individual and the sources of support within the environment (Kwansnica *et al.,* 2016). Motivation, habits and self-regulation can be added to the individual factor's component of the model. As there is a wealth of research that supports the idea that these factors are pertinent in any behaviour, they will be incorporated into the model.

3.3 Systematic Review of Adolescent Health Literacy Measures

3.3.1 Methods

An initial literature search revealed that there are no standardised and valid tools that assess alcohol health literacy in adolescents currently. One study that measured adolescent sexual and reproductive health literacy was identified. Vongxay et al (2019) created a measure of sexual and reproductive health literacy (SRHL) for adolescents in Lao. This measure will be discussed in further

detail later in this section. Nevertheless, many measures of health literacy exist, and some have been tested in adolescent age groups (Manganello, 2008). It may be possible to integrate the specific constructs (e.g., behaviours, traits, skills etc.) measured by Health Literacy tools to advance the models of AHL and SHL in adolescence. It may also be possible to adapt existing measures of health literacy to form the basis of a measure for adolescent AHL and SHL.

The protocol for this systematic review is provided in the Appendix C. As this study was concerned with the measure of health literacy in adolescent age groups it was necessary to define adolescence and the age range that would be acceptable in this review. WHO defines adolescence as "the period in human growth and development that occurs after childhood and before adulthood, from ages 10 to 19" (WHO, 2015). This definition was used to set some of the parameters in the search associated with the target population. Further to this, inclusion criteria were developed to create a sensitive search. The inclusion criteria were as follows:

A. Studies that attempt to validate a measure of ***health literacy*** specifically
B. The measures must target or be sampled on individuals up to 19 years of age
C. Studies from any date are acceptable
D. Studies must utilise a non-clinical population (i.e., healthy people)
E. A definition or description of health literacy must be present within the research
F. Articles must be reported in English

Inclusion criterion A required that measures were focused specifically on general health literacy as other, specific types of health literacy measure (e.g., eHealth literacy) may be too specific to adapt to a measure of sexual health or alcohol literacy. Studies that measured any form of validity of health literacy measures in adolescents were included. This included (but was not limited to):

- Content validity: the extent to which items of the instrument represented the domain that the whole instrument attempted to test (Salkind, 2010).
- Construct/ structural validity: the extent to which the instrument measures what it claims to measure (Lavrakas, 2008).
- Criterion validity: a comparison of a new measure to a well-established measure to establish agreement between measures. It includes concurrent validity (Salkind, 2010).

Criterion D was designed to clarify that the researchers intended to measure health literacy and not related factors such as health behaviour.

As mentioned previously, one study measuring SHRL in adolescents was identified in an earlier literature search. However, the study did not report on the validity of the measure and indeed the authors identified the need to validate the measure in future research (Vongxay et al, 2019). Therefore, this measure was not included within this systematic review.

An initial search was conducted employing the terms "health literacy", "measure" and "adolescents" to identify other related search terms that could be used in the systematic review. Information was extracted from a review conducted by Haun *et al,* (2014) of existing health literacy measures to add specific measure titles (such as TOFHLA and REALM) to the search terms. The search terms are presented in Table 3.2.

Table 3.2: Search terms

Health Literacy	Health Literacy
Measures	Measures/ Tools/ TOFHLA/ REALM/ Comprehension of 50 medical terms/ Lipkus Expanded Health Numeracy Scale/ Health Literacy Component of the NAAL/ 3 item Health Literacy Screening/ Medical Data Interpretation test/ Newest Vital Sign/ Single Item Literacy Screener/ Subjective Numeracy Scale/ Functional Health Literacy Test/ Medical Term Recognition Test/ Health Literacy Skills Instrument/ Health Literacy Assessment/ Numeracy Understanding in Medicine/ Swiss Health Literacy Survey/ Health Literacy Questionnaire/ Health Literacy Management Scale/ European Health Literacy Questionnaire/ All aspects of Health Literacy Scale/ General Health Numeracy Test/ Signature Time
Adolescents	Adolescents/ Teens/ Teenagers

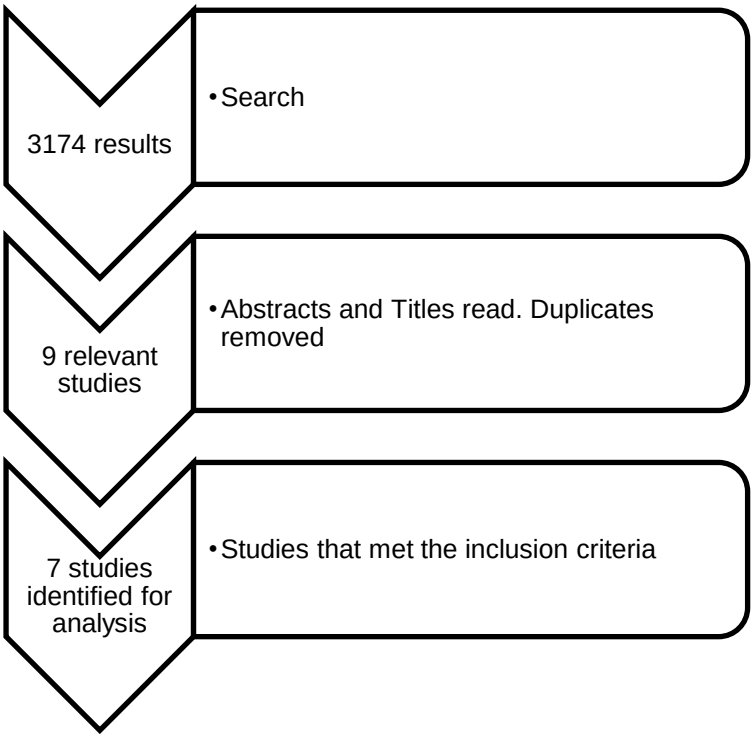
The search terms were employed between 23/11/15- 4/1/16, in the following databases:

- EBSCO: a multi-database search platform
- PubMed
- Web of Science
- ADOLEC: database for child and adolescent research
- DARE: database for abstract reviews of effects
- Open Grey

Details of specific dates, combinations of search terms, expanders/limiters and results yielded in each search can be found in Appendix C. EBSCO, Web of Science and PubMed databases were chosen as useful cross-literature databases to broaden the search subjects and reduce source bias. ADOLEC was chosen as a more specific database that specialises in research pertaining to adolescents and DARE and Open Grey were utilised to identify any grey literature or pre- published abstracts. Where possible, expanders such as “apply related word” were used to include any relevant studies that did not fit some or all of the search terms. Limiters such as “human participants only” were also employed to fit the inclusion criteria. All searches were repeated between 22/2/16- 2/03/16 to reduce selection bias and to ensure that no new studies were available.

The title and abstracts of articles that seemed relevant were initially searched to identify possible studies for analysis. The articles that were carried forward after this examination were then explored in detail and examined in relation to the inclusion criteria. Overall, seven studies were identified that met the inclusion criteria. The studies were then subjected to the Consensus- based Standards for the selection of health measure Instruments (COSMIN) checklist to assess validity and reliability of the measures where possible (Terwee *et al,* 2011). The COSMIN checklist was selected as it has a strong research base and was designed specifically to appraise the quality of health measures (Terwee *et al,* 2011). Each measure was subjected to the COSMIN checklist based on the individual study aims and types of validity tested. Thus, the measures do not share the same overall score. Further analysis involved comparing reliability scores of the measures and an attempt to group common sub- scales within the measures, to explore whether some aspects of the health literacy measure were more reliable than others. The further analysis and comparison of studies was conducted based on the data provided within the individual studies and thus may be subject to bias introduced by selective reporting within studies. It was not possible to statistically compare studies further as the raw data results of the measures were unavailable.

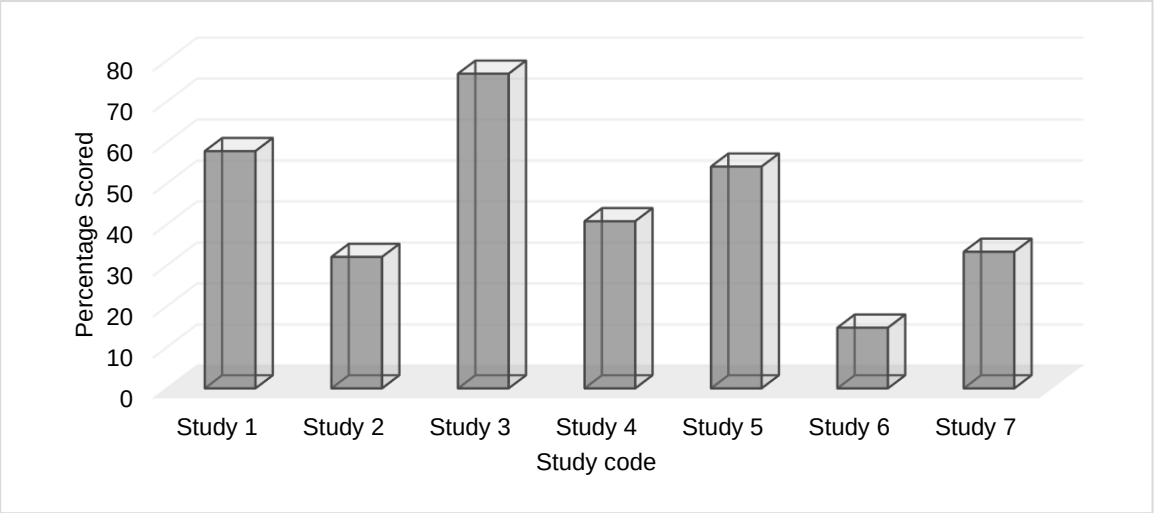
Figure 3.5: Figure illustrating the search process



3.3.2 Results of Systematic Review

The search process, and results yielded at each stage, are depicted in Figure 3.5. After the inclusion criteria were applied, seven studies remained that were assessed for quality using the COSMIN checklist (Terwee *et al,* 2011). The main features of each study are summarised in Table 3.2 below. Four studies attempted to create a new measure of health literacy for adolescents whilst the remaining studies attempted to test the validity of existing measures of (adult) health literacy in an adolescent population. Two of these studies used the TOFHLA, the remaining study used the Newest Vital Sign. Similarly, some of the other measures also utilised a few items from existing health literacy measures. Overall, the sample populations of the studies ranged from 7-19 in age. The study samples ranged from 50 to 1208. Table 3.3 summarises the main characteristics of each study and subsequent scoring on the COSMIN checklist. All of the studies reported that the relating scale could be used to measure health literacy in adolescents; however, more research is necessary in order to establish this. In terms of study quality, most of the studies scored moderately on the COSMIN checklist, with study 3 scoring highest, at almost 77% and study 6 scoring the lowest at around 15% (see Figure 3.6). The main issues that led to low scores on the checklist tended to be inadequate or no reporting of missing items and how these were handled and an absence of re-testing measures.

Figure 3.6: Percentage scores achieved by each study subjected to the COSMIN checklist.



Construct validity was tested in three of the studies (studies 1, 3, 5) using some variation of factor analysis (Chang, Hseih and Liu, 2012; Ghanbari *et al, 2016;* Massey *et al,* 2013). All of the measures showed a moderate to high level of consistency and discriminability; however, in studies 1 and 5, factor analysis showed that there were additional or fewer subscales than initially hypothesised (Ghanbari *et al, 2016;* Massey *et al,* 2013). In the case of study 1, the researchers were unable to define what the new sub scales measured (Massey *et al,* 2013). Concurrent validity was tested in four studies by correlating the measure or items from the measure to existing functional literacy measures (studies 4, 5, 6, 7) (Chang. Hseih and Liu, 2012; Chisolm and Buchananan, *2007;* Manganello *et al,* 2015; Warsh *et al,* 2014*)*. The correlations between new measures and established measures tended to be moderate to high ($r = 0.59\text{-}0.74$, $P < 0.01$) (Chang. Hseih and Liu, 2012; Chisolm and Buchananan, *2007;* Manganello *et al,* 2015; Warsh *et al,* 2014*)*.

Structural validity was tested in one study (study 2) and was achieved by correlating the scores of health literacy to independent participant characteristics such as gender (Wu *et al,* 2012). The main finding was that (self- reported) grade point average explained the largest variance of results in the health literacy measure (Wu *et al,* 2012). Finally, content validity was assessed in two studies (2 and 3). Ghanbari *et al,* (2016) assessed content validity both qualitatively, using professional opinion and scoring, and quantitatively, using exploratory factor analysis. Items that inadequately met set threshold of scores (see Table 3.3) were discarded. Wu *et al,* (2012) correlated scores from the health literacy measure to grade point average and academic skills to test this. The study found moderate

overall correlations between item subscales and grade point average and academic skills (r= 0.416-475). Predictive validity was not tested in any of the measures.

Table 3.3 summarises some of the statistical measures taken in the studies. The overall internal reliability of scales tended to be high, with a Cronbach's alpha range of 0.76-0.93, varying by construct. Different types of validity were tested with several different methods and results for these were mixed across the studies. This is summarised in Table 3.4. Table 3.3 also summarises any subscales present in the measures. Five of the seven measures included subscales (Study 1, 2, 3, 4 and 7). The further two measures (Study 5 and 6) involved a vocabulary test (s- TOFHLA) and a test measuring reading comprehension and numeracy (Newest Vital Sign). The constructs assessed by each instrument were examined and are summarised in Figure 3.3.

The **ability to comprehend verbal or numeric information** was a construct at least partly assessed by most of the measures of adolescent health literacy, perhaps indicating the importance of this construct. For example: the HAS-A involves the subscale "Understanding health information", the HELMA has specific subscales for "Reading" and "Numeracy" and the measure created by Wu et al. (2012) (Study 3) includes the subscale "Understanding" with regards to health information (Ghanbari et al. 2016, Manganello et al. 2015).

Evaluation of health information was the next most common construct assessed by the HL measures, found in four of the measures: HL measure by Massey et al. (2013), HL measure by Wu et al. (2012), HELMA and HAS-A (Ghanbari et al. 2016, Manganello et al. 2015). Two measures assessed: **self- efficacy** (Massey et al. 2013, Ghanbari et al. 2016), **accessing or seeking health information** (Massey et al. 2013, Ghanbari et al. 2016) and **communicating health information** (Ghanbari et al. 2016, Manganello et al. 2015). One measure assessed how respondents use health information (HELMA: Ghanbari et al. 2016). One measure assessed how the respondents interacted with health care systems (Massey et al. 2013).

Figure 3.7: Chart depicting the constructs measured by HL measures

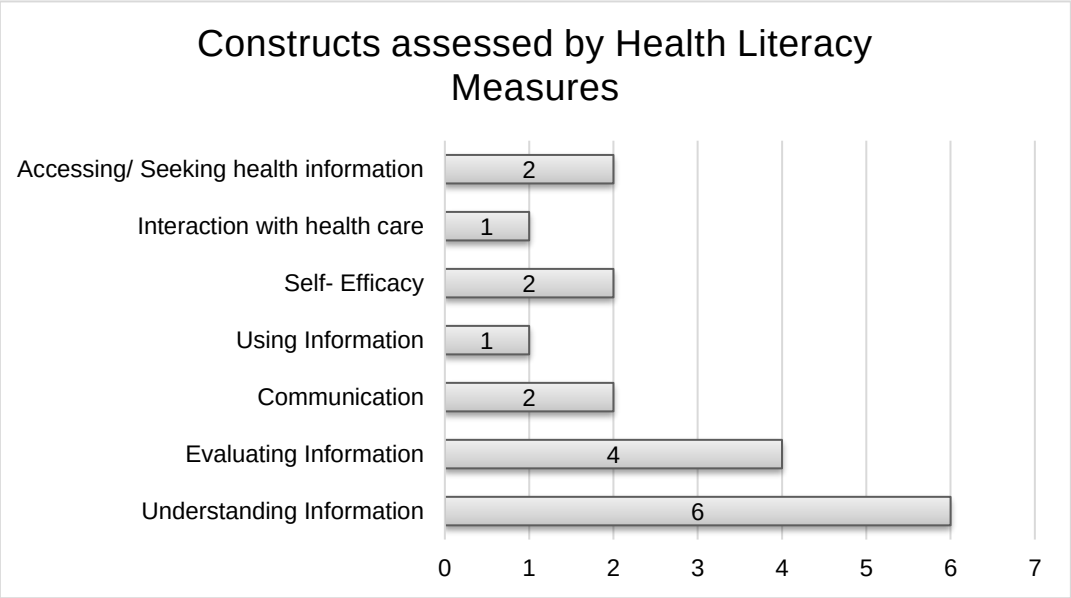


Table 3.3: Summary of measures and COSMIN scores

Study	Author (s)	Country	N	Age range	Recruitment procedure	Properties	Subscales (if any present)	Main findings
Findings Toward a Multidimensional Measure of Adolescent Health Literacy	Massey *et al,* 2013	USA.	1208	13-17	Adolescents recruited from community centres and clinics.	Questionnaire based on subscales where participants indicate their answer on a likert scale.	Patient- provider encounter Interaction with health care system Rights and Responsibilities Confidence in health information from Media Source Health-information seeking and competency using internet.	Questions formulated by formative research belong in six distinctive sub scales that relate to health literacy. Only four domains were hypothesised and thus it is difficult to understand what the other two domains measure.

Study	Author (s)	Country	N	Age range	Recruitment procedure	Properties	Subscales (if any present)	Main findings
Developing and evaluating a relevant and feasible instrument for measuring health literacy of Canadian High School Students.	Wu *et al,* 2012	Canada	275	11-18	Students recruited from schools.	Health related passages concerned with understanding and evaluating health information. Participants read the passages and answer open-ended questions that researchers mark according to a criterion.	Understand Evaluate	Reliability of understand and evaluate constructs were high. Gender, immigration status, bilingualism and missing school were all significantly associated with poorer health literacy. Small correlation found between self- reported and performance-based health literacy.

Study	Author (s)	Country	N	Age range	Recruitment procedure	Properties	Subscales (if any present)	Main findings
Health Literacy Measure for Adolescents (HELMA): Development of Psychometric properties.	Ghanbari *et al,* 2016.	Iran	582	15-18	Adolescents recruited from four high schools.	44 item questionnaire. Respondents answer on a likert scale.	Access Reading Understanding Appraisal Use Communication Self- efficacy Numeracy	Factor loading produced more domains than initially hypothesised. The scale was highly reliable and stable when re- tested.

Study	Author (s)	Country	N	Age range	Recruitment procedure	Properties	Subscales (if any present)	Main findings
Development of the Health Literacy Assessment Scale for Adolescents (HAS-A)	Manganello *et al,* 2015.	USA	272	12-19	Adolescents recruited from one paediatrics clinic.	3 surveys. Respondents answer on a likert scale.	Communicating health information Confusion about health information Understanding health information.	Subscales can be used reasonably where self- report measures are employed.
Psychometric evaluation of the Chinese version of short- form test of functional health literacy in adolescents.	Chang. Hseih and Liu, 2012.	Taiwan	300	16-17	Students recruited from high schools in four counties.	s-TOFHLA Vocabulary test where respondents fill gaps in sentences.		s-TOFHLA has good internal consistency and reliability in adolescents for testing functional health literacy.

Study	Author (s)	Country	N	Age range	Recruitment procedure	Properties	Subscales (if any present)	Main findings
Can the Newest Vital Sign Be Used to Assess Health Literacy in Children and Adolescents?	Warsh *et al,* 2014.	USA	97	7-17	Children and young people recruited from waiting rooms in paediatric clinics.	Newest Vital Sign. 6 verbally administered questions based on a nutritional label for ice cream that the individual reads beforehand. Questions test reading comprehension and numeracy.		NVS correlates highly with the Gray Silent Reading test, showing that it measures literacy well. The NVS performs well in the adolescent population.

Study	Author (s)	Country	N	Age range	Recruitment procedure	Properties	Subscales (if any present)	Main findings
Measuring Adolescent Functional Health Literacy: A Pilot Validation of the Test of functional Health Literacy in Adults.	Chisolm and Buchananan, *2007*	USA	50	13-17	Telephone based recruitment of youth who had taken part in previous studies and recruitment through healthcare workers who approached eligible patients.	TOFHLA Vocabulary and numeracy test.	TOFHLA-R TOFHLA- N	The reading comprehension component of the TOFHLA may be valid for assessment of the adolescent age group.

Table 3.4: Table summarising the statistical analyses and results of each study.

Study	**Author (s)**	**Overall reliability (Cronbach's Alpha)**	**How was validity tested?**	**Results of validity testing**
Findings Toward a Multidimensional Measure of Adolescent Health Literacy	Massey *et al,* 2013	0.834	Construct validity tested by exploratory principal components factor analysis.	All items presented a moderate to high degree of consistency and discriminability (inter-item correlation ranged between 0.33-0.66 and item total correlations ranged between 0.39-0.74). More subcategories were found in the scale than initially hypothesised.
Developing and evaluating a relevant and	Wu *et al*, 2012	0.92	Structural validity tested by correlations between performance of	Self-reported GPA was the most important explanatory variable in health literacy, explaining

Study	**Author (s)**	**Overall reliability** **(Cronbach's Alpha)**	**How was validity tested?**	**Results of validity testing**
feasible instrument for measuring health literacy of Canadian High School Students.			individuals on measure of HL and external variables e.g., gender. Content validity measured by correlations between subscales and grade point average and self- reported academic skills.	33% of R^2, followed by age of immigrating and rate of skipping school. Moderate correlations of understand, evaluate and overall scores with GPA (r= 0.416- 475) and self-reported academic skills (r= 0.213 to 0.262) suggest that these subscales are related to but distinct from general literacy.

Study	**Author (s)**	**Overall reliability (Cronbach's Alpha)**	**How was validity tested?**	**Results of validity testing**
Health Literacy Measure for Adolescents (HELMA): Development of Psychometric properties.	Ghanbari *et al,* 2016.	0.93	Content validity and face validity assessed through qualitative measures where experts were asked for opinions and suggestions on items. Content validity was assessed quantitatively using content validity ratio (CVR) and content validity index (CVI) was calculated using panels of experts in the field of health. Face validity: impact scores were calculated for items. Construct validity measured using exploratory factor analysis.	Items scoring a CVR of ≥0.54 were kept in the scale. CVI values of ≥0.79 were also kept in the scale. Those with an impact score of > 1.5 were considered satisfactory. Factor loadings >0.4 considered appropriate. Final scale consisted of 44 items. Factor loadings for these items ranged from 0.488-0.732

Study	**Author (s)**	**Overall reliability (Cronbach's Alpha)**	**How was validity tested?**	**Results of validity testing**
Development of the Health Literacy Assessment Scale for Adolescents (HAS-A)	Manganello *et al,* 2015.	0.73	Criterion/concurrent validity tested by comparing different parts of the scale to other relevant health literacy measures.	Communication scale correlated strongly with the AURA (r = 0.69, P <0.0001) The other subscales did not correlate as well with the counterpart measures (low to modest range of correlation).
Psychometric evaluation of the Chinese version of short- form test of functional health literacy in adolescents.	Chang. Hseih and Liu, 2012.	0.85	Concurrent validity tested by correlating with items of the REALM. Construct validity tested with confirmatory factor analysis.	Correlation between s-TOFHLA and REALM: r= 0.74, P < 0.001. Confirmatory factor analysis found that the data accounted for a one factor model (not two factors as hypothesised): $x^2(573) = 2335.9$; $p < 0.001$, RMSEA = 0.06; 90% CI = 0.11, 1.15, GFI = 0.92; AGFI = 0.9; SRMR = 0.068; CFI = 0.89.

Study	**Author (s)**	**Overall reliability (Cronbach's Alpha)**	**How was validity tested?**	**Results of validity testing**
Can the Newest Vital Sign Be Used to Assess Health Literacy in Children and Adolescents?	Warsh *et al*, 2014.	0.76	Concurrent validity tested by correlating with constructs of the Gray Silent Reading Test.	Strong correlation with GSRT (ρ= 0.71, P <0.0001)
Measuring Adolescent Functional Health Literacy: A Pilot Validation of the Test of functional Health Literacy in Adults.	Chisolm and Buchananan, 2007	0.90- 0.92	Concurrent validity tested by correlating with REALM and WRAT3	Reading component of TOFHLA was moderately correlated to WRAT3 (ρ= 0.59, P <0.001) and REALM WRAT3 (ρ= 0.60, P <0.001).

3.3.3 Discussion

3.3.3.1 Methodological Considerations

Assessment of study quality, by use of the COSMIN checklist, illustrated a lack of clear reporting across the studies. Many of the studies also failed to re-test the measures which decreased overall reliability. Although the measures were often reported to have a moderate to adequate level of item reliability (Cronbach's alpha), the validity of items was often less clear as the types of validity tested in each study varied.

Several studies failed to report how missing responses were handled, leading to poor scores in the COSMIN checklist. Reporting missing data is essential in maintaining the integrity of the study and can provide useful information about the weaknesses of the study (Altman and Bland, 2007). Missing items can produce bias in the data in terms of skewness in results as populations that do respond may be more inclined to answer in a particular way (Altman and Bland, 2007). With relevance to this study, missing items may indicate that the measure was too complex, in terms of wording or concept, for the target population. By omitting a statement concerning missing data, researchers are unable to sufficiently examine the biases or potential weaknesses of the study which reduces the generalisability of the data. Furthermore, many of the studies did not carry out a re- test of the assessment. Test- retest reliability is a vital regulator of measurement error (Litwin, 1995). Without assessing test-retest reliability it is unclear whether the results obtained for the measures adequately reflect the true outcomes of the measures.

A further aspect that arose during analysis was whether some of the measures were adequately adapted to the target population. Interestingly, not one of the measures were constructed using models or frameworks of adolescent health literacy, and consequently tended to ignore contextual or personal factors that may specifically affect adolescents e.g., parental influence. This is discussed in more detail below. Studies in which a new measure was produced tended to make some provisions within the development of the scale to make the measure relevant to the target population. However, in studies where an existing measure of health literacy was adapted, there were reportedly few or no attempts to change aspects of the measure to fit the population. This can lead to issues regarding the validity and reliability of the measure (Meadows, 2003). For example, a measure of health literacy used in adults may contain wording or themes that are too complex for adolescents to grasp due to the developmental gap. Consequently, the measure is harder for adolescents to respond to in a way that is reflective of their actual health literacy level.

With a model such as health literacy, conceptual equivalence cannot be assumed between age groups as illness, types of illness, and main health concerns can change drastically between adolescence and adulthood (Meadows, 2000).

Furthermore, the generalisability of the findings must be considered in terms of relevance to the UK population. All the studies were conducted outside of the UK and therefore the population studied may be exposed to different cultural and social contexts, and thus the results may reflect a population with entirely dissimilar needs. Relatedly, there may be issues with the representativeness of data. Many of the studies were carried out in only one country, among populations recruited in one area. This may mean that the test populations were relatively homogenous and not suited, therefore, to adolescents with more diverse backgrounds or needs. In terms of gender representativeness within the sample, almost all the studies contained vastly different ratios of male to female respondents. This may have skewed the findings to reflect the results of female participants as all studies had higher proportions of female participants apart from one (study 7). Finally, some of the studies involved small samples (e.g., Study 6, Warsh et al. 2016) which inevitably impacts the statistical power and reliability of the study.

3.3.3.2 Strengths, Limitations and Summary

It is clear from the results of the studies that more research into the development and validation of adolescent health literacy measures is necessary. Validation tests on the measures often only produced low to moderate results, indicating that the measures may not accurately test health literacy. Adding to this, many of the studies only tested the concurrent validity of the measures. The general results for this type of validation were higher, indicating that most of the measures were like their comparison measure (e.g., TOFHLA, REALM, Newest Vital Sign). However, most of these measures only tested functional health literacy and thus did not capture the full dimensionality of health literacy, ignoring constructs such as verbal or communication skills shown to important in Chapter 2 (section 2.6) and section 3.2.2 of this chapter. In fact, most measures only tested functional health literacy and/or interactive health literacy (see Figure 3.7). Of the studies reviewed in this paper, the HELMA measure seems to be the most reliable and valid at present due to the strong methodological procedure used within the study (Ghanbari *et al,* 2016). The study scored highly in the COSMIN measure of quality, missing data was adequately described and handled, the measure was developed specifically for adolescents and test-retest of the measure was conducted. Construct validity (through factor analysis) was shown to be satisfactory.

3.3.3.3 Subscales and constructs measured

It is clear from analysis of the subscales that understanding basic numeric/ verbal or written information about health is an important element of health literacy in adolescents as it was a common element in many of the measures. However, the measures that only assessed this construct (e.g., TOFHLA, s-TOFHLA and Newest Vital Sign) tended to score poorly on the COSMIN checklist, perhaps indicating that the ability to understand information describes only a small part of health literacy in adolescents. In this thesis, "validity" describes how well the measures were able to assess health literacy. The studies tended to focus on construct, structural and criterion validity. These forms of validation can only suggest that the measures were like existing measures and models of health literacy that are not specific to adolescents. The studies did not measure predictive validity, meaning that it is unclear whether they are able to predict actual health behaviours.

Bearing this in mind, the HELMA measure is the most proficient in capturing health literacy in adolescents currently (Ghanbari et al. 2016). The subscales of the HELMA measure included: accessing information, reading comprehension, ability to understand health information, ability to appraise information, use of health information, communicating health information, self-efficacy, and ability to understand numeric health information (Ghanbari et al. 2016). The ability to appraise/ evaluate information, accessing information, ability to understand information, self- efficacy and communicating were assessed in more than one measure (see Figure 3.3). This may indicate that research in health literacy supports the notion that these constructs form parts of a model of health literacy in adolescents. The HELMA measure also added "Use" as a subscale, referring to how adolescents can use the information that they have understood and appraised in order to make a health decision (Ghanbari et al. 2016).

With these findings in mind, it is important to critically explore the frameworks used to produce these HL measures to assess whether the measured constructs can be incorporated into a model of adolescent AHL and SHL. The HELMA measure largely generated items though qualitative research with adolescents (n = 67) that followed a saturation point method (Ghanbari et al. 2016). The data were explored using content analysis which produced the items and sub-scales (Ghanbari et al. 2016). The paper utilises the definition of Health Literacy created by the European Consortium on Health Literacy Score "which suggested four key factors for health literacy: the ability to access, understand, appraise, and apply health information…" which was implemented in the content analysis (Ghanbari et al., para.2, 2016). This definition (and resulting HL model) was developed thorough a comprehensive systematic review that applied content analysis to analyse 17 peer

reviewed definitions and 12 conceptual frameworks of health literacy, a similar method to that employed in chapter 1 and 2 of this thesis. However, the search was not limited to adolescent models of health literacy.

The measures created by Massey et al. (2013) and Wu et al. (2010) involved a similar method of collecting qualitative data and using definitions of health literacy in concept analysis in order to create the measures. Manganello et al. (2015) used the definition of health literacy by Nutbeam (1998) (mentioned previously in chapter 2) to guide scale development. Manganello et al (2015) also employed existing literature in health literacy measurement to generate items which were later piloted with health professionals and adolescents to create the measure. The other studies utilised existing adult measures of health literacy to be tested on adolescent populations (Chang et al. 2012; Chisolm and Buchanan, 2007; Warsh et al. 2014). The review of models and definitions of health literacy in Chapter one provides support for the fact that these constructs (i.e., ability to understand, use and evaluate information) are robust and evidence- based ways in which health literacy can be conceptualised. However, the lack of research in the field of adolescent health literacy is reflected in the weaknesses of the measures. Although the measures use adolescent samples for validation, the initial item generation and/or categorisation of sub-scales are based on research that focuses on adult health literacy. As a result, most scales are flawed and tend to merely test general constructs of health literacy instead of tapping into the specific skills, knowledge or behaviours that differentiate adolescent health literacy from health literacy in adults. Thus, it is important to acknowledge that constructs such as: “the ability to understand information” are important broad-spectrum skills in health literacy that are not specific to adolescents.

Furthermore, exploration of the items used to assess these constructs show that the questions tended to focus on the participants’ personal skills. Chapter 2 of this thesis highlighted the importance of context in the adolescent’s health. In Chapter 1, health literacy was described as: “an individual’s capability to obtain, understand, process, and apply health information in order to make informed, health related decisions for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy”. The issue with many of the measures, therefore, is that the context is largely ignored. An example of this is, the item: “I can read brochures on prescribed medicine” found in the HELMA measure (Ghanbari et al. 2016); in this case: how the information on brochures is presented, whether it is age appropriate or how much useful information they provide. This also depicts the distinctly clinical focus in the HELMA measure, calling into question whether it ignores most “healthy” adolescents who come into little contact with healthcare services. The HL measure

by Massey et al. (2013) contains subscales (e.g., Patient- provider encounter) and items (e.g. "Did doctors or other healthcare providers listen to you?") that partially account for this. Context may largely be ignored in these measures as none of the measures are specifically based on models or frameworks of adolescent health literacy.

As a final point, the measures tend to neglect the finding that purely testing knowledge will not accurately predict an adolescents' actual health behaviour (Townsend et al. 2015). Particularly in view of health literacy as a competence. Surprisingly few of the measures allowed for participants to demonstrate skills and abilities but instead relied on questionnaire methods. The measures that did focus on the ability to understand and evaluate information tended to focus more on general literacy and ignore context. None of the measures were tested for predictive validity as they were in early phases of development. The measures were not specifically formed using theoretical frameworks that attempt to predict or measure health behaviour (e.g., Theory of Planned Behaviour, Information-Motivation- Behavioural skills model), despite this being the demonstration of health literacy. Nevertheless, some of the measures do incorporate measures of "self- efficacy". For example, the HELMA measure contains four items relating to self- efficacy, including: "I am able to find more information on health" (Ghanbari et al. 2016). There is a wealth of evidence linking self-efficacy to future health behaviour and health behaviour change (Holloway and Watson, 2002). However, because these measures were not developed based on behavioural change models, items related to self- efficacy are underdeveloped, and may not relate to the behavioural change construct as few of the studies define self-efficacy.

3.3.3.4 Future Research

In summary, the HELMA measure has been found to be the most reliable and valid of the health literacy measures aimed at adolescents. In terms of the adaptability of this measure, it is difficult to ascertain at this point how this measure could be adapted for AHL and SHL as the items tend to ignore context and behaviour in adolescent HL. Moreover, due to the lack of research into adolescent health literacy: the constructs assessed within the measures (e.g., ability to evaluate information) only provide the broad, basic skills that all individuals require in order to be health literate. A summary of the points taken forward from the current chapter are provided below.

3.4 Summary of findings from Literature Review and Systematic Review:

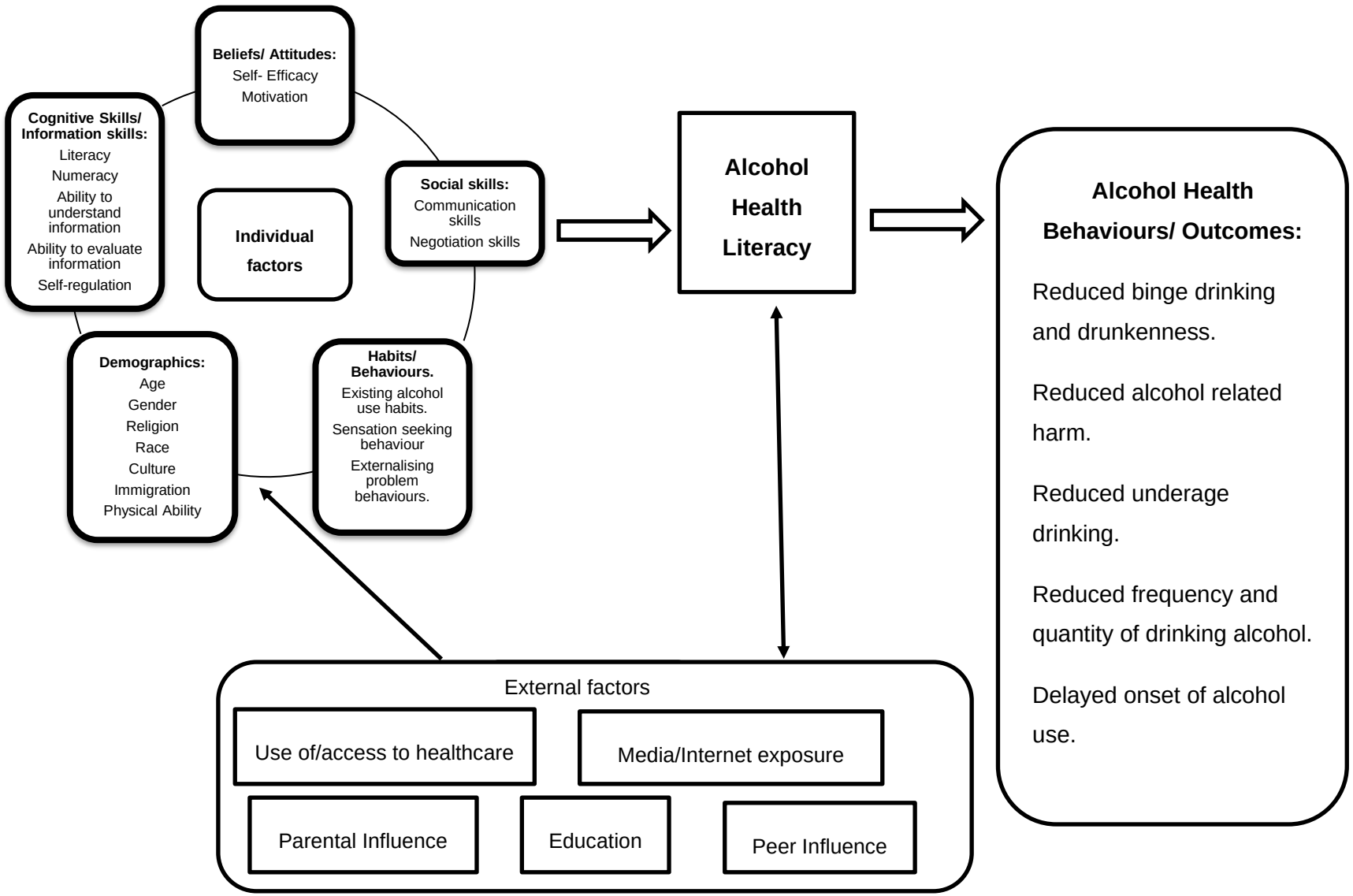
Current measures of adolescent health literacy cannot be reliably used as they are rarely based on adolescent health literacy models and therefore ignore context. Factors present in adolescent health literacy measures that researchers believe are important include:

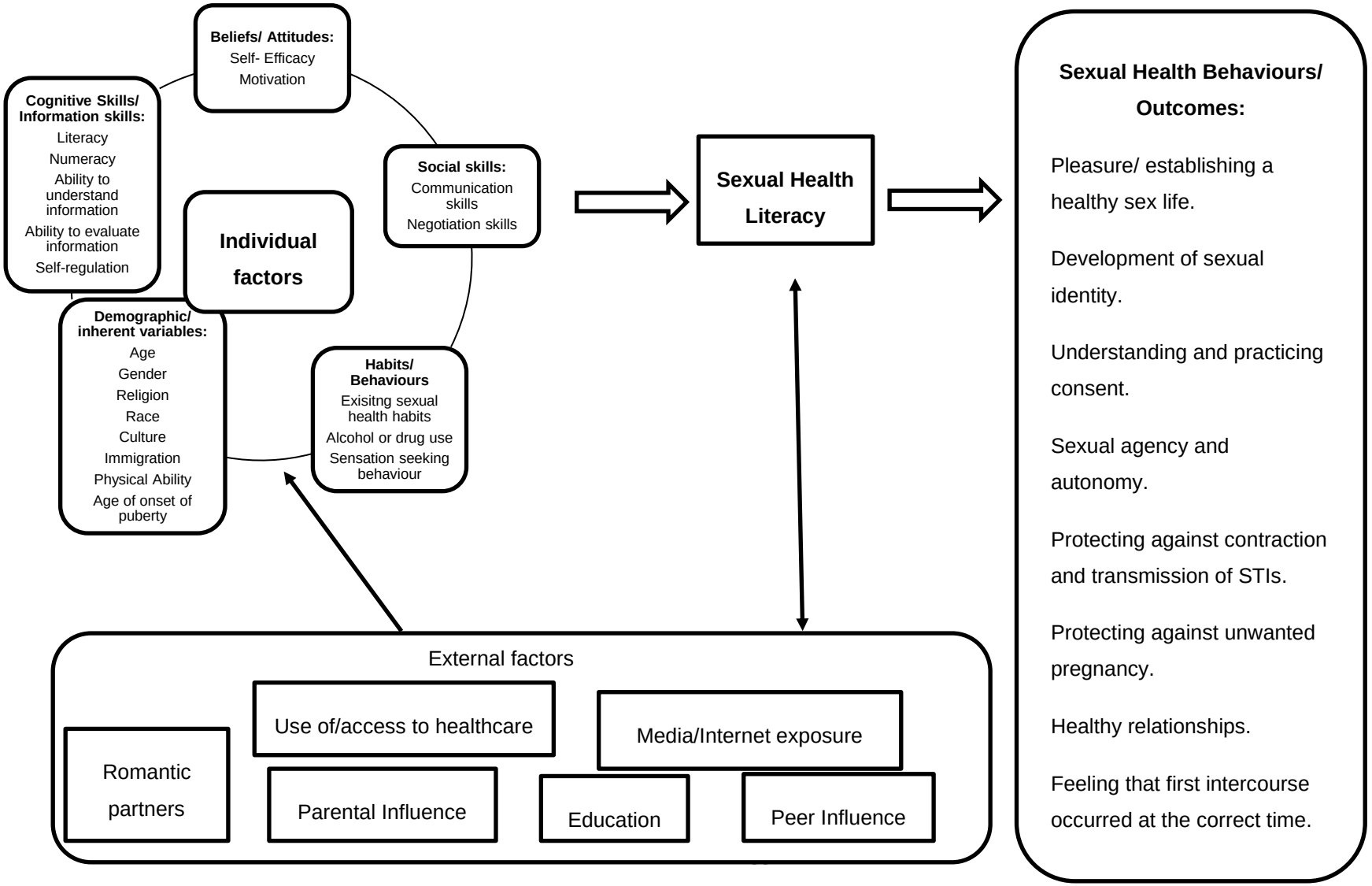
- Literacy
- Numeracy
- Ability to understand information
- Ability to evaluate information
- Ability to access information
- Self- efficacy
- Communication skills

These factors will be incorporated into the models of adolescent AHL and SHL (see below, Figures 3.5 and 3.5).

Figure 3.8: Initial Model of AHL (p.82)

Figure 3.9: Initial model of SHL (p.83)


Beliefs/ Attitudes:
Self- Efficacy
Motivation
Cognitive Skills/ Information skills:
Literacy
Numeracy
Ability to understand information
Ability to evaluate information
Self-regulation
Individual factors
Social skills:
Communication skills
Negotiation skills
Demographics:
Age
Gender
Religion
Race
Culture
Immigration
Physical Ability
Habits/ Behaviours.
Existing alcohol use habits.
Sensation seeking behaviour
Externalising problem behaviours.
Alcohol Health Literacy
Alcohol Health Behaviours/ Outcomes:
Reduced binge drinking and drunkenness.
Reduced alcohol related harm.
Reduced underage drinking.
Reduced frequency and quantity of drinking alcohol.
Delayed onset of alcohol use.
External factors
Use of/access to healthcare
Media/Internet exposure
Parental Influence
Education
Peer Influence


Beliefs/ Attitudes:
Self- Efficacy
Motivation
Cognitive Skills/ Information skills:
Literacy
Numeracy
Ability to understand information
Ability to evaluate information
Self-regulation
Social skills:
Communication skills
Negotiation skills
Individual factors
Demographic/ inherent variables:
Age
Gender
Religion
Race
Culture
Immigration
Physical Ability
Age of onset of puberty
Habits/ Behaviours
Exisitng sexual health habits
Alcohol or drug use
Sensation seeking behaviour
Sexual Health Literacy
Sexual Health Behaviours/ Outcomes:
Pleasure/ establishing a healthy sex life.
Development of sexual identity.
Understanding and practicing consent.
Sexual agency and autonomy.
Protecting against contraction and transmission of STIs.
Protecting against unwanted pregnancy.
Healthy relationships.
Feeling that first intercourse occurred at the correct time.
External factors
Use of/access to healthcare
Media/Internet exposure
Romantic partners
Parental Influence
Education
Peer Influence

Considering the findings from Chapter 2 and 3, the early development of adolescent SHL and AHL models are drafted above. The overall structure of the model (personal attributes and external influences leading to health literacy which results in health outcomes or behaviours) is based on the model by Manganello (2008) and contains many of the domains (e.g., peer and parental influences, demographics) that are represented in that model. The inner, circular structure within the models represent the personal attributes of the adolescent that impact their health literacy. This is divided into five domains:

1. Beliefs/ Attitudes
2. Demographic/ inherent variables
3. Cognitive/ information skills
4. Social skills.
5. Habits/ behaviours.

The outer circle represents the external factors that impact the health literacy of adolescents. The definitions of alcohol and sexual health literacy were derived from the definition presented in Chapter 1. A summary of evidence of the specific features of the models is presented in Table 3.5. With the basic structure of the model decided upon, it is necessary to test whether the models require any adjustment. It is also necessary to contemplate how such models can be used to measure alcohol and sexual health by the samples that have most need for such a tool. The following chapter (Chapter 4) will explore the thoughts of local experts (PSHE department leads in Schools) on the model and how it can be used. Using the models these local experts were also asked about whether they believed that current alcohol and sexual health education considers any or all the factors in the model.

Table 3.5: Summary of features of the models gained from Chapter 2 and 3.

	Chapter 2 (Literature review of factors impacting Adolescent AHL and SHL).	**Chapter 3 (Systematic Review)**
Individual factors	**Demographic/ inherent variables**	**Cognitive/ Information skills**
	Age	Literacy
	Gender	Numeracy
	Religion	Access to information
	Race	Understanding information
	Culture	Ability to evaluate information
	Immigration	**Beliefs/Attitudes**
	Physical ability	Self- efficacy
	Onset of puberty (sexual health only)	**Social Skills**
	Cognitive/ Information skills	Communication
	Literacy	
	Numeracy	
	Self- regulation	
	Beliefs/Attitudes	
	Self- efficacy	

	Chapter 2 (Literature review of factors impacting Adolescent AHL and SHL).	Chapter 3 (Systematic Review)
	Motivation	
	Social Skills	
	Communication skills	
	Negotiation skills	
	Habits/Behaviours	
	Existing alcohol/ sexual health habits	
	Sensation seeking behaviour	
	Externalising behaviours (alcohol only)	
External Factors	Parental Influence	
	Peer Influence	
	Use of/ access to healthcare	
	Media/ Internet use or exposure	
	Education	
	Romantic partners (sexual health only)	

	Chapter 2 (Literature review of factors impacting Adolescent AHL and SHL).	Chapter 3 (Systematic Review)
Competencies	**Alcohol:** Reduced binge drinking and drunkenness. Reduced alcohol related harm. Reduced underage drinking. Reduced frequency and quantity of drinking alcohol. Delayed onset of alcohol use **Sexual Health:** Pleasure/ healthy sex life Healthy relationships Use of contraceptives. Understanding and practicing consent. Sexual agency and autonomy. Protecting against contraction and transmission STIs. Protecting against unwanted pregnancy. Emotional resilience Feeling that intercourse occurred at the correct time	

Chapter 2 (Literature review of factors impacting Adolescent AHL and SHL).	**Chapter 3 (Systematic Review)**

Chapter 4 Exploratory Qualitative Study: Alcohol and Sexual Health Education in Dorset and Hampshire Schools.

4.1 Introduction

4.1.1 Background

The models of alcohol and sexual health literacy depicted in chapter three (p82 and p83) illustrate that it is the dynamic interactions between a range of factors that create the constructs of alcohol and sexual health literacy in adolescents. If health literacy is vital for good health, then it is imperative to question how, as a society, we are equipped to develop and/or impart these skills (Manganello, 2008). As the focus of this thesis is specifically on alcohol and sexual health in young people, this chapter will explore how alcohol health literacy and sexual health literacy is promoted in adolescents, and the barriers and facilitators associated with them addressing research questions 2,4 and 5 (see section 4.2).

PSHE/RSE is employed to communicate AHL and SHL to adolescents in the UK (Haydon, 2005). However, young people tend to be critical about the quality of PSHE/RSE (Youth Parliament, 2018). A large-scale review of studies of 12-15-year-old pupils in Southwest England found that students mainly relied on school as a source for information about sex (30% of 12-13-year-olds and 24% of 14-15-year-olds) (Schools Health Education Unit, 2011). In 2017, the UK Youth Parliament called for a 'Curriculum for Life', in which over 134, 675 11-18-year-olds voted for PSHE to be a priority in school education, calling for quality, tailored PSHE education across all schools at all ages delivered by well trained teachers (Youth Parliament, 2018). The evidence for having school based /RSE shows that good quality RSE can lead to delay in the initiation of first sex, first sex being consensual, using contraception at first sex and greater sexual competence in young people (Sex Education Forum, 2015). The Natsal-3 survey of young people and adults in the UK (n= 3408) found that school based sexual health education was cited as the main source of sexual health education in male and female respondents (Macdowall, 2015).

With regards to alcohol education, results from studies reporting on the effectiveness of school-based alcohol interventions show more mixed results. A global meta-analysis of 28 studies (n= 39,289)

by Strøm et al (2014) found a small positive effect for school-based interventions in adolescent alcohol use. All interventions provided alcohol education or life skills programs. Competencies focused on alcohol consumption after the intervention. Additionally, a systematic review of 52 reviews by Martineau et al (2013) found mixed evidence for school-based alcohol education. Interventions ranged from life skills programs to general health education and peer support. The competencies also tended to focus on reducing alcohol consumption or preventing alcohol-related harm and provided little information on other factors related to AHL such as autonomy of choice. These results may be reflective of the differences in content and delivery of alcohol education across schools (Mentor-ADEPIS, 2017).

4.1.2 Guidance for Sexual Health Education

4.1.2.1 Content

In March 2017, the UK Government made an amendment to the Children and Social Work Bill that makes RSE statutory in all secondary schools (Department for Education 2017). RSE is expected to be delivered through a series of compulsory lessons (e.g., Science and Citizenship) as well as through focused RSE lessons and/or drop down-days at the discretion of the school (Department for Education, 2017). This is expected to come into effect from September 2020 (Department for Education, 2017). Parents will retain their right to withdraw students from RSE (Department for Education, 2017). Statutory guidance for the provision of RSE in schools is provided in Chapter 1 of this thesis (section 1.9). The emphasis in content on relationships, and sex within relationships seems to be the reason that the Department for Education has re-branded SRE to RSE (DfE, 2017). 'Age-appropriateness' is also frequently highlighted as a feature that will be important in the new curriculum within the policy statement (Department for Education, 2017).

Supplementary materials are available from the PSHE Association, which is funded by the Government to provide tools and resources for PSHE education. The PSHE Association provides a more detailed programme for RSE in schools. A table of the key areas of focus as suggested by research by the PSHE Association is shown in Table 4.1.

Table 4.1: Areas of key focus in RSE according to Key Stage Level (taken from PSHE Association, 2017).

Key Stage:	Focus:
1 and 2	Maintaining physical and mental health Managing risks to physical and emotional health Making informed decisions about health Managing puberty and transitions Developing/maintaining various types of relationships in a range of social contexts Recognising and managing emotions within a relationship Recognising and responding to risky relationships, bullying and abuse Respecting equality and diversity within relationships.

Key Stage:	Focus:
3 and 4	Build upon themes explored in Key Stage 1 and 2 Developing parenting skills Consent in a variety of contexts Managing loss (separation, bereavement, divorce) Identifying and accessing advice and support
5	Build upon themes explored in Key Stage 1, 2, 3 and 4.

The PSHE Association also outlines learning objectives for students, from which sessions can be tailored and evaluated (PSHE Association, 2017). Although this provides a more detailed guideline for curriculum planning in RSE than the Government guidance, it assumes to some degree that teachers have the training, expertise, and time to be able to use these guidelines to form a comprehensive curriculum for RSE education.

4.1.3 Guidance for Alcohol Education

4.1.3.1 Content (from DfE)

Alcohol education in school will take place within the wider framework of Health Education lessons or through curriculum guided science lessons. Currently, the Government guidelines on the content of alcohol education is sparse. The draft guidance mentions that students should be taught (Department for Education, 2019).:

- about alcohol in the context of sexual health
- the harms associated with alcohol use.

Although alcohol education receives less attention compared to sexual health education, the Government has funded agencies such as Mentor-ADEPIS and the Alcohol Education Trust (AET) to provide resources for alcohol and drug education within schools. The AET manual and guidance explore themes such as: units and guidelines, physical and social effects of alcohol, alcohol and the law, and risk taking (AET, p. 2016). The resource outlines how to teach and assess these topics depending on age group but tends to be fact based (AET, 2016). Mentor-ADEPIS (2017) suggested that an appropriate curriculum for drug and alcohol education is tailored to its audience and contextualised with personal, social and health issues. It is unclear how popular such resources are within the UK and the little guidance that is available for the content of alcohol education focuses more on knowledge than skills. The resources also cover a smaller range of topics than in RSE. This does not seem to be enough to foster the competencies associated with AHL in the AHL model (Figure 3.8 and 3.9).

4.1.3.2 Delivery of RSE and Health Education in Secondary Schools

The draft guidance on teaching RSE by the Department for Education (2019) mentions the following in reference to how RSE and Health Education should be taught:

- Where possible, RSE and Health Education should be linked with other, complementary subjects within the national curriculum e.g., citizenship, science, physical education.
- RSE should be taught within the context of a whole school approach to health, supporting students to be prepared for life during and beyond school.
- Responsibility for RSE and Health Education should be given to a senior teacher with both time and resources to act as a lead in the subject.
- Schools can act flexibly to ensure that RSE/ Health Education caters for specific student communities (e.g., disability, sexuality, etc) and to ensure that lessons and resources are age appropriate.

The guidance is vague, placing the responsibility for delivery and design on schools. It does not make any references to teacher competence to deliver appropriate lessons in RSE and Health Education. It is mentioned that teachers should be supported with training, but this is at the discretion of schools. There is also no indication of how often these lessons should be delivered and of how quality should be monitored. These factors are of concern because of findings from previous research.

In a survey of 155 secondary school teachers in the UK, Westwood and Mullan (2007) found that teachers' general knowledge of sexual health was good. However, their knowledge of emergency contraception and sexually transmitted infections (STIs) was poor, meaning they lacked the specialist knowledge to teach RSE (Westwood and Mullan, 2007). Although this information is useful, knowledge of contraception and STIs are knowledge-based competencies that form only one aspect of SHL. It is possible that these teachers possessed the ability to impart skills that would outweigh these failings in knowledge. A pertinent message in this study is, however, that in many cases teachers reported that they would prefer not to teach sexual health education (Westwood and Mullan, 2007). This calls to question whether the education system should be the main system through which AHL and SHL is promoted.

Similarly, a mixed methods study conducted in the UK by Formby and Wolstenholme (2012) found that issues such as value placed on RSE, staffing constraints, expertise, and beliefs around credibility for staff (when teaching sensitive subjects), affected perceived impact of RSE lessons. In the quantitative element of the study (n =1540) only 6-7% of UK secondary school pupils reported receiving weekly RSE lessons with the majority (63-65%) reporting that they received RSE once a year or less. 43% of secondary schools (n= 617) reported using school nurses and 51% reported using other external providers to deliver sessions in RSE (Formby and Wolstenholme, 2012). 10-

11% of pupils reported receiving diet, nutrition, and healthy lifestyles education weekly, with the majority (54-59%) reporting they received this once per year or less (Formby and Wolstenholme, 2012). This is consistent with findings in a study of teachers (n= 156 teachers) conducted by Mentor-ADEPIS (2017) that pupils received 1-2 hours of drug and alcohol education per year or less.

In 2008 The Sex Education Forum conducted a large-scale survey in the UK) of young people aged 16-25 (n= 1709) to assess their experience of sexual health education in school. A third of respondents reported that their experience of RSE was bad or very bad (Sex Education Forum, 2008). Furthermore, in a national survey of 11-18-year-olds (n = 21,602), conducted by the UK Youth Parliament (2007) 40% of respondents reported that their RSE education was poor or very poor, with a further 33% reporting that their experience of RSE was average. There were also issues surrounding suitability of RSE to the target audience. Over half of respondents in the survey conducted by the Sex Education Forum (2008) who identified as transgender, lesbian, or gay reported that RSE was 'bad' or 'very bad'. These respondents also tended to report that they considered their RSE teachers were inadequately trained (Sex Education Forum, 2008).

A synthesis of international qualitative studies (n = 48 studies) on young people's views of school based RSE found that RSE can be "negative, gendered and heterosexist" (Pound, Langford and Campbell, p.1, 2016). The studies reviewed were conducted in the UK, Ireland, the USA, Australia, New Zealand, Canada, Japan, Iran, Brazil, and Sweden. RSE can often be unsuitable as schools refuse to acknowledge that students may be sexually active (Pound, Langford, Campbell, 2016). Synthesis of the studies found that mixed classes can lead to embarrassment and disruption with young men expected to be sexually competent and young women targeted for harassment if they participate (Pound, Langford, and Campbell, 2016). Finally, the study reported that students tended to dislike their own teachers delivering RSE "due to blurred boundaries, lack of anonymity, embarrassment and poor training" (Pound, Langford and Campbell, p.1, 2016). These overall findings were consistent with those reported in the UK studies.

In contrast to the wealth of information that exists with regards to RSE, far fewer studies exist about alcohol education. A survey conducted by Mentor-ADEPIS (2017) of teachers from secondary schools (n = 156 teachers) provides some information about drug and alcohol education in schools in the UK. Findings suggested that: firstly, there was a lack of curriculum time assigned to drug and alcohol education and secondly, PSHE was often delivered by non-specialist teachers (those not specifically trained to deliver PSHE) which results in varying levels of capability in teaching this topic (Mentor-ADEPIS, 2017). 56% of teachers wanted better guidance on good practice in this topic (Mentor- ADEPIS, 2017). Furthermore, secondary school teachers reported

that available resources were outdated and wanted resources that contextualised alcohol and drug use in different social scenarios e.g., in sex and relationships, coping with stress, peer pressure, etc. (Mentor-ADEPIS, 2017).

Considering the evidence reviewed so far, a few key themes can be seen within the literature. The content and delivery of PSHE/ RSE tends to be inconsistent across schools, perhaps due to the limits of statutory guidance from the Government. Sexual health education is far more researched and given greater emphasis than alcohol education, which often only accounts for one small part of a wider curriculum subject (e.g., Science or Citizenship).

Nevertheless, these findings should be considered in light of their limitations. Many of the surveys and studies reviewed in this section rely on self-reported measures. This may have invited an element of reporting bias from the participants. Few of the studies have considered the reasons why the quality of alcohol and sexual health education may be poor. It is also unclear how the new guidelines for RSE and Health Education will make a difference to previous findings. These issues will be considered in the following sections of this thesis.

4.2 Research Questions and Aims

As shown above, there is a wealth of research that describes the quality and quantity of sexual health education in schools. Research in alcohol education is more limited. However, it is difficult to ascertain how these programmes affect the AHL and SHL of students. Many of the studies in this field focus on how school-based interventions improve knowledge or behavioural outcomes without assessing skills or competencies. As explained in Chapter 1, the purpose of the thesis is to provide valid, triangulated evidence for models of AHL and SHL in adolescence. The focus of the thesis will now shift to collecting qualitative evidence to strengthen the models and explore the importance of these within the appropriate social context (i.e., schools). Accordingly, the research questions addressed in this portion of the thesis are:

- **Research question 4:** What competencies do local PSHE teachers believe are needed in order for an individual to be health literate in alcohol and sexual health?
- **Research question 5:** What are the barriers and facilitators to delivering these competencies, according to expert secondary teachers in the UK?

4.3 Methods

4.3.1 Methodology

As proposed in Chapter 1, section 1.3, a mixed method, pragmatic design is utilised to answer the research questions. Central to the pragmatic paradigm is the view that *"all research should emanate from the desire to produce useful and actionable knowledge"* (Kelly and Cordeiro, para 12, 2020). This places and emphasis in engaging with multiple experiences of the same phenomenon. As discussed previously in the thesis (section 1.3), pragmatic inquiry does not place importance on or draw a distinction between knowledge arising from scientific research and that constructed from observation, both can be utilised as instruments in inquiry for different purposes. Pragmatism positions educational practice as the sole source of problems to be investigated within educational research (Biesta and Burbules, 2004). The educator is seen as the central figure in educational practice and thus the only purpose of inquiry in education is to improve the actions of the educator, the aim being ultimately to provide educators with a wider range of possible actions when dealing with specific problems (Biesta and Burbules, 2004). Dewey (1938) emphasised the role of the educator as investigator within educational research. Educators are to be allowed to reflect on their own practices to reach practical solutions to the problem being investigated (as cited in Biesta and Burbules, 2004). Consequently, educators (specifically secondary school teachers), their reflections and their contexts are the focus of this study. This study will investigate the context that impacts the actions of teachers in developing AHL and SHL in students.

A sequential approach to data collection was chosen at the outset with quantitative data being reviewed and collected in chapters 2-3 to collate and critically examine the robustness of existing data to form the basic framework for models of AHL and SHL. Consequently, at this point it was critical that the models of AHL and SHL were explored within the context and experiences of educators to understand the utility of such models in formal education. The aim within the thesis was to introduce new theoretical models (models of AHL and SHL) using conceptual abstraction (Thornberg, 2012). The governing idea here is that of 'Inference to the Best Explanation' put forward by Gilbert Harman (as referred to in Rambaree, 2017) in which the hypothesis or theory is chosen that best explains the available data. Abduction is used to reach conclusions using analogical reasoning between existing knowledge and the discovery that requires explanation (Rambaree, 2017). In chapters 1-3 existing knowledge was collated to form the basis of models in AHL and SHL. In the following chapters (4 and 5) the practicality of utilising these models will be interrogated to explore the issues of implementing effective alcohol and sexual health education in schools. The

focus is not to fit the findings from this study into the models of AHL and SHL but to challenge some of the assumptions within the model such as the delivery of alcohol and sexual health competencies in education.

4.3.2 Study Design

The group of interest in this study are PSHE lead teachers. The aim of this study is to explore the views of PSHE teachers on teaching RSE/PSHE in schools today, with a view to contextualise whether competence-based alcohol and sexual health education is achievable in current circumstances. This study can be described as an exploratory qualitative study. Exploratory research aims to provide insights into a subject rather than provide conclusive answers (Jupp, 2006).

4.3.3 Sample

The study utilised a sample of PSHE teachers (PSHE leads) from schools in Dorset and Hampshire to address the three research questions above. This sample was chosen with the purpose of generating robust data from teachers with considerable experience of delivering alcohol and sexual health competencies to adolescents, and a good understanding of the barriers and facilitators of delivering these competencies. The sample did not involve adolescents, as there is already a large body of existing literature exploring the views of adolescents in relation to PSHE/RSE (e.g., Selwyn and Powell, 2007). These existing sources will be reviewed in relation to the data from this study to validate and compare findings.

The sampling method for this study was purposive, meaning that the sample was chosen according to predefined characteristics (Steinberg, 2004). PSHE leads specifically from schools with a “Good” or “Outstanding” Ofsted rating were recruited for this study. Ofsted assesses the personal development, behaviour and welfare of students as well as quality of teaching and assessment in schools as part of their rating (Ofsted, 2015). This includes “knowledge of how to keep themselves [students] healthy, both emotionally and physically” (Ofsted, 2015, p.14). In view of this, PSHE leads from “Good” or “Outstanding” schools should have more collective experience than those from other schools in delivering good quality measures that may relate to the competencies of AHL and SHL. This does not by any account discount the positive efforts of PSHE leads from other schools or infer that PSHE leads from “Good” or “Outstanding” schools carry out better work than others. This sample was chosen with the inference that the teachers from these schools may receive more support in training and delivery of PSHE sessions and other lessons, thereby improving the rating

of these schools. Thus, any issues highlighted by PSHE leads in these schools may be exacerbated in schools that may have less access to resources.

Opportunistic sampling was used to recruit teachers in Dorset and Hampshire. 79%-80% of students in these areas attend "Good" or "Outstanding" schools (The Independent, 2012). Thus, these areas provided many potential schools that could be approached for the study. Head teachers from these schools were approached via letter or email. Most of the schools approached were mixed-gender, state secondary schools. Two of the school approached were single gender (one boys-only and one girls-only) state secondary schools. All the teachers in this study chose to take part in the study themselves, without coercion. The contact details of schools were obtained using a database of schools that is held by the University of Southampton and via recommendation by professionals in PSHE, alcohol and sexual health from the University of Southampton.

4.3.4 Data Collection Method

A semi-structured interview method was chosen for data collection as it can provide reliable and descriptive qualitative data while achieving the aims of pragmatic research to allow educators to reflect on their practice (Cohen, Manion and Morrison, 2011). This method was chosen over questionnaires as it was necessary to gain a greater detail and depth in answers. A focus group method was not practicable due to the time constraints of the sample and because it was felt that this may lead to less honesty in answering. Although the interview is pre- prepared and structured to some extent (see Appendix J), it also provided the flexibility to explore interesting themes that arose from the conversation (Creswell and Clark, 2011).

Interview schedules were designed to address the three research questions shown previously (see section 4.2). Questions focused on three broad themes:

I. barriers and facilitators to teaching alcohol and sexual health (research question 5)
II. evaluation of AHL/SHL (research question 4) and
III. evaluation of the AHL/SHL models (research question 1).

In addition to the questions, the interview involved participants being shown the draft AHL and SHL models (see Chapter 3, figures 3.8 and 3.9). The initial interview schedule (Appendix J) was refined through discussion with my research supervisors and then piloted with two teachers. Changes in the interview schedule resulted from feedback received in the piloting phase and the notes from this were provided in the Appendix J. Participants from the pilot interviews indicated that it would be useful for future participants to receive the models prior to the interview for familiarisation. As

a result, participants in the main study were sent the models of AHL/SHL via email and asked to familiarise themselves with the models prior to the interview. Paper printouts of the models were also taken to the interview.

After the pilot phase, a sample of teachers was interviewed until data saturation was achieved (n = 10) (Creswell and Clark, 2011). In the case of this study, as the data coding process was inductive, data saturation was the point in which no new codes emerged from the interview transcripts (Saunders *et al*., 2017). Data saturation is a widely accepted principle within qualitative research and indicates a point in which further data collection is deemed unnecessary based on the data collected to that point (Saunders *et al*., 2017). All interviews were audio-recorded and where necessary, I made supplementary notes.

4.3.5 Ethics and Anticipated Problems

Ethical approval for the research was gained from the University Ethics Committee. A covering letter was attached to the consent forms describing the nature of the research in detail. The information sheet provided information about the study, how the interview data would be used and outlined, informed interviewees on their right to withdraw from the study and assured the anonymity of the results. If, after reading the information sheet, the respondents agreed to be interviewed; their consent was obtained by asking them to sign the consent sheet.

Due to the sensitive nature of the topics discussed, some participants may have experienced embarrassment in providing information in response to some of the questions asked by the researcher. Participants were told at regular intervals during the study that they could withdraw their information up until the point of data transcription and given information on how they may do so. Personal information and data were anonymised in published format and were not shared with the schools that nominated teachers in this study. Any identifying information was also removed from the transcripts. Participants did opt-in to this study and therefore were aware that a discussion about the teaching of sexual health and alcohol use in adolescents would take place.

Further, with all qualitative analysis relies on the correct interpretation of participant experience. This relies on honest and open interactions between the researcher and participant to minimise the possibility of intrusion into the participants' autonomy. To minimise intrusion and clarify meanings with participants, the nature of the study and treatment of findings was explained clearly to the participants at the outset during initial recruitment and again before the data

collection. When meaning was unclear, the researcher interrogated the meaning further through questions during the interview and during analysis.

Aside from ethical issues, there were some general issues that needed to be considered during the research process. As mentioned in previously, RSE is to become compulsory in all schools. Although this may have provided rich data for the sexual health literacy part of the study, it may mean that schools and teachers focus less on other parts of PSHE education such as alcohol use. This could have impacted the focus of the interview and also the data collected with regards to alcohol health literacy.

It was difficult to recruit teachers to the study due to teachers' time constraints. To overcome this, the researcher provided some incentives, such as refreshments to enable teachers to take part in the interview and worked flexibly around the availability of the teacher. No other incentives were provided. The interviews also took place in the teachers' schools to minimise their travel. Interviews were arranged in otherwise empty and private rooms to minimise interruption and took between 30-45mins. As with any qualitative study, researcher bias must be considered when analysing the data. This will be discussed in greater detail in the following section.

4.3.6 Reflexivity

It is important within qualitative research to consider the bias that I, as a researcher, bring to the collection and analysis of data. As a researcher, I associate most with a pragmatic philosophy in research and as a result, these beliefs and associated feelings have determined the methods used in this thesis (Morgan, 2014). Further, as a researcher as opposed to an educator, I may have had a tendency throughout to place more weight on the findings within research rather than on the lived experience of educators. I have, where possible, explicitly supported my choices of methods.

Further to this, my personal attitudes towards the topics of adolescent AHL and SHL may have affected the way in which I collected and analysed data. For example, I strongly believe, due to my experience as a researcher and from my experiences during adolescence, that the constructs of adolescent AHL and SHL are dynamic and multi-faceted. I also believe that PSHE/RSE provision requires improvement to become more age-appropriate and relevant to students. These factors affected the way in which I have designed the interview schedule and questioned the sample population. The analysis may also be affected by such biases as I may interpret some themes to be more important than others. To overcome some of this bias, the meaning of unclear responses was clarified with the participants during and after the interview. The interview schedule and parts of

the analysis was reviewed by my research supervisors to check that the questioning and analysis was relevant to the actual context rather than my personal beliefs.

4.3.7 Use of Supplementary Data

Where possible, the school curriculum and scheme of work that the participants work from was collected to compare with government guidance and for further discussion.

4.3.8 Approaches to Data Analysis

The interviews and field notes were transcribed by the researcher. Thematic analysis was employed to analyse the qualitative data. Thematic analysis allowed for greater flexibility in analysis as it is independent of theory or hypotheses, appropriate for the exploratory style of this study (Braun and Clarke, 2008). Themes and codes were generated from the data as the data was analysed as the purpose was to explore and challenge the assumptions underlying the models of AHL and SHL. Braun and Clarke's (2008) six-phase method were used as a framework to code the data. The six-phase method will now be explored in detail with regards to this study.

Phase 1: Familiarising yourself with the data

As the sole researcher in this project, I was able to initially become familiar with the data in the data collection process. After data collection, the audio-recorded interviews were listened to repeatedly as necessary and initial ideas of themes and codes were noted. These notes can be found in the appendices F and G, attached to the relevant transcripts.

Phase 2: Transcription of verbal data

At this stage, the data were transcribed verbatim by the researcher. Non-verbal acts (e.g., coughing) were not included. To check that meaning had been maintained after punctuation was added, the transcripts were sent to the corresponding participant via email. All participants agreed that their meaning was captured accurately.

Phase 3: Generating initial codes

After transcription, initial codes were produced by coding for every feature that seemed to arise from each data set. This initial list is provided in Appendix L. This process was repeated to ensure that all significant data was coded. An excerpt of an interview with coding is provided below (coding in superscript):

Participant E:

"I think the facilitators are that most teachers do want to do a good job when it comes to PSHE [Motivation] and the students at the end of the day want to learn about alcohol and sexual health and that's important. [Willingness] The barrier I guess is that fear that we're coming in too late to teach them things they already know or have an idea about. [Timeliness] There's also no standard of PSHE education so by secondary school you have a real mishmash of students from different schools with different knowledge and skill levels in the subject. It's hard because that means you assume ignorance and start at the beginning then just to make sure everyone gets to the same place."

Phase 4: Searching for themes

Similar or duplicate codes were removed. Codes were grouped in similarity to generate overarching themes. A process of mind-mapping was employed for this purpose.

Phase 5: Reviewing themes

All the possible themes that could be used to organise the data was explored. The themes were then reviewed and refined. Some themes were combined as they explored the same concept (e.g., Initial themes: (1) barriers to teaching PSHE/RSE and (2) facilitators to teaching PSHE/RSE. Final theme: Factors that impact the provision of PSHE/RSE).

Phase 6: defining and naming themes

Themes were named and divided into sub-levels to organise the data. Theme names were chosen to describe the data captured. The themes and sub-themes are shown in appendix L. After the completion of these steps, the final step was the writing of this report.

4.4 Results

4.4.1 Participant and Area Demographics

Nearly all participants who took part in the study were White British (9/10). Participants were aged 30-57 (Appendix H). All participants worked as PSHE leads in "good" or "outstanding" schools, as rated by Ofsted. Of the ten teachers interviewed, six individuals were female and four were male. Nine of the ten schools were in Dorset and the remaining one school in Hampshire. Appendix F provides a brief overview of the population statistics in these areas in comparison to the UK.

Appendix G provides an overview of the population statistics according to the catchment area of each school. Appendix H provides an overview of participant demographics and experience. The tables show that the population in the catchment areas of the schools were quite similar. Both Dorset and Hampshire have relatively low levels of claimant unemployment and lone parent households when compared to the UK average. Appendix F indicates that there are low levels of people in poor or very bad health in these areas. As a result, Dorset and Hampshire are among some of the least deprived in the UK. This may mean that schools in these areas benefit from greater resources than schools in more deprived areas.

For the purposes of confidentiality, the schools have been anonymised to match participant codes (i.e., Teacher A is from School A, etc). The statistics show that, overall, the schools were in low deprivation areas, with a majority White British, high to intermediately skilled population. Appendix I describes the content of PSHE/RSE lessons in the sample schools based on Government curriculum guidelines.

4.4.2 Factors that impact PSHE/RSE provision.

In the theme generation phase, it became apparent that the twenty-six codes (Appendix L) generated for this category could be arranged into four broad themes:

I. curriculum content
II. teacher expertise
III. students
IV. external variables.

Codes were not always specific to the theme. For example, culture was associated with parental beliefs (external variable) and teacher discomfort in teaching PSHE/RSE (teachers). The themes were the same for alcohol and sexual health; however, some codes were associated with only alcohol and others only with sexual health. The next section of this chapter explores the prevalent sub-themes in more detail.

4.4.3 Curriculum content

When discussing the curriculum, five participants felt that there was an excessive focus on knowledge over skills in both alcohol and sexual health education.

Participant B:

"We only look at giving information, we're not following up to see what students are doing with the. So, it misses out all the behavioural and emotional factors in decision making."

Participant D:

"I guess if I was going to sum it up: know your units and know your contraception!"

Participant E:

"Generally, the curriculum doesn't tend to focus on skills. The curriculum tends to be about knowledge."

Similarly, some (3) indicated that there was a substantial focus on risk as a way to deter students from making poor choices with alcohol and sexual health.

Participant A:

"Well, we wouldn't really talk about pleasure as an outcome of sex. In the lessons the outcome of sex unless you use contraception is a baby or an STI."

Participant D:

"The curriculum tends to be a bit on the scaremongering side. It makes us teach the worst-case scenario hoping that will prevent a lot of the negative outcomes and ignores the fact that sex and alcohol can actually be enjoyed responsibly."

Overall, there was a feeling that the curriculum lacked relevance to students today. This was mainly attributed to the untimeliness of lessons: content was thought to be delivered too late

in an adolescent's life to be useful or unreflective of current issues. This was particularly predominant when discussing the sexual health curriculum. This was indicated by six participants.

Participant B:

"It's a big concern that now we're talking about alcohol and sexual health issues too late and so the students are disengaged. I can very distinctly remember a couple of years ago one of the teachers approached me as she felt uncomfortable delivering lessons about contraception and the costs of pregnancy as a couple of the students were expecting or were already parents"

"We can't assume the curriculum from ten years ago will still work today."

Participant F:

"The sexual health curriculum…erm…obviously there are gaps because I think certain changes in society and culture have made a huge difference in sexual health that the curriculum hasn't been able to keep up with. Like the fact that students have access to quite inappropriate content for through mobiles and laptops. We've only started looking into that."

Relatedly, the participants strongly felt that the curriculum lacked insight into diversity in terms of gender identification, sexuality and disability. They often expressed that in some ways the curriculum discriminated by assuming heterosexual relationships.

Participant D:

"It also tends to completely ignore anyone who isn't heterosexual and the gender they were born with. It doesn't really provide for homosexual or transgender individuals."

Participant E

"Looking at the model what stands out is that the curriculum doesn't really cater for different cultures or disability. I think that we are letting these students down in a big way. We're ignoring them which means that we're discriminating."

Participant H:

"The curriculum is very good as a starting point... but our students are more diverse in terms of sexuality and gender than ever, but RSE just hasn't kept up."

4.4.3.1 Teacher expertise

Teacher expertise or a lack thereof, was identified as a major barrier in teaching PSHE/RSE. Consequently, nearly all participants (8) in this study identified that there needed to be an increase in the quantity and quality of training provided.

Participant A:

" I think there is a definite need for more training. I think you need a background or at least an understanding in some if not all of the subjects, some degree of expert knowledge"

Participant F:

"I would say that 70% of teachers that I meet have never received any training. The teachers that have had some training usually still haven't had more than a vague overview of how to teach rather than what to teach. It should really be a more comprehensive part of teacher training. Training would help, not just a one-day training session on how you might deliver these lessons but actual in depth, or how to approach awkward topics and safeguarding but career-long opportunities to improve knowledge on a range of topics for a range of audiences."

Participant G:

"Subject knowledge is a big one. No one would expect an English teacher to be able to pick up the Maths curriculum and teach it with expertise without any prior training, so why do we expect it to happen with alcohol and sexual health education?"

Perhaps due to this, participants frequently felt that the responsibility of teaching alcohol and sexual health education should be shifted to more adept individuals. Expertise was identified as one of the main reasons to use external speakers in alcohol and sexual health. However, the use of

these tended to be utilised rarely. This shift of responsibility was also noted more by teachers who felt that a professional distance limited how much depth and discussion a teacher can initiate with students in sensitive topics.

Participant A:

"…we're doing the best we can given that we are teachers, not parents. There are conversations that we simply can't have with the students."

"Oh, I think it would be delivered by an expert in that field. Someone who really knows what they're talking about."

Participant B:

"I just think a lot of teachers do feel that PSHE isn't their responsibility because it crosses a line".

I don't think that teachers are doing badly but I think other people could do better. I think other professionals are key."

Participant D:

"… then we're too scared to add anything because we don't want to be deemed unprofessional. Teachers must stay removed and professional at the end of the day."

"It would be delivered entirely by external speakers or someone who isn't a teacher but works as the PSHE person in schools."

The workload of teachers also seemed to have a major impact on the provision of PSHE/RSE lessons, with a few (2) citing that the time for PSHE/RSE could be spent catching up with other work. In these cases, PSHE was not a priority subject for these teachers. Workload was mentioned as a barrier to teaching PSHE by five teachers.

Participant H:

"There aren't enough hours in the day to keep up with all the marking and lesson planning. All teachers go home and still work until quite late. So, despite thinking that sexual health and alcohol and all those other PSHE topics are important, I also know that teachers will use that lesson to catch up with their own work and leave it to a vote to the students as to whether they want the lesson or whether they want to catch up or get on with their own work"

Participant I:

"I think that the amount of work teachers have to do makes a real impact. Having to plan a PSHE lesson on top of your normal lessons can be a bit stressful for a lot of teachers because it's not their normal subject"

Discomfort or embarrassment when teaching alcohol and sexual health education was cited as a barrier by many of the participants (6). Although some expressed that this could be the case generally for any sensitive topic, this seemed to be especially predominant in sexual health education. This was often linked to sexual health being a taboo subject within our culture and parental beliefs. These variables will be explored further in the following sections.

Participant C:

"Teachers do have a duty of care, but I think sexual health is still a very taboo subject, and until there is a society change that removes that taboo, teachers aren't the best placed to deliver the knowledge"

Participant E

"It's awkward enough for some teachers to teach RSE, not really so much alcohol."

Participant F:

"A majority of teachers hate teaching RSE, so it isn't taught particularly thoroughly. The topic is still a source of awkwardness. A lot of teachers feel like they can't maintain that professional barrier and teach sex. I think a lot of it is to do with our culture, we're not great at communicating about sex and sexual health. It's very much a taboo subject."

Ultimately, three felt that all teachers lacked the shared experience to be able to successfully plan and deliver PSHE/RSE lessons.

Participant B:

"I think it needs to be really embedded into teacher training. With technology going the way it is, there are definitely things that students face now that they haven't ever faced before. If we're going to teach them something, then we need to be on the forefront."

Participant G:

"There is a massive generation gap. There is no way that we, as teachers, can relate to students more than in a very general way. There simply isn't the shared experience there."

Participant F:

"I think the training needs to start with bridging the generation gap. I hear so much on the news about the younger generation being the 'snowflake' generation. Like they can't cope with anything. The truth is that they have more to cope with than any generation before. I think teachers are overall sensitive to that, it's more that they can sympathise but not empathise."

4.4.3.2 Students

With regards to students, one teacher expressed concern about their perceived credibility, based on experience.

Participant H

"In terms of the student I think it's down to whether they're going to listen to anything a teacher has to say about alcohol or sex"

One other teacher indicated that perceived judgement from teachers may inhibit student learning through discussion.

Participant E:

"I think more theatre productions would be great. One of the advantages of having that is that students don't feel like they're secretly being judged by the teachers for what they're talking about"

4.4.3.3 External variables

In terms of external barriers in teaching PSHE/RSE, three participants felt that PSHE/RSE was generally undervalued as a subject by society, and this often meant that there was not enough time dedicated to the subject.

Participant C:

"I would think time and the fact that PSHE or RSE is quite underrated as a subject. It isn't the ideal situation but the priority it on the academic…so PSHE/RSE sessions are timetabled for once a month. We don't have time to fit it into tutor time around registration because that's only about 15-20 minutes a day if that. We're lucky to even have that to be honest. Another big one is funding. I have a lot of teachers who want to do training in PSHE and RSE, but we just don't have the funding to send everyone who wants to go."

Participant H:

"More time given to the subject in the timetable. You can't cover everything if you only have a PSHE lesson once a month. The wellbeing of students really needs to be made more of a priority. We can't just say that we care about wellbeing, we need to do something about it."

4.4.3.4 Other findings of interest

The idea that personal beliefs of parents could cause resistance in teaching and learning sexual health was expressed by several participants. This seemed to be the case with both teachers and parents.

Participant E

"I would love to see an inclusive curriculum, but I know that a lot of parents would have problems with their students learning about gay relationships."

Two participants expressed concerns that alcohol education received less time within the curriculum, citing that it was taught as part of a wider drug addiction module.

Participant F:

"I think alcohol education is a bit lacking in terms of substance, it's usually part of the drug use module."

As in sexual health, one participant indicated that the barrier was a societal issue:

Participant I

"I think the problem is that right now is that there isn't a gold standard of teaching in sexual health and alcohol in the UK. Alcohol is usually bundled in with drug use and I that's dangerous because a lot of students will drink but not all of them will take drugs, so I think those dynamics need to be separated a bit. We have this drinking culture here in the UK and we need to stop and look at that. I think by diminishing the time we talk about the risks of alcohol, the more we're making it a social norm."

4.4.3.5 The impact of RSE as a statutory subject

All PSHE leads participating in this study expressed that compulsory RSE is a positive first step. However, this came with several concerns, mainly that there was little guidance on RSE curriculum yet, and consequently, time to implement a new curriculum would be limited.

Participant E

"I'm not sure. I'm confident that our school are doing well in alcohol and sexual health education but it's hard to know if we'll have to change anything without any real guidelines yet on what we're supposed to be doing. Just little things like will there be a minimum amount of RSE hours required per week? Its things like that, that can really throw things into chaos if they aren't introduced early enough"

Participant F

"How prepared are we? Er…. well, I guess we have what we've had over the past few years for RSE. We haven't prepared anything else as of yet because quite frankly we haven't received any direction in terms of what we should be covering above what we have already been teaching. I don't know if we're prepared or not."

Participant H:

"We've been told that the change is coming, and we've been told to wait for guidance but its nearly 2018 and we haven't received anything. If we're going to transition smoothly to implement this change then the government are leaving it a little bit late to provide the guidance, training and curriculum content that this will realistically require, that is unless something happens very soon."

Participants were also concerned that alcohol education would become less of a priority as schools concentrated on delivering a comprehensive RSE curriculum.

Participant B:

"…some schools will just concentrate on RSE to the detriment of other topics like alcohol".

Participant D

" It will be downgraded in terms of importance along with other subjects in PSHE, if PSHE doesn't get scrapped completely to be replaced by RSE."

Participant G:

"I think with the time constraints, if schools have to do RSE then they will probably forgo covering any other topic including alcohol use."

Despite such concerns, two participants still expressed that compulsory RSE would be positive as it would improve standards and provision within the subject.

Participant H

"I think it will force schools to ensure that a generally good standard of RSE exists, which can only be a positive change"

Participant I

"I think it'll vastly improve the state of RSE."

4.4.4 Improving models of Alcohol and Sexual Health Literacy

Overall, the models of AHL and SHL were received positively, with many teachers feeling that it was comprehensive and only a few additions suggested. Conversely, one participant (Participant C) suggested that the model could be simplified, which will be taken into consideration. Three participants felt that aspects of emotional intelligence were relevant to the AHL and SHL models:

Participant D:

"I'm not sure where it would fit in but put empathy in there. I think when you're dealing with issues around consent etc. empathy would play a big part in how much you understand about someone else's needs, I guess. In terms of alcohol, I would put empathy in there because of peer pressure. I think a lot of the people that exert peer pressure lack empathy."

Participant E:

"I think there needs to be something about emotional intelligence."

Participant F:

"Something about ability to manage emotions."

Other suggestions included additions to the competencies of the model. These factors are explored in more detail later in this chapter.

Participant B:

"Maybe understanding and identifying abuse in sexual health, and confidence to speak out about it. That's quite relevant now. I think something about enjoyment in alcohol would be good, because why would everyone drink if it was a terrible thing. It's a confusing message for adolescents."

Participant D:

"Maybe something about enjoyment and abstaining in alcohol competencies. It says responsible drinking but just because you're drinking responsibly it doesn't mean that you're enjoying the act. Also, not everyone wants to drink so maybe being able to choose whether you abstain or drink.

I guess it's covered by "pleasure or consensual sex" but in the sexual health outcomes, maybe something about knowing the right information for you? Say for example that you're gay, I think that they have a right to know what sexual intercourse then would involve because we only really talk about the mechanisms of heterosexual intercourse."

Participant E:

"I think part of understanding the facts is knowing what sex and alcohol choices entail for different cultures, identities and sexualities."

Participant H:

"I would add wellbeing, mental wellbeing and mental health in general can definitely impact alcohol use and sexual health and mental wellbeing is also an outcome for both."

4.4.5 Evaluating Alcohol and Sexual Health Literacy in Schools

4.4.5.1 Need for assessment

The majority of the participants (9) within this study indicated that alcohol and sexual health literacy was not assessed among their students in any form. A few expressed that it would be helpful if an evaluation existed to develop and tailor the curriculum to fit student needs. Participants' thoughts on design and utilisation are explored in detail in section 4.2.5.

Participant I

"Obviously, I understand that can't be totally helped but if there was just a way to gauge where each student was, so you know what to teach, it would be a lot easier"

4.4.5.2 Concerns in evaluating AHL/SHL

Initially, two teachers expressed a concern that a measure of AHL or SHL based on the models would be impossible to develop due to the large number of factors that it would incorporate. One

participant expressed further concerns in terms of the appropriateness of such a measure and the honesty in responses collected.

Participant C

"I don't know if any assessment tool would be able to account for all these factors."

Participant D

"Also, there's too much to cover, how would we evaluate that? Without asking horrendously inappropriate questions from our students! Then they probably wouldn't be honest!"

4.4.5.3 Design of AHL/SHL Measure

When asked what form a measure of AHL/SHL should take, four of the participants were unsure of the exact format. However, two participants indicated that such a measure should employ context to measure AHL and SHL to assess how students interact with their social environment.

Participant E:

"I think some form of interactive measure. Did you do the theory driving test where you had to identify risks? Something like that where student can interact with an environment to spot risks."

Participant F:

"Some sort of situation-based approach may work quite well. I've taught PSHE lessons where students had to evaluate what their response would be in specific situations."

Two participants suggested that a measure with quantitative aspects would be of use in terms of contextualising their student population's needs.

Participant D:

"…also be useful to have the general data on sexual health and alcohol…"

Participant H

"A survey might be useful, across the school"

Finally, two suggested that the models themselves could be a decision aid for teachers to make a reflective evaluation.

Participant A:

"It may be useful for something like this to be used by teachers to make a reflective decision about their students. So, for example, the teacher would use what they know about the student to form some sort of score based on these models."

Participant B:

"I think a measure would need to be more of a decision aid for teachers."

4.4.5.4 Utilisation of AHL/SHL Measure

The main reasons teachers gave for requiring such a measure of AHL/SHL varied. Six suggested more than one reason, the most prevalent was so that teachers could identify students at risk, requiring intervention. The measures tended to be discussed in broad terms, teachers did not distinguish differences between the format of measures of AHL and SHL.

Participant B

"I think I would use it to say okay I have this student, I can look at the model and see that these factors like relationships with parents and friends can put them more at risk, like what individual factors can I target to overcome that?"

Participant J

"… it gives you very definite things to look out for in your students. Some of that information, you will already have as a teacher."

Four of the teachers also indicated that such a measure could be used to assess student needs to plan and improve appropriate lessons.

Participant A:

"I think I would use a measure to see what my students needed in terms of alcohol and sexual health education."

Participant C

"…it could be used by schools to see where the weaknesses in their PSHE/RSE lessons are."

Participant E

"I'd use it just generally to see how my students are doing, what we need to work on as a school."

There were some additional findings that are worth further consideration. For example, two of participants felt that a measure of AHL/SHL would help standardise the provision of PSHE across school, by establishing a minimum level of attainment.

Participant J

"I guess a measure like that could help set standards for PSHE across schools if there was a minimum attainment level that everyone had to achieve"

One participant also suggested that such a measure could be used to track student progress as a quality check for teaching within a school.

Participant H

"That way we can look as see how well the students are doing when they first come in and when they leave the school. Basically, to check if I've done my job well!"

4.5 Discussion of results

4.5.1 Factors that impact PSHE/RSE provision

From the criteria outlined in the PSHE curriculum, it was evident that alcohol education in schools aligns with the content suggested by organisations such as the AET but also that as a topic, alcohol use is oversimplified to memorising facts. A study by McKay et al. (2018) that interviewed 27 school stakeholders in Scotland and Northern Ireland, reported similar findings. Findings indicated that schools designed their own curriculum in alcohol education, but this was not part of a logically structured approach (McKay et al., 2018) Topics of education tended to focus on teaching the facts and biological and social consequences of alcohol (McKay et al., 2018). The findings from this study seem to indicate that a variety of themes associated with alcohol use is overlooked (e.g., perception and decision making under the influence, risk management and emotion regulation are absent). In comparison, all schools explored the breadth of sexual health education with much more detail than alcohol use. Certainly, the participants in this study expressed concerns that alcohol health education is prioritised far less than sexual health. This may reflect the renewed

focus on RSE as a statutory subject, where alcohol is often incorporated into other health-based lessons. It may be that, as one teacher suggested, alcohol is too embedded within British culture. As a result, the repercussions may not be explored in detail or taken seriously (Giles, 2015).

The limited focus on alcohol education may also be a result of headlines that, perhaps misleadingly, show drinking rates among young people in the UK have fallen steadily in the past few years (Batchelor, 2017). This statement is true; however, the data also shows that within the 16-24-year-olds,

those who do drink, binge drink much more than individuals of other age groups (Office for National Statistics, 2018). Research has also shown that adults are largely unaware of the size of a standard drink and therefore consume higher rates of alcohol than they report (Kerr and Stockwell, 2012). Plainly, as a society, we have not yet reached a stage where alcohol education is no longer needed.

The curriculum for sexual health education also largely focuses on the biological facts, and risks associated with sex. Participants reported that the curriculum was discriminatory by the intrinsic assumption that all relationships are heterosexual (section 4.2.1.1). The Stonewall School Report (2017) surveyed 3,713 LGBTQ+ young people to explore their experiences of RSE in school. Participants self-reported that 40% of LGBTQ+ students are not taught any information relating to LGBTQ+ issues in school or college. Only 13% were taught about healthy same-sex relationships and only 20% were taught about where to find advice and help (Stonewall, 2017). 77% of pupils also reported that they had not been taught about gender identity (Stonewall, 2017). In schools that taught LGBTQ+ issues, these students reported higher rates of wellbeing and less bullying than in schools where these topics were not taught (Stonewall, 2017). Schools have a responsibility for the safety and wellbeing of all students. Teaching RSE within the context of diverse identities and relationships is one integral method in which this can be provided. The specific curriculum content for alcohol and sexual health education is explored further in the final chapter of this thesis.

Participants in this study also questioned the timeliness of PSHE/RSE lessons, often worrying that the information was provided past the time of usefulness (section 4.2.1.1.). This was particularly a concern in sexual health. The Department for Education draft guidance for RSE and Health Education (2019) does include RSE as compulsory in primary schools. This may potentially overcome some of the above concerns. Regardless of curriculum it may be astute of schools to evaluate knowledge and skills in their own student population to tailor the curriculum to actual needs. Of course, this might be dependent on the availability of an AHL and SHL measure.

The way in which the PSHE/RSE curriculum is designed varies between schools. The Government provide the framework which Heads of Year, PSHE leads and at times local governing bodies (e.g., local council as with Schools A, C, G, and I) utilise to form their own school curriculum. Nine of the teachers in this study were aware that their own school curriculum was lacking in content. However, they felt that they lacked the time and expertise to improve the curriculum. Most of the teachers in this study felt that PSHE/RSE should be delivered by external experts (e.g., healthcare or youth workers). However, with increased funding cuts to youth services, these PSHE teachers may have to take more responsibility in the promotion and teaching of PSHE as leaders in the field. Nevertheless, we must accept that the perceived reality, in some of the best schools in the UK, is that no one has the expertise, time or resources to suitably teach PSHE (Jenkins, 2017).

Guidance on overcoming some of these barriers has been provided by the PSHE Education Strategic Group. The report suggests that these barriers can be overcome with the effective use of existing resources and a whole school culture of wellbeing (PSHE Education Strategic Group, 2018). Case studies are provided to illustrate these points. The report highlights how teacher training is more cost-effective than the use of external agencies (PSHE Education Strategic Group, 2018). It also demonstrates how existing materials from the PSHE education strategic group can be employed to save time and effort (PSHE Education Strategic Group, 2018). Although the guidance provides some very useful information, perhaps it is aimed at schools where any resources are available for PSHE to begin with. It also takes an optimistic view that all school stakeholders are willing to make PSHE a priority when a wealth of research, including this study, suggests that PSHE is undervalued as a subject (Formby, 2012).

Although schools are responsible for the design of their curriculum, the main guidelines are still prescribed by the government. As shown by participant responses in this study (section 4.4), these guidelines tend to be vague. The issues with PSHE/RSE provision seem to be at least partly a result of top-down instruction. If alcohol and sexual health education are low priority tasks for the Government, why should schools be expected to compensate, particularly when resources such as time and funding are scarce and redirected to high priority, academic subjects. The laid amendment to the Social Work Bill (Department for Education, 2017) attempts to overcome these failings by prioritising RSE in the future. This is an important first step by the government in acknowledging the societal costs of poor sexual health. Yet, there seemed to be a lack of any clear guidance or direction for this change, despite a document detailing these factors promised for ‘early 2018’ at the time of this study (Department for Education, 2017). At the time, teachers in this study explained that they did not feel prepared for implementation of the new guidelines from

September 2020. The quality of new RSE/Health Education guidance will be explored further in the next chapter (Chapter 5) of this thesis.

A further concern for participants was that more sensitive topics were difficult for teachers and students to discuss due to cultural beliefs and stigma (section 4.4.1.4). In 2003 the Department of International Development directed a synthesis meeting of professionals to explore how cultural stigma and discrimination can be addressed in sexual health issues (Aggleton and Wood, 2004). The report outlined that: changing social norms, challenging the language used, encouraging youth participation in sexual health programs, creating spaces for coalitions of marginalised groups, developing more sensitive and collaborative research and the use of mass media to inform, can help overcome stigma attached to sexual health issues (Aggleton and Wood, 2004). Later, the Department of Health and Social Care (2013) identified that stigma related to sexual health issues can stop individuals seeking or receiving information and healthcare. In the report a key objective was to: "Build an open and honest culture where everyone is able to make informed and responsible choices about relationships and sex" (Department of Health and Social Care, 2013, p10). RSE was identified in the report as a key mechanism by which this objective could be achieved, and yet, five years on, the situation seems unimproved (Department of Health and Social Care, 2013). There seems to have been very little action taken towards the achievement of this objective.

Training teachers may be cost-effective in comparison to the use of external agencies, but given the other obstacles to overcome, they may not necessarily be the best solution. In this case, it is important to explore how existing external agencies can be effectively used to deliver alcohol and sexual health education. Much of the research in this area focuses on the use of school nurses and youth workers.

The Royal College of Nursing States that: "In PSHE, a school nurse's role is to complement teachers' work and not to replaces the teachers' responsibility to cover PSHE" (Royal College of Nursing, 2012, p.14). School nurses are often seen as a valuable, yet underutilised, source of credible health information by students (Beech and Sayer, 2018; Turner and Mackay, 2015). Evidence has shown that students also prefer discussing sensitive subjects with nurses as opposed to teachers (Edwards, Street and Rix, 2016). Unfortunately, due to austerity measures, the number of school nurses has fallen from 2987 in 2014 to 2433 in 2017 (Connett, 2017). This has meant that the involvement of school nurses within education often depends on workload (Turnery and Mackay, 2012).

Similarly, a UK based report by the National Youth Agency (2013) reported evidence that teachers were eager to collaborate with youth workers in delivering some parts of PSHE. Youth workers were effectively utilised to deliver and in PSHE/RSE lessons (National Youth Agency, 2013). Youth workers identified PSHE/RSE as an area in which they feel they make great impact in schools (National Youth Agency, 2013). Outside of formal settings, youth workers are identified as a way in which to reach marginalised or particularly at-risk youth (Sex Education Forum. n.d.). As with nurses, students are more comfortable in discussing sensitive issues with youth workers than with teachers and feel that they are a more credible source of information (Sex Education Forum, n.d.). It seems that utilising available sources such as school nurses, youth workers and peers could strengthen the quality of PSHE education by overcoming such barriers as cost, awkwardness, and embarrassment of students and perceived credibility of sources. However, as mentioned previously, funding cuts in these areas would make this difficult to implement. Further attention will need to be paid to how these sources are utilised in PSHE lessons as there is limited research in this field. However, it is reasonable to assume that at the very least, these experts, where available, could be called upon to inform a relevant and knowledgeable curriculum for PSHE/RSE in local settings.

4.5.2 Impact of RSE becoming a statutory subject

The promotion of RSE to a statutory subject in all schools was received positively among the PSHE leads. On the other hand, nine teachers expressed reservations when asked about the impact of this on the status of other PSHE subjects such as alcohol. Many felt that the focus on RSE would mean the devaluing of other PSHE topics. However, PSHE teachers are more willing to accept this if it means that RSE will be delivered across the UK to a high standard. There was some feeling among the teachers in this study that making RSE mandatory is only a first step, and this should be followed by regulation that makes PSHE mandatory too (Humanists UK, 2018; The National Education Union, 2018). The Government have reacted to this, requiring compulsory teaching in all schools of health, sexual health and relationship aspects of PSHE from the year 2020 (Department of Education, 2018). Making aspects of PSHE mandatory in all schools will raise standards of provision in schools that do not provide PSHE. However, parents will retain the right to withdraw their children from both mandatory RSE and PSHE related subjects.

Additionally, the PSHE leads interviewed in this study seem to be relatively unprepared for the change, with limited guidance and assistance available currently from the government. Schools may be unwilling to prepare until the appropriate guidelines are published in fear of wasting scarce

resources. The sustainability of compulsory, high-quality, RSE must also be explored. Budget cuts in schools have been prevalent in recent years. It is reported that the UK school budget has been reduced by £2.8bn since 2015 (Schoolcuts.org.uk, 2018). The National Funding Formula (NFF) for schools, introduced in 2016, attempts to redistribute funding among schools. This means that all school receive a minimum set budget per pupil, which can be increased based on other factors such as socioeconomic status and low attainment among students (Department for Education, 2017). Initially, it was thought that the NFF system would cause an increase in funding to schools from relatively deprived areas, and a decrease in funding to schools with high attaining pupils (Weale, 2018). Contrary to Government opinion, it became evident that the NFF had made little impact on the funding crisis that schools face. Reports have detailed that schools still have to compensate for overall cuts by utilising funds reserved for disadvantaged pupils and with staff cuts (Weale, 2018).

With these issues in mind, if compulsory RSE is to be introduced effectively there are many obstacles to overcome. Increases in the need for RSE teacher training across schools will require more funding in an already stretched budget. If the government does not provide this extra funding, it is inevitable that other areas of education such as alcohol education will suffer.

4.5.3 Improving models of AHL and SHL (as suggested by Participants)

Participants were encouraged to suggest improvements to the ‘‘factors’ and ‘competencies’ of the AHL and SHL models. Emotional intelligence (EI) and empathy were among the main suggestions for addition to ‘internal factors’ in models of alcohol and sexual health presented to teachers in this study. EI broadly refers to the ability to understand and manage one’s own emotions as well as the emotions of others (Coelho, 2012). As empathy refers to the ability to understand or share an individual’s feelings, it can be thought of as an aspect of EI and was coded as such within this study. Many studies have linked EI with alcohol use and sexual health. A study conducted by Trinidad (2002) in the USA of 205 adolescents found that EI was negatively correlated with general alcohol and tobacco use. The research is more limited in sexual health; however, one study by Lando-King et al. (2015) found that EI could be a protective factor in sexual risk behaviour in adolescent girls. As a result of participants’ suggestions (Section 4.4.3), EI was incorporated into to the individual factors of the AHL and SHL models.

Mental wellbeing was suggested by Participant H as an individual factor that impacts alcohol use and sexual health. There is considerable evidence supporting the role of poor mental health in issues with sexual health and alcohol abuse. Individuals with severe mental illness are more likely to engage in high-risk sexual behaviours (e.g., unprotected sex, multiple partners etc) (Pandor et

al., 2015). Individuals with severe mental illnesses are more likely to misuse alcohol and drugs (Weaver, 2003). Mental health was not included in the AHL and SHL models prior to discussion with the teachers, as it influences factors such as cognitive ability and disability. However, as participants within this study identified this, from their own experience, as an important factor, mental wellbeing was incorporated into the AHL and SHL models as an individual factor that can impact health literacy.

Competencies for addition to the model were considered without an evidence search as the PSHE leads were basing these on PSHE/RSE curriculum learning objectives. The following competencies were added to the models of AHL and SHL upon recommendation from the teachers interviewed in this study (see section 4.4.3):

- AHL: responsible enjoyment, understanding and respecting the choices of others, autonomy, mental and physical wellbeing.
- SHL: understanding and respecting the choices of others, the ability to identify abuse and report to the relevant authorities, mental and physical wellbeing.

Abstaining from alcohol and sexual intercourse was not added as an outcome in either model as it was felt that this is implied in autonomy (this was added to AHL competencies) and responsible enjoyment. “Knowing the right information for you” as mentioned by Participant D was thought to be encompassed within information literacy and thus was not added. The final model is presented in the appendix (see Appendix N).

4.5.4 Evaluating AHL and SHL in schools

Nearly all (9/10) participants indicated that a measure of AHL/SHL would be useful. The participants discussed a variety of approaches in the design and implementation of an AHL/SHL measure. It was clear participants thought that such a measure could be utilised in almost every aspect of PSHE/RSE provision, from aiding with planning, to tracking progress, feedback and development. When discussing the design of such a measure, responses ranged greatly but two teachers indicated that context would be important. Interestingly, two participants felt that creating a measure based on all the factors within the AHL/SHL was seemingly impossible. These concerns suggest that a measure of AHL/SHL that incorporated all the factors from the model may be too exhaustive for use in classrooms.

In schools, formal assessment for traditional subjects such as e.g., science, maths etc. test students on the demonstration of knowledge. Associated learning objectives are set by governing

bodies. If an AHL/SHL measure could be developed for use in a classroom, perhaps it is necessary to create a measure that assesses the extent to which competencies in alcohol and sexual health education have been demonstrated.

4.6 Summary

In summary, the study highlighted several findings, some of which supported existing data and some of which was new. The research reviewed in Chapter 1 and in section 4.5 supported the finding that alcohol and sexual health education in schools still focus mainly on knowledge rather than competence. However, the study went further in identifying the barriers to delivering a competency-based curriculum for alcohol and sexual health education in schools. Many schools still follow a knowledge- based curriculum for alcohol and sexual health education despite being aware of the pitfalls due to issues such as taboo and embarrassment, lack of training, expertise, and support and this has seemingly continued even though RSE and health education are to become compulsory subjects. Competency-based curriculums can be difficult to implement in any subject and such curriculums are still rarely used (Serdenciuc, 2013).

Competency- based education (CBE) relies on a total shift in paradigm from traditional models of teaching with time and resources allocated to identifying robust and valid competencies, ability to support the individual learning styles and pace of each student, effective and accessible learning resources, and reliable assessment (Johnstone and Soares, 2014). The models of AHL and SHL formed in this thesis identify the competencies needed for such a curriculum to be designed. However, aside from the pressures already identified in section 4.5.1 such as lack of training or guidance, CBE in alcohol and sexual health education must additionally overcome barriers of social and cultural beliefs on the role of educators in delivering these competencies, particularly regarding sensitive or taboo topics such as sex. A few teachers in this study stated that they did not feel that it was their role to deliver these competencies, and many indicated issues with embarrassment.

These factors were further expounded when exploring how AHL and SHL competencies could be assessed. There was a variety of suggestions for the use of an assessment from lesson planning to feedback but, interestingly, there was little consensus in the format of such an assessment and concern over the appropriateness of administering such an evaluation particularly as CBE focuses on the demonstration of skills, and in this case the demonstration of competence regarding alcohol and sexual health. This raises further questions about the role of schools in delivering competencies in AHL and SHL. Sullivan and Downey (2015) posed that local and national mandates, a catalyst and common moral factors are key to programmatic shift from traditional curricula to CBE. Although a

national mandate is now present, it seems that the other factors are still lacking currently in the UK to allow for AHL and SHL to be delivered effectively, at least in a school context. Particularly as the change in law was not supported by more funding or aid in any form for schools and schoolteachers.

Teachers generally felt positively towards RSE being made compulsory in secondary schools although they felt unprepared for it with many, surprisingly, seeming to want more prescriptive guidance. Considering all the findings, it is difficult to determine if compulsory RSE will have the desired impact if the quality of education delivered is impaired due to a lack of resources, training, time, and general embarrassment about the subject matter. It was also posited by some that RSE becoming compulsory would diminish the focus on other subjects such as alcohol. Independently of this, teachers discussed how alcohol education focused more on facts about units and harms than the potential emotional and social components when compared to sexual health. Although it is not clear why this is the case, with mandates placing more focus on RSE, it is possible that alcohol education may become a decreasing priority for schools.

A clear theme emerged from this study. There is a conflict between what educators in this field wish to do and what they can do. An insistence on progress and attainment-based education assessed by what can be easily measured stifles creativity in teaching. Teachers are under pressure to produce tangible progress that can ideally be summarised by statistics. To achieve progress as measured by bodies such as Ofsted, teachers and schools' resort to prescriptive curriculums taught through a traditional managerialist discourse. This is discordant with the inclusive competency building style of teaching needed for alcohol and sexual health education. The pressure for progress is increased in the core subjects (Science, Maths and English) creating a hierarchy of subjects in which RSE and HE are perceived to be of the lowest importance. This focus on performance also has interpersonal impacts on educators, from the moment they start training. The importance placed on core subjects often means that training for these is well funded which impacts trainee choices, leading to a reduction of expertise in other subjects. Many educators who teach RSE/HE also teach and tend to specialise in other subjects. This culture of attainment and assessment increases workload and accountability for teachers and are often at odds with their personal views on education (Skinner, Leavey and Rothi, 2019). Already under pressure with the subjects of their specialism when educators are given more work in the form of teaching RSE/HE, it is understandable that this subject may be neglected. Additionally, even if these pressures did not exist, educators wishing to develop RSE/HE competencies justifiably worry about crossing a professional barrier with students due to the cultural views around alcohol and particularly sexual health education. This is exacerbated with a lack of training and support provided for the subject.

These underlying tensions in education contribute to the views that educators expressed within this study of feeling underprepared, wanting a more prescriptive curriculum, and believing that mandatory RSE will have little impact.

Additionally, through the interviews, the teachers identified various factors that could strengthen the models of AHL and SHL. Although this was supported within the research and thus not necessarily a new finding, it did importantly highlight that although models and frameworks of health literacy are useful, they are not yet comprehensive. Models can often be over-simplified and thus this study was vital in gathering further evidence to create robust models of AHL and SHL. Further research is still needed to understand the relationships between the factors present in the AHL and SHL models and the relative significance of these on AHL and SHL.

The research questions explored in this study were:

Research question 4: What competencies do local PSHE teachers believe are needed in order for an individual to be health literate in alcohol and sexual health?

Research question 5: What are the barriers and facilitators to delivering these competencies, according to expert secondary teachers in the UK?

This study successfully identified further competencies and the barriers and facilitators associated with these that local teachers believed were necessary for an individual to be health literate in alcohol and sexual health. However, the study also went further and added to the field of research by exploring and contextualising the issues with delivering alcohol and sexual health competencies in educational settings in the UK. Overall, teachers generally felt ill prepared to deliver AHL and SHL competencies and wanted more guidance and support. Regarding the generalisability of the findings, although the sample size in this study was limited due to a potentially homogenous sample and data saturation being reached, findings from the study were supported where possible with supplementary data and existing research. Although this study may not have identified all the barriers and facilitators, competencies associated with AHL and SHL delivery in educational settings, it still highlighted many key issues that existed in seemingly well-resourced and high achieving schools. These issues may be exacerbated other schools that have access to less support. The next chapter (Chapter 5) will explore alcohol and sexual health curriculum internationally to explore the role of curricula in effective alcohol and sexual health education implementation, particularly as lack of guidance was identified as a major barrier to effective sexual health and alcohol education implementation in this chapter.

Chapter 5 Analysis of Alcohol and Sexual Health Curriculum guidelines for Secondary Schools in Eight Countries.

5.1 Introduction

In Chapters 2-4, research- based models of AHL and SHL were developed, and associated competencies were identified. In Chapter 4, the views of local experts regarding alcohol and sexual health competency and the current state of PSHE/RSE education were explored. Findings from the qualitative study (Chapter 4) indicated that teachers felt that they lacked guidance and felt ill equipped to build alcohol and sexual health competence in students. With these findings in mind, it is important to consider the impacts of curriculum guidance in RSE and HE, specifically to identify problems and possible solutions within the current curriculum guidance for RSE and HE and identify strengths to build on these, learning from existing approaches to curriculum guidance internationally.

5.2 Aims and Research Questions

The following research question will be addressed in this chapter:

- **Research question 1:** What competencies do international experts (researchers and policy makers) believe are needed for an adolescent to be literate in alcohol and sexual health?

This chapter will explore how alcohol and sexual health curriculum guidelines in England compare with other countries that have implemented compulsory sexual health or alcohol health education. The aim of this chapter is to provide some guidance on how and if alcohol and sexual health curriculum guidelines in England can be improved to promote and build AHL and SHL competency in adolescents.

5.3 Methods

5.3.1 Data Collection

A purposive sampling method was used to collect Government guidelines on alcohol and sexual health from countries that met the following criteria:

I. sexual health education is compulsory in secondary schools and/or
II. evidence that some form of alcohol health education is provided in secondary schools
III. curriculum guidelines are available for health education which includes sexual health and/or substance use as topics
IV. guidelines are available in English.

Government guidelines for alcohol and sexual health education were chosen as the target sample. The criteria did not include compulsory alcohol education as there were no countries that required compulsory alcohol education in schools and thus this criterion would have produced no results.

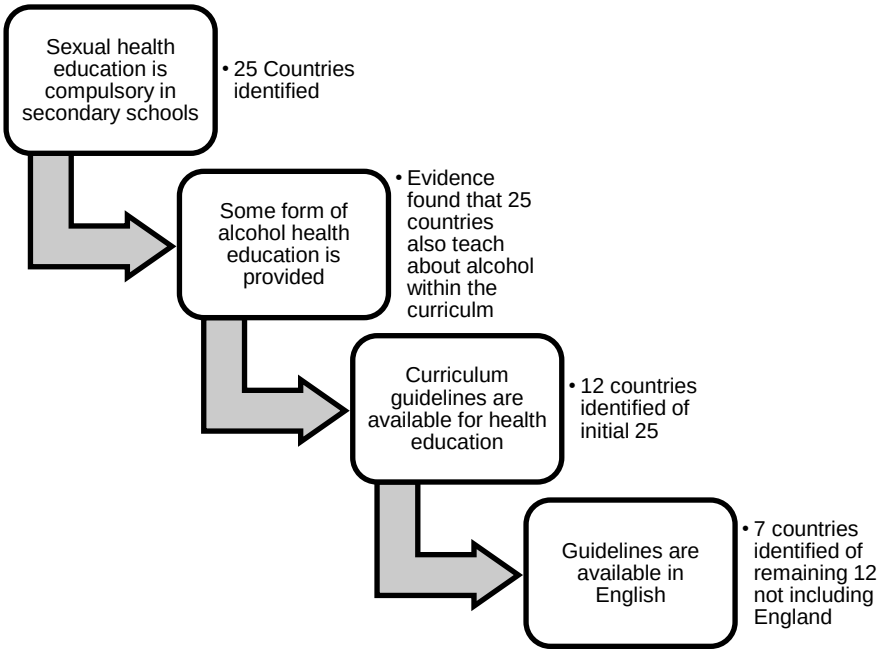
Countries where sexual health education is compulsory were identified through two reports by the World Health Organization (WHO):

- Global school-based student health survey (GSHS) (WHO et al., 2013)
- Sexuality Education in Europe and Central Asia (WHO, IPPF and BZgA, 2018).

Twenty-five countries provided some form of compulsory sexual health education. The Government websites of these countries were then searched extensively according to the other criteria detailed above (See Figure 5.1). Where curriculum guidelines were not available to the public, the department was contacted via email to establish whether any alcohol or sexual health curriculum guidelines were available. Two countries were contacted (Netherlands and Belgium) of which only the Netherlands responded, indicating that there were no national guidelines for alcohol or sexual health education. Countries excluded in criteria III included: USA, Cyprus, Germany, Netherlands, Russia, Spain, Tajikistan, Ukraine, Bulgaria, Bosnia and Herzegovina, Kyrgyzstan, Thailand, Cambodia. Countries excluded in criteria IV included: Estonia, Finland, Belgium, Latvia and Albania. After this process, seven countries met the criteria for analysis in this study. These were: Sweden, Ireland, Philippines, Australia, Canada and New Zealand. Criteria regarding the age of the curriculum guidelines were not established as it became apparent that some countries (e.g., Sweden) currently used guidelines that were designed more than a decade prior to the date of this study (2019). Additionally, descriptive statistics about STI/ alcohol use prevalence and legislation

were collected through a basic search of the literature on each country included in this study in order to frame the context and explore potential impacts of alcohol and sexual health education.

Figure 5.1 Search Process



5.3.2 Data Analysis

Content analysis was the chosen method of analysis for the curriculum guidelines. This method is widely used in curriculum analysis research in order to evaluate curriculum according to established standards (Kain, 2018; Sheafor et al., 1985). The specific form of content analysis used was adapted from a study by Ivanova, Draebel and Tellier (2015). The sexual and alcohol health education guidelines were analysed for the following:

i. Core competency (CC) coverage: the number of CCs mentioned (as listed in Table 11). CCs were searched for and counted. Core competencies were developed in Chapters 2-4 of this thesis using research and local experts (see competencies in final AHL/SHL models, Appendix N).

Core competencies were chosen for analysis as they represent the outcomes or objectives that an adolescent with high AHL and SHL would be able to achieve. Although the other factors in the model are influential in developing and maintain AHL and SHL, some of these factors (e.g., ethnicity) are beyond the realms of what curricula can influence. However, the guidelines were examined to identify any other objectives (e.g., relating to external factors such as parents) included and not included AHL and SHL models. Other factors present in the guidelines that related to AHL/SHL models are listed in tables 5.3 and 5.4.

ii. Vulnerable group coverage: the number of vulnerable groups mentioned (including those identified in the 'Demographics' part of the AHL and SHL models). The guidelines should account for:
   - Age
   - Culture
   - Disability
   - Ethnicity
   - Gender
   - Immigration
   - Religious diversity
   - Sexual identity
   - Sexual orientation
   - Socioeconomic status (SES)

Vulnerable groups were identified according to English legislation i.e., Safeguarding vulnerable Groups Act (2006). For the purposes of this study, 'culture' refers to shared customs, norms and practices of a social group, which is not necessarily related to ethnicity. Sexual identity refers to self- identification concerning gender. Sexual orientation refers to gender related characteristics individuals find preferable in romantic partners.

iii. CC quality: each CC receives a score from 1-4 according to:
   - 0: concept not mentioned
   - 1: the concept is only mentioned
   - 2: the concept is mentioned and explained
   - 3: specific teaching actions are identified to address the concept
   - 4: intention to evaluate the concept was expressed

iv. Overall rank: each guideline is given an overall ranking:
   - High: if the guideline achieved ≥50% on all of the 3 scores above
   - Moderate: if the guideline achieved ≥50% on 2 of the 3 scores above
   - Low: if the guideline achieved <50% on 2 or 3 of the 3 scores above.

Guidelines for Alcohol and Sexual Health curriculum were scored separately.

In the chapters 1-4 of this thesis, a model of alcohol and sexual health literacy was developed according to research and the views of local experts. Part of the models identifies separate AHL and SHL competencies. These outcomes were used as the 'core competencies' against which the alcohol and sexual health education guidelines were evaluated. These are listed in Table 5.1.

Table 5.1 List of SHL and AHL Core Competencies

SHL core competencies	AHL core competencies
1. Pleasure/ establishing a healthy sex life. 2. Development of sexual identity. 3. Understanding and practicing consent. 4. Sexual agency and autonomy. 5. Protecting against contraction and transmission of STIs. 6. Protecting against unwanted pregnancy. 7. Healthy relationships. 8. Feeling That first intercourse occurred at correct time. 9. Emotional resilience. 10. Ability to identify and report abuse. 11. Understanding and respecting the choices of others. 12. Mental and physical wellbeing.	1. Reduced binge drinking and drunkenness. 2. Reduced alcohol related harm. 3. Reduced underage drinking. 4. Reduced frequency and quantity of drinking alcohol. 5. Delayed onset of alcohol use. 6. Understand and respect the choices of others. 7. Responsible enjoyment. 8. Autonomy of choice. 9. Mental and physical wellbeing.

5.4 Results

5.4.1 Tables and Figures

Table 5.2 Results of Core Content analysis of Sexual Health Education Guidelines

Country	**Document Title**	**CC coverage* (Missing concepts have been omitted from table)**	**CC quality (of core concepts mentioned)**	**Vulnerable Group coverage**	**Overall rank**	**Other concepts from SHL model mentioned**
Australia (Australian Curriculum, n.d.)	Health and Physical Education	Total: 9/12	Total: 36/36	3/10 Age Culture Sexual orientation	Moderate	Communication skills Critical thinking Literacy Mental wellbeing Romantic partners
		2	4			
		3	4			
		4	4			
		5	4			
		6	4			
		7	4			
		9	4			
		11	4			
		12	4			

Country	**Document Title**	**CC coverage* (Missing concepts have been omitted from table)**	**CC quality (of core concepts mentioned)**	**Vulnerable Group coverage**	**Overall rank**	**Other concepts from SHL model mentioned**
Canada (Public Health Agency of Canada, 2003)	Canadian Guidelines for Sexual Health Education	5/12	5/20	6/10 Age Disability Race Religion SES Sexual identity	Low	Critical thinking
		2	1			
		3	1			
		4	1			
		7	1			
		11	1			
Czech Republic (VÚP, 2007)	Framework Education Programme for Basic Education	Total: 4/12	Total: 4/16	0/10	Low	Mental wellbeing Self-efficacy Self-regulation
		4	1			
		7	1			
		12	1			

Country	**Document Title**	**CC coverage* (Missing concepts have been omitted from table)**	**CC quality (of core concepts mentioned)**	**Vulnerable Group coverage**	**Overall rank**	**Other concepts from SHL model mentioned**
Ireland (National Council for Curriculum and Assessment, n.d)	Guidelines for SPHE (Social, Personal and Health Education)	Total: 8/12	Total: 24/32	3/10 Age Culture Sexual identity	Moderate	Communication skills Critical thinking Emotional intelligence Information processing Mental wellbeing Parental influence Peer influence Romantic partners Self-regulation
		2	3			
		4	3			
		5	3			
		6	3			
		7	3			
		8	3			
		10	3			
		11	3			

Country	**Document Title**	**CC coverage* (Missing concepts have been omitted from table)**	**CC quality (of core concepts mentioned)**	**Vulnerable Group coverage**	**Overall rank**	**Other concepts from SHL model mentioned**
New Zealand (Ministry of Education New Zealand, 2015)	Sexuality education: A guide for principals, boards of trustees, and teachers	Total: 9/12	Total: 18/36	3/10 Gender Religion Sexual identity	Moderate	Critical thinking Health services Mental wellbeing Parental influence Peer groups Physical wellbeing Romantic partners
		2	2			
		3	2			
		4	2			
		5	2			
		6	2			
		7	2			
		10	2			
		11	2			
		12	2			

Country	**Document Title**	**CC coverage* (Missing concepts have been omitted from table)**	**CC quality (of core concepts mentioned)**	**Vulnerable Group coverage**	**Overall rank**	**Other concepts from SHL model mentioned**
Philippines (Republic of Philippines Department of Education, 2018)	Policy Guidelines on the Implementation of Comprehensive Sexuality Education	Total: 5/12	Total: 10/20	4/10 Age Culture Gender Sexual identity	Low	Communication skills Emotional intelligence Health services Motivation Romantic partners Self-efficacy
		2	2			
		5	2			
		6	2			
		7	2			
		10	2			
Sweden (Skolverket, 2014)	Sex Education: Gender equality, sexuality and human relationships in the Swedish Curricula	Total: 4/12	Total: 4/16	7/10 Disability Ethnicity Gender Religion SES Sexual Identity	Low	
		2	1			
		5	1			
		6	1			
		11	1			

Country	**Document Title**	**CC coverage* (Missing concepts have been omitted from table)**	**CC quality (of core concepts mentioned)**	**Vulnerable Group coverage**	**Overall rank**	**Other concepts from SHL model mentioned**
England (Department of Education, 2019)	Relationships Education, Relationships and Sex Education and Health Education	Total: 9/12	Total: 18/36	7/10 Age Culture Disability Gender Race Religion Sexual identity	Moderate	Health services Media Parental influence Peers Romantic partners
		3	2			
		4	2			
		5	2			
		6	2			
		7	2			
		10	2			
		11	2			
		12	2			

*Competencies numbered according to Table 5.1

Figure 5.2 SHL Core Competency (as listed in Table 6.1) coverage in Sexual Health Education Curriculum Guidelines

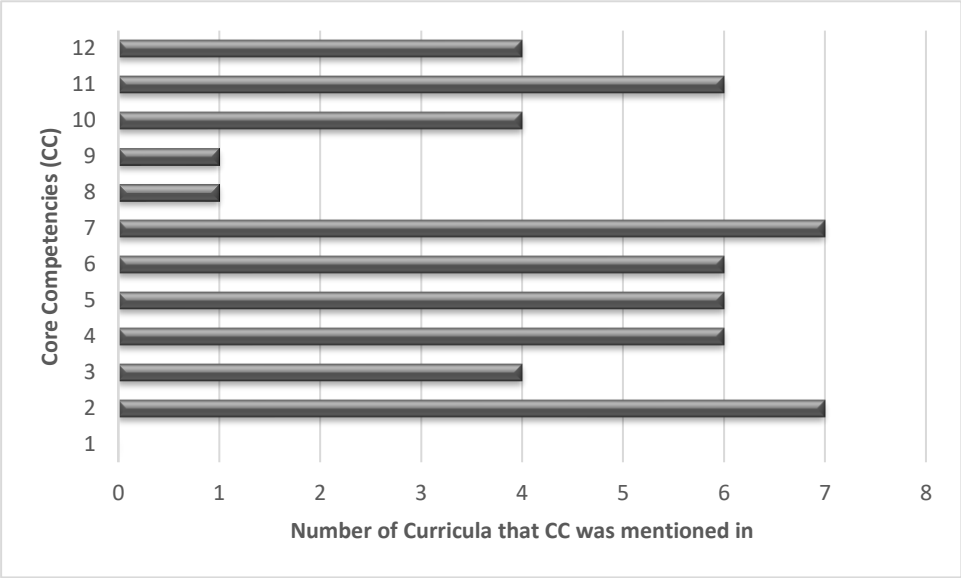


Figure 5.3 Vulnerable Group coverage in all Sexual Health Education Curriculum Guidelines

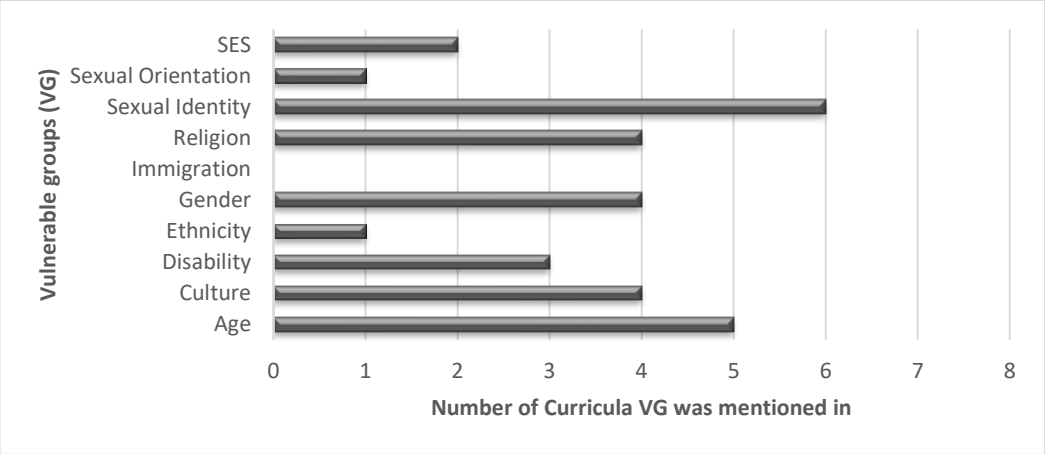


Figure 5.4 Summary of other factors from SHL models mentioned in Sexual Health Education Curriculum Guidelines

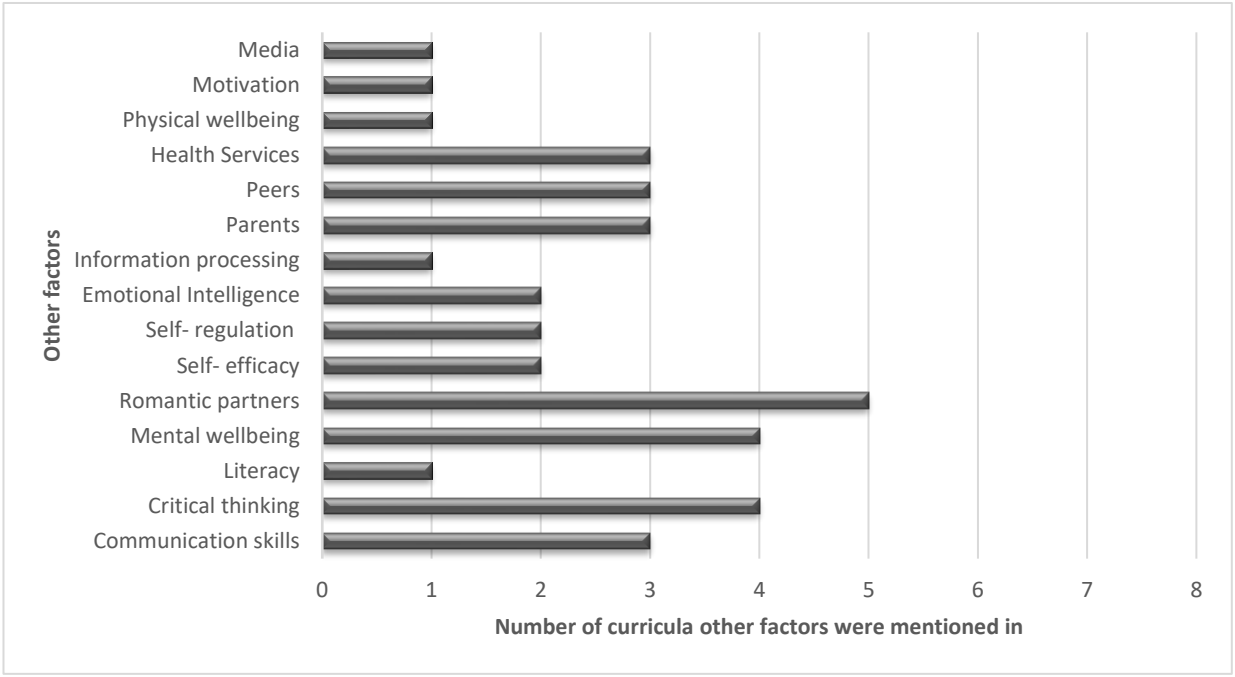


Table 5.3 Results of Content analysis of Alcohol Health Education Guidelines

Country	Document Title	CC coverage*	CC quality	Vulnerable Group coverage	Overall rank	Other concepts from SHL model mentioned
Australia (Australian Curriculum, n.d.)	Guidelines for Health and Physical Education	Total: 4/9	Total:16/16	2/10 • Age • Cultural diversity	Low	• Communication skills • Critical thinking • Literacy
		2	4			
		6	4			
		8	4			
		9	4			
Canada	The Government does not provide national curriculum guidelines for substance use/ alcohol education in schools however, provincial guidelines exist.					
Czech Republic (VÚP, 2007)	Framework Education Programme for Basic Education	Total: 1/9	Total: 1/4	0/10	Low	• Self-efficacy • Self-regulation
		2	1			

Country	Document Title	CC coverage*	CC quality	Vulnerable Group coverage	Overall rank	Other concepts from SHL model mentioned
Ireland (National Council for Curriculum and Assessment, n.d.)	Guidelines for SPHE (Social, Personal and Health Education)	Total: 4/9	Total: 12/16	1/10 • Age	Low	• Communication skills • Critical thinking • Emotional intelligence • Information processing • Parents • Peers • Self-regulation
		2	3			
		6	3			
		8	3			
		9	3			
New Zealand (Ministry of Education New Zealand, 2007)	General curriculum guidelines	Alcohol/ substance use is not specifically mentioned in the guidelines although there are references to teaching students how to make healthy and responsible decisions.				
Philippines (Republic of Philippines: Department of Education, 2018)	Preventive Drug Education Program Policy for Curriculum and Instruction	Total: 1/9	Total: 1/4	0/10	Low	
		2	1			

Country	**Document Title**	**CC coverage***	**CC quality**	**Vulnerable Group coverage**	**Overall rank**	**Other concepts from SHL model mentioned**
Sweden (Skolverket, 2018)	Curriculum in the compulsory school	Total: 2/9	Total: 2/8	1/10 • Age	Low	
		2	1			
		9	1			
England (Department of Education, 2019)	Relationships Education, Relationships and Sex Education and Health Education	Total: 2/9	Total: 4/8	7/10 • Age • Culture • Disability • Ethnicity • Gender • Religion • Sexual identity	Moderate	• Health services • Media • Parents • Peers
		2	2			
		9	2			

*Concepts numbered according to Table 5.1

Figure 5.5 AHL Core Competency (as listed in Table 6.1) coverage in all Curriculum Guidelines

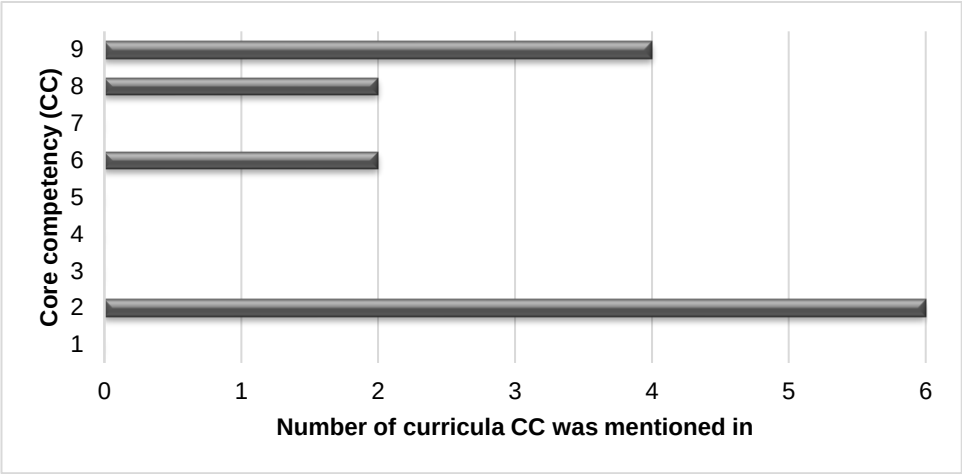


Figure 5.6 Vulnerable Group coverage in all Alcohol Education Curriculum Guidelines

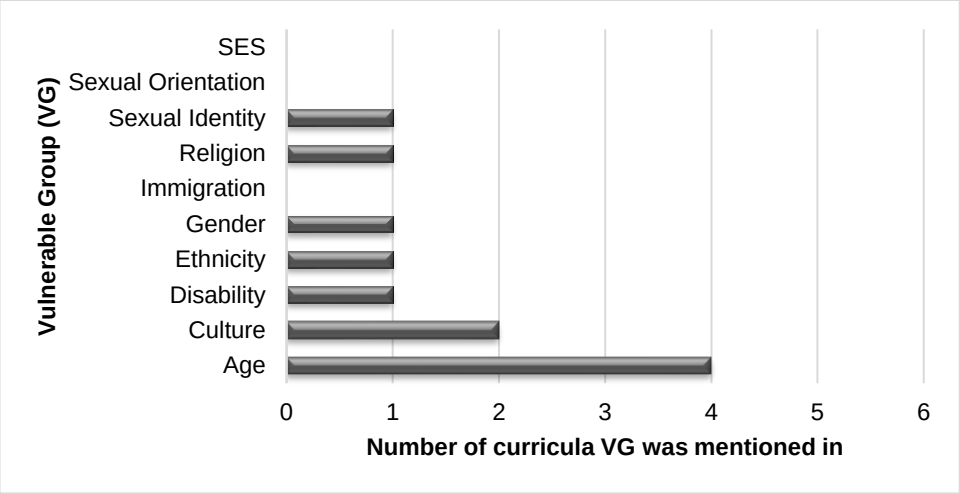
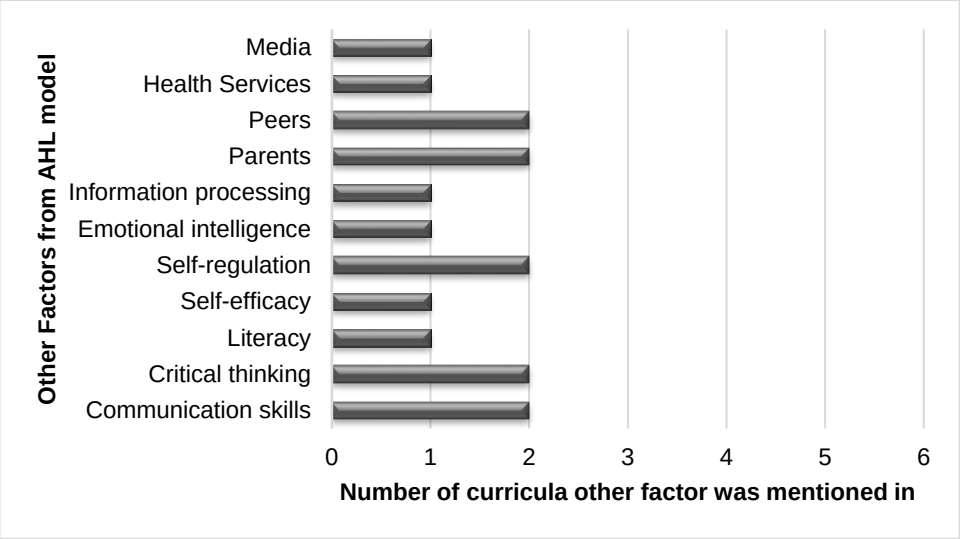


Figure 5.7 Summary of other factors from AHL models mentioned in Alcohol Education Curriculum Guidelines



5.4.2 Summary of Results

5.4.2.1 Sexual Health Statistics and Legislation (See appendix M)

Seven of the eight countries included in this study showed a general trend of decreases in teen pregnancy and all showed patterns of increase in STI notifications over the past decade. Data from most of these countries indicate that young people were disproportionately affected by STIs study. Conversely, The Philippines shows a trend of increasing teen birth rates over the past decade. Legislation related to sexual health seemed to be similar in all countries; however, there were some notable exceptions. The Philippines and Czech Republic lack a national Government strategy or policy that addresses sexual health. The age of consent in the Philippines is much lower than the other countries, at just 12 years of age compared to ages 15-17 in the other countries. State funded (free) contraception is not available to the general public in Ireland, Australia and Canada. All Governments make provisions for family planning clinics and paid parental leave. Laws restricting sexually explicit content available on media exist in all countries aside from the Philippines. Australia and Canada where the only countries of the eight where sexual health education are not mandatory. The responsibility of providing sexual health education and sexual health education guidance in Canada and Australia resides with state or provincial governments. This means that some states/provinces do provide sexual health education in schools and others can choose to omit it from the curriculum. Reports of opposition to sexual health education in schools are present in all countries, attributed to conservative or religious groups.

5.4.2.2 Sexual Health Education Curricula

Among the curricula analysed, none of the curricula scored an overall rank of 'High'. However, in this analysis, Australia scored the highest rank (see Table 5.2). With regards to curriculum guidelines for alcohol education, Competencies: 2 and 7 were mentioned the most among all the curricula and competencies 8 and 9 were mentioned the least (see Figure 5.2). Sexual identity was the most mentioned concept with regards to vulnerable group coverage and ethnicity was described the least. Immigration was not mentioned in any of the curricula (see Figure 5.2). Various other factors from the SHL models were mentioned in the curricula; romantic partners, mental wellbeing and critical thinking were among the concepts mentioned the most (see 5.2). All competencies present in the curricula were also present in the SHL model. Consequently, there were no additions to consider for the SHL model.

5.4.2.3 Alcohol Use Statistics and Legislation (see Appendix M)

A majority of the countries (6/8) in this study show the same trend. Abstinence among young people is increasing; however, many young people still engage in risky drinking behaviors. Abstinence among youth seems to be decreasing in the Philippines and remains stable in the Czech Republic. However, the Philippines also has the lowest percentage of teen drinkers and young people who engage in heavy episodic drinking of all the countries in this study. Ireland has the highest percentage of young drinkers and youth engaged in heavy episodic drinking.

All countries have national policies or strategy related to alcohol. All countries had similar legislation concerning duty and legal minimum age of drinking. Restrictions on the sale of alcohol existed in all countries apart from Australia. Sweden has the strictest policies surrounding commercial sale of alcohol. Canada, New Zealand and the Philippines do not enforce regulations on the advertising of alcohol. Alcohol education is only mandatory in the Czech Republic and the Philippines. Evidence of opposition to alcohol education in schools was not found regarding any of the countries in this study.

5.4.2.4 Alcohol Health Education Curricula

Of the six countries with national curriculum guidelines relating to alcohol health education, England scored the highest overall rank, being the only guideline to score 'moderate' (all others were 'low') (see Table 5.5). Despite few core concepts being covered, the guidance referred to more vulnerable groups than the other guidelines in this study. The curricula from the Czech Republic had the worst overall score of those analysed (see Table 5.5). In terms of core competencies, competency 2 was mentioned the most in the curricula. Competencies 1,3,4,5,7 were not mentioned in any of the curricula. Age was accounted for most frequently within the curricula in terms of vulnerable group coverage. Immigration, sexual orientation and SES were not mentioned in any curricula. The main 'other factor' mentioned in guidelines from the AHL model was 'mental wellbeing'.

Generally, guidance for alcohol education appeared less developed than guidance for sexual health education, often covering fewer objectives, in less detail than in sexual health guidelines. In all countries analysed, guidelines for alcohol health education tended to be part of a wider health education guidance or included as part of a larger substance abuse curriculum which focused mainly on drug use (see Table 5.5). All competencies present in the curricula were also present in the AHL model. Consequently, there were no additions to consider for the AHL model.

5.5 Discussion of Results

5.5.1 Findings from Curriculum Analysis

In this study, Australia was found to have the most robust guidelines for sexual health education. These guidelines covered the most core concepts, in greatest detail, with reference to teaching actions and evaluation. Examples of teaching actions centered mainly on the use of open discussion to teach specific skills related to each objective e.g., critical thinking. However, educators are still given the flexibility to teach sexual health education as they see fit. Evaluation frameworks are provided to guide educators on the assessment of written work and demonstrated behavior. Samples of both are also provided. Part of the reason that this guideline is more detailed is because it is available online. This is advantageous in allowing the guidelines to be dynamic. It also allows for the storage and easy access of a large amounts of supporting documents (e.g., examples of marking schemes and student work) in a range of formats (e.g., video). This means that examples of good practice in teaching and student learning can be shown in context, which seems particularly useful for a skill-based subject.

When analyzing the sexual health education curricula collectively, the following objectives were identified most frequently:

- CC 2: Development of sexual identity
- CC 7: Ability to initiate and maintain healthy relationships.

This is particularly interesting as although development of a sexual identity was mentioned as an objective, the curricula very rarely mentioned making provisions in content for differing sexual orientations which is obviously related to sexual heath and SHL. Unfortunately, this may reflect the fact that in many countries, there is still strong opposition towards LGBTQIA+ (Lesbian, Gay, Bisexual, Trans*, Queer/Questioning, Intersex, other) inclusive sexual health and relationships education (Cabreros, 2012; Talukdar, Aspland and Datta, 2013). Core competency 6 was also mentioned frequently, which is unsurprising considering that in many countries sex education has developed to focus on relationships such as in the English curriculum where it is called RSE.

The objectives identified least frequently were:

- CC 1: Pleasure/ establishing a healthy sex life
- CC 8: Feeling that first intercourse occurred at correct time.
- CC 9: Emotional resilience.

These objectives may receive less focus in curricula as evidence from Chapter 4 (p.106) and section 5.5.2 suggests, the curricula can largely still be risk-focused, focusing on pregnancy and STI prevention rather than pleasure.

Sexual orientation, ethnicity, and immigration (not mentioned at all) were among the least explored concepts in vulnerable group coverage. This is surprising considering that worldwide, we are experiencing the highest rate of human migration on record (UN Migration Agency,2018). Generally, the curricula did not account for the specific impacts that race and immigration can have on sexual health literacy. However, half of the curricula mentioned culture indicating some inclusive thinking. However, it is possible to belong to a culture that is separate to one's ethnicity. Other factors from the SHL model that were most frequently described in the curricula included romantic partners and mental wellbeing. Many of the curricula in this study were influenced by the World Health Organization's Standards for sexuality education which identifies wellbeing as a key area of student development (WHO and BZgA, 2010). Further, in recent times mental wellbeing has become an area of increased focus in schools in Europe with many recognising the role of schools in supporting and developing wellbeing in students (European Commission, 2017).

Regarding curriculum guidelines for alcohol education, English guidelines for alcohol education had the highest overall rank, mainly because this curriculum addressed more vulnerable groups than all the other curricula. Despite receiving the highest overall rank, very few competencies from the AHL model were identified and specific teaching actions and/or evaluation methods were completely omitted. Consequently, it is difficult to derive any particularly useful aspects of the guidance.

Concept coverage analysis in all curricula showed the following objectives were most covered:

- CC 2: Reduced alcohol related harm
- CC 9: Mental and physical wellbeing.

The following objectives were not found in any of the curricula:

- CC 1: Reduced binge drinking and drunkenness
- CC 3: Reduced underage drinking
- CC 4: Reduced frequency and quantity of drinking alcohol.
- CC 5: Delayed onset of alcohol use.
- CC 7: Responsible enjoyment.

As mentioned previously mental wellbeing is becoming an area of focus in schools and this is consequently reflected in alcohol and sexual health education guidelines. Five of the core competencies from the AHL model were not mentioned in any of the curricula. This may be because alcohol curricula in general was far less developed than sexual health curricula. Analysis of vulnerable group coverage indicated that the curricula often accounted for age but not sexual orientation, SES and immigration. This indicates a general lack of understanding of how these factors can intersect and determine behaviours and attitudes related to alcohol use. Finally, the influence of parents and peers, the ability to self-regulate, think critically and communicate were the most commonly mentioned factors from the AHL model, aside from the objectives.

Additionally, the curricula guidelines for alcohol health curricula seemed to consider the influence of external factors (e.g., parents) more than the sexual health curricula. However, all external factors were only mentioned briefly even though findings from Chapter 2 (sections 2.4.1 and 2.5.1) indicated that these factors can significantly impact adolescent AHL and SHL. This will be explored further in Chapter 6 (section 6.4). The sexual health curricula placed more emphasis on personal skills and explored the effect of belonging to vulnerable groups to a greater extent. Curriculum guidelines for alcohol education are vastly underdeveloped when compared to sexual health. This was stated by the participants in Chapter 4 (p.122) and is further evidenced by Table 5.2. It is unclear why this is the case; especially as sexual health education has historically faced more opposition within the school curriculum. It could be suggested that there may be less focus on alcohol education because, at least in Europe, rates of alcohol use are decreasing (WHO,2018). However, greater focus on sexual health curriculum is evident even in the one country within this study where rates of alcohol use are increasing (Philippines). Further, evidence from Table 5.2 still shows that although more individuals choose to abstain from alcohol, risky drinking behaviours are still prevalent in youth. It is unclear from the statistics alone how well the curriculum in each country is implemented as there seem to be similar trends in sexual health and alcohol use statistics in all the countries in the study. It is therefore necessary to explore and discuss the implications of research focused on student and teacher views of curriculum.

In summary this chapter compared curriculum guidelines in England with other countries that have similarly adopted compulsory sexual health and/or health education. None of the guidelines reviewed contained all the core competencies identified in models of AHL and SHL. This could be because education in alcohol and sexual health, internationally, is still focused on building knowledge over competence. Although there was some evidence (particularly the curriculum form Australia) to indicate that some are beginning to move towards building competencies over factual

knowledge. The findings also indicated that many other factors that are pertinent to AHL and SHL (e.g., external, and individual factors) identified in the models were left out of curriculum guidance. Coverage of vulnerable groups across the curricula were also low, further implying that even when good information is given, it is not relevant to all students. This could be because the curriculum guidance was not intended to be overly prescriptive, leaving much of the lesson design and flexibility to educators. However, this could also be due to cultural views particularly regarding sex and sexuality particularly in countries where sexual health education was opposed. Policy makers may have consciously omitted content deemed culturally inappropriate.

The lack of core competency, vulnerable group and other factor coverage may also highlight those gaps that still exist research and policy practice due to a lack of policy relevant research or lack of research driven policy design. Part of the reason that the models of AHL and SHL were developed are to address this gap and provide a framework from which curricula could be designed. However. It should be considered that even if a curriculum existed that considered all the factors highlighted in the AHL and SHL models, this might not necessarily translate to practice, and if it did, it would still be difficult to measure the impact. The findings from Chapter 4 indicated that educators felt the need for more prescriptive guidance from the Government but also wanted more support with resources and training. If educators lack the training, lesson time and confidence to deliver RSE and HE, then the quality of curriculum guidance will make little difference. This is highlighted by the system of sexual health education in the Netherlands. The Netherlands is among some of the countries that are internationally recognised as having a high standard of sex education in schools (Krebbekx,2018). However, the Dutch Government do not provide any specific curriculum guidance for sexual health education (Krebbekx,2018). Research has identified that could be since Dutch educators are more supported with more training and an infrastructure of positive (as opposed to abstinence focused) policies and cultural beliefs pertaining to alcohol and sexual health (O'Brien, Hendriks and Burns, 2020; Weaver, Smith & Kippax, 2005). Further, it is difficult to ascertain the impact and quality of sexual health and alcohol health education as internationally as statistics are impacted by a large variety of factors including legislation and culture (see section 5.4). Therefore, it is important that effective curriculum guidance is supported with methods of evaluation.

It might be argued that the current UK RSE/HE curriculum is intentionally vague, allowing teachers more freedom and flexibility in how these subjects are taught. However, as discussed previously (section 4.6) there are many pressures that prevent educators from teaching the subject to a high standard and through the development of competencies. Educators clearly rely on the

curriculum guidance because of the pressures in the system that cause them to feel unqualified and under pressure. This is worsened by the finding in this study that the guidance for RSE fails to cover all of the core competencies identified as integral to positive health behaviours through research and experience. Further, the corresponding Ofsted framework is equally vague on the evaluation of RSE/HE with an emphasis on building positive behaviours in students. Realistically, Ofsted inspectors will be unable to observe and measure the competencies associated with alcohol and sexual health in students in a school setting, neither would they want to due to the same pressures from cultural taboos that teachers experience. So, given that educators are struggling with the teaching of RSE and HE, that the guidelines they are given are not fit for purpose and the way that the subject will be evaluated is unclear, it seems unlikely that the mandatory status of the subject will have the necessary impact. These issues will be discussed in more detail in Chapter 6 (Discussion).

Chapter 6 Discussion

This chapter will begin with a summary of the findings of this thesis, addressing how the research questions were answered. This chapter will also explore the implications of these findings and the strengths and limitations of the research.

6.1 Summary and Discussion of Findings

The following research questions were addressed in this thesis:

1. What competencies do international experts (researchers and policy makers) believe are needed for an adolescent to be literate in alcohol and sexual health? (Chapters 2, 3 and 5)

2. How can existing models of adolescent health literacy and health behaviour be adapted to provide a framework for models of AHL and SHL? (Chapter 3)

3. How well do existing measures assess health literacy in adolescents? (Chapter 3)

4. What competencies do local PSHE teachers believe are needed in order for an individual to be health literate in alcohol and sexual health? (Chapter 4)

5. What are the barriers and facilitators to delivering these competencies, according to expert secondary teachers in the UK? (Chapter 4)

A chapter summary and the main findings of this thesis are summarized in this section. The study began by identifying issues with alcohol and sexual health that are prevalent in adolescents in the UK today. Health literacy describes a range of skills and competencies that empower individuals to make autonomous and informed decisions about health (Nutbeam 2000). Consequently, AHL and SHL are necessary to empower adolescents to make better decisions about issues that most affect them today. Currently, aside from parents, schools are thought to be the best placed to support AHL and SHL development in adolescents due to their access to students and ability to provide accurate information. Indeed, as of September 2020, changes to legislation in England meat that RSE and HE will be compulsory in all schools (DfE, 2018).

To aid educators in developing AHL and SHL in adolescents, it was important to define these concepts and understand the competencies and other associated contextual factors that influence AHL and SHL. In Chapter 1, AHL and SHL were defined. Chapter 2 addressed research

question 1 by exploring the personal factors, external factors and competencies associated with adolescent AHL and SHL according to researchers and UK Government Strategy (policy makers). The factors identified in this chapter were later integrated with the model that was developed and further factors identified in Chapter 3. The results from Chapter 2 confirmed that researchers have identified many factors (external and individual) that are associated with alcohol and sexual health in adolescents. However, this chapter also highlighted that while these factors have been identified, the amount of impact that these factors have on the development of alcohol and sexual health and the relationship between factors is still unclear. There are several possible explanations for this result, one being that the impact of certain external variables for example might be vary depending on individual factors, attitudes, and experiences, which would make research in this area difficult to generalize to a wider population. Additionally, this phenomenon may exist is due to the interests of researchers within alcohol and sexual health. Health policy and research tends to focus on intervention rather than prevention, perhaps because intervention is easier to measure (Department of Health and Social Care, 2018). Consequently, identifying factors (and interactions between factors) that lead to poor health outcomes receives less attention (Department of Health and Social Care, 2018). Regardless of the causes, there is abundant room for further progress in determining in how the external and individual factors identified in models of AHL and SHL interact to determine AHL and SHL.

Considering the findings from Chapter 2, it was important to determine whether current models and measures of adolescent HL could likewise be adapted to evaluate AHL and SHL. Chapter 3 addressed research questions 2 and 3 by exploring models of HL through literature review and evaluating current measures of adolescent HL through a systematic review. Manganello's (2008) model of adolescent HL was found to be the most developed of the HL models reviewed in this Chapter. This model was integrated with findings from Chapter 2 to form a basic structure for new adolescent AHL and SHL models. The results from the systematic review showed that current adolescent HL measures do not account for more than basic health literacy and numeracy skills and were at best only measures of functional literacy. Nevertheless, the HELMA measure was found to be the most robust measure of adolescent HL (Chapter 3). Through the review of measures, further competencies that influenced general adolescent HL were identified and added to the models of adolescent AHL and SHL such as: literacy and numeracy skills, and the ability to understand and evaluate information. Surprisingly, the models and measures of HL reviewed did not use or incorporate factors from theoretical models of health behaviour. This was surprising considering that the aim of health literacy is directly related to the improvement or maintenance of health behaviour (see Chapter 1 Section 1.4). The reason for this was unclear and highlights a significant

gap in models of health literacy. Findings from this chapter highlight significant areas to progress future research. Both models and measures in adolescent health literacy were found to lack theoretical frameworks and substantiation with research. Although definitions of health literacy (Chapter 1) were found to incorporate multiple skills and competencies, this was not reflected in the measures and perhaps this is due in part to the fact that it is easier to measure knowledge than competence. This problem of measuring competence was manifested throughout the thesis.

With the basic framework of AHL and SHL complete, it was necessary to examine whether educators were willing and able to deliver these competencies in a school environment. Chapter 4 addressed research questions 4 and 5 and reported on an empirical qualitative study of PSHE teachers. The study explored whether the teachers believed that the models of AHL and SHL were appropriate and whether they believed they could be utilized to enable students to achieve the competencies associated with AHL and SHL during PSHE/RSE lessons. Generally, the model was well received but a few additions were made to the model based on the suggestions of these expert teachers, including responsible enjoyment, and respecting the choices of others (Chapter 4, section 4.4.4). Barriers to teaching the competencies and skills identified in the AHL and SHL models included: lack of guidance, training and lack of time and importance given to the subject (Chapter 4, section 4.4.5). It seemed that these barriers sometimes intensified the feeling that educators are not the best placed to deliver AHL and SHL skills and competencies. Further to this, there was some indication that alcohol received less consideration in the curriculum than sexual health. Although compulsory RSE was generally identified as a positive step, there were fears that other important subjects such as alcohol use would be displaced in favour of more time spent on RSE.

The findings around the preparedness and confidence of teachers in teaching RSE are in line with findings from the Sex Education forum survey on statutory RSE (2018). Importantly, this study also delved into barriers educators perceived towards developing the identified competencies in alcohol and sexual health. Importantly, educators in the study felt that it might not be their place to develop competencies identified in AHL and SHL models and found it difficult to imagine how these might be assessed without breaking a professional barrier with students. The present results are significant because research from teachers, students and even Ofsted evaluations have emphasized that alcohol and sexual health education often focus on the facts without considering context and pleasure. Thus, it was surprising that when shown models of AHL and SHL, driven by multiple internal and external factors and competencies rather than just knowledge, educators felt so strongly that they could not deliver this form of education. As mentioned previously, this might have been due to barriers previously identified such as embarrassment, lack of training and

support. The role of educators in delivering effective RSE and HE lessons needs to be explored further, particularly if they are to be evaluated on their ability to deliver such lessons without consideration of the barriers to delivering AHL and SHL competencies. With compulsory RSE and HE it appears that most of the Government's alcohol and sexual health education strategy now rests on education, particularly due to cuts in funding to adolescent health services. However, these strategies do not account for the many barriers that educators currently face in the UK.

Further, the study also highlighted that alcohol was given less importance in the curriculum compared to sexual health education. This finding was also supported in Chapter 5 and certainly highlighted in research in Chapters 2-3 where there was more focus on facts in alcohol compared to more positive approaches to sexual health education focusing on pleasure and positive experiences. This is surprising given the fact that alcohol use is shown to interact with many other health outcomes. Alcohol education was considered as a distinct topic and although this is important, it is also important to discuss alcohol and substance use as a contextual and behaviour influencing factor in health education. It is possible that this finding can be explained in part due to the rising trends in young people who are choosing to abstain from alcohol. There may be less focus on alcohol use in policy and strategy because statistical trends highlight more worrying trends regarding sexual health behaviour. The trend for increased abstinence from alcohol in young people may be explained by several factors such as increased focus on physical health and increased access to and use of other substances (McCabe et al., 2021). Thus, it is important that alcohol education is still given focus within the curriculum as the increase in alcohol abstinence does not equate to increased AHL.

With these findings in mind, Chapter 5 investigated to what extent Government curriculum guidelines for alcohol and sexual health across 8 countries aligned with the competencies identified in the AHL and SHL models. This study addressed research question 1. The curriculum guidelines of eight countries, including England, were compared to place the new guidelines in an international context and identify any additional scope for improvement. Using a method of curriculum analysis designed by Ivanova, Draebel and Tellier (2015). The study found that curriculum guidelines in all eight countries for RSE/SRE were much more detailed than curriculum guidelines for alcohol/substance use education. Although none of the curriculum guidelines ranked highly, Australian sexual health education guidelines and English alcohol education guidelines were among the best. Nonetheless, as discussed in Chapter 5 section 5.5.1, the guidelines covered few core competencies and did not identify specific teaching actions for educators. English RSE guidelines could be improved with the addition of teaching actions and assessment methods, as illustrated in

the Australian sexual health education guidelines. These results were anticipated given the findings from Chapter 4. Curriculum guidelines tended to be general possibly to avoid being overly prescriptive and to allow educators more flexibility in lesson design. On the other hand, this study importantly highlighted that there is still a significant gap between what is known in research and its translation into policy. The reviewed curricula in alcohol and sexual health education internationally tended to be risk or abstinence focused. Moreover, the quality of guidance clearly did not translate into practice as the UK scored highly with curriculum guidance in alcohol education even though in Chapter 4, teachers highlighted that alcohol education focused mainly on facts. Further evidence from the Netherlands highlighted that curriculum guidance would only be effective with the support of policies that gave educators the resources, time, and expertise to teach such subjects. The translation of policy into effective practice also relies on cultural views on sensitive subjects and the role of educators in building competencies around these.

The extent to which the research questions were addressed successfully by this thesis varied. Some research questions could be answered more clearly than others. Research question 1 was addressed in Chapters 2, 3 and 5. Chapters 2 and 3 focused mainly on the competencies that researchers believed were associated with AHL and SHL. Chapter 5 focused on the competencies that policy makers believed were associated with AHL and SHL. Table 3.5 summarises the wide range of findings from Chapters 2 and 3. Chapter 5 explored alcohol and sexual health education policy specifically. As mentioned in sections 5.4.2.2 and 5.4.2.4., no new competencies were identified from the curricula that were absent from the AHL/SHL models. To that extent makers tended to agree with the competencies identified in chapters 2-4 of this thesis, however, the guidelines tended to only mention a few of the competencies. Not one government guideline for alcohol or sexual health education examined in chapter 5 mentioned all the competencies detailed in the AHL/SHL models. The thesis identified the competencies associated with AHL/SHL according to researchers in greater detail than those of policy makers. Although policy guidelines were explored in Chapter 5, this was dependent on the availability of a written policy in alcohol and sexual health education specifically. As a result, research question 1 was answered in greater detail with regards to the competencies identified by international researchers than international policy makers.

The extent to which research question 1 was addressed by this thesis will now be explored. Although a range of competencies and internal and external factors were identified in relation to alcohol and sexual health from the point of view of researchers, the findings of much of the research were at times contradictory. For example, although the influence of factors such as communication

skills was clear, it was difficult to ascertain how much impact this had on AHL or SHL in adolescents and whether any of the factors identified were more or less important than the others. It was also difficult to deduce whether any of the factors identified in the AHL/SHL model interacted. It must also be considered that due to the methods employed in answering research question 1, that the findings were largely based on findings that were published. As researchers and policy makers (international experts) were not interviewed, it is difficult to determine whether all the factors that significantly impact AHL/SHL in adolescents are included in the models. The methods employed in Chapter 2 assumed that if a factor was significantly researched, (e.g., parental influence) that it was pertinent to AHL and SHL and did not account for any other factors that may have received less attention within research. In fact, in Chapter 4, local teachers described new competencies that were not explored in the extant literature. As a further point, many of the studies focused on factors that impact negative alcohol and sexual health behaviours i.e., how internal, and external factors impact risky behaviours. Few studies focused on how external and internal factors could encourage positive sexual health and alcohol-based competencies (e.g., practicing consent and respecting the choices of others). Thus, although research question 1 was explored to some degree, the findings reflected the published extant literature and consequently cannot be considered a total reflection of the views of policy makers and researchers.

Research questions 2-5 were somewhat easier to address. Research question 2 was mainly explored in chapter 3 of this thesis. Manganello's (2008) model of adolescent health literacy seemed the most developed of the models available. Therefore, it was used as a basic framework for developing the AHL/SHL models. Manganello's (2008) HL model was adapted to form models of adolescent AHL and SHL through addition of the specific internal and external factors and competencies identified as associated with AHL and SHL in Chapter 2 and 3. Additionally, research question 3 was addressed in Chapter 3. In summary, current measures of adolescent health literacy cannot be adapted to form robust measures of AHL and SHL. This is due in part to the findings from Chapter 2 and Chapter 3 (section 3.2) which showed that HL (and AHL/SHL) was dependent on a range of external and internal factors that were not all accounted for in the HL measures. Further, it is difficult to accurately evaluate competencies in self-report, questionnaire methods.

Research questions 4 and 5 were explored thoroughly in Chapter 4. Overall, local teachers felt that the initial models designed in chapters 2 and 3 were accurate representations of AHL and SHL in adolescents and suggested some additions which are described in Chapter 4, section 4.5.3. Barriers and facilitators to delivering alcohol and sexual health education were identified in section 4.5.1. Chapter 4 highlighted the fact that teachers often felt that they the lacked guidance and

resources (training and time) to effectively implement alcohol and sexual health education in schools.

Considering the breadth of findings from this thesis, the research questions posed in Chapter 1 were answered, albeit to varying degrees. The original contribution to the field of knowledge from this thesis are mainly related to the development of research and theory-based models of AHL and SHL. The models are significant because they identify the many factors and competencies associated with AHL and SHL from new and existing research, in the context of compulsory RSE and HE education in the UK. Through the identification of the factors that impact AHL and SHL and associated competencies, the models provide a robust foundation for effective intervention in alcohol and sexual health. Importantly, through exploratory qualitative study and curriculum guidance analysis, it was revealed that educators, in the UK, do not feel currently feel able to deliver and assess the competencies related to AHL and SHL due to a range of barriers such as embarrassment, views on professionalism and lack of training, guidance and curriculum time. If an ideal AHL and SHL content-based curriculum could be designed, then the following points warrant further discussion:

- Are school-based educators able to teach AHL/SHL competencies?
- How can these competencies be assessed?

The following sections of this discussion will explore these questions in more detail.

6.2 Delivering and Assessing AHL/SHL Competencies in School

Traditional PSHE/RSE curriculums have focused on knowledge only methods and have consequently been inadequate in the views of stakeholders such as teachers and students in equipping young people with the skills they need to manage their health (Chapter 4, section 2.4; Chapter 5 section 5.5). Competency is identified as central principle within health literacy and thus in the development of AHL and SHL models. As mentioned in Chapter 4 section 4.6, moving towards a competency-based system of education would involve a complete change in pedagogy for educators that may be more used to traditional models of teaching. Ideal conditions for the delivery of CBE rely on educators skilled in identifying the needs of all students and students having the time to progress at their own pace (Sullivan and Burce, 2014). As highlighted in Chapter 4, teachers already struggle with lack of support, time, and workload. With these tensions present it is difficult to comprehend how AHL and SHL competencies can be delivered in the current school context.

Findings from Chapter 3 (section 3.3.3) of this thesis indicated that current measures of HL could not be adapted to realistically capture the breadth of factors that are required to achieve AHL and SHL, particularly skill-based competencies. These measures mainly relied on self-report methods. Studies in sexual health-based skills such as condom use application have shown that there can be significant disparities between perceived and actual skills (Sanders et al., 2012).

The Australian curriculum guidelines for sexuality education analysed in Chapter 5 (section 5.4.2), provides one potential example of how assessment could take place within a classroom setting. Students are expected to keep portfolios of work (which include reflections, learning-based exercises, etc) for Health and Physical Education which is assessed (Australian Curriculum, n.d.). Samples of work and marking guidelines are provided for educators within the curriculum guidance (Australian Curriculum, n.d.). The issue with this approach is that it suffers from many of the same limitations as a questionnaire/ survey approach in that it may not accurately be able to capture skills and behaviours in context. This method would also add to existing teacher workloads when educators already feel that their workload is high (see section 4.6). The other curricula examined in Chapter 5 (5.4) did not describe any assessment methods.

However, the assessment of more specific skills (e.g., responsible enjoyment) associated with AHL and SHL, may be impossible to demonstrate in the context of the school environment. Even skills that could be performed in an educational setting (e.g., understanding and respecting the choices of others) may cause some embarrassment if topics are sensitive in nature. Many studies have shown that students feel discomfort or embarrassment when discussing more sensitive issues (Pound, 2016). As discussed in Chapter 4 (section 4.5.1), educators cited feelings of embarrassment and discomfort as a barrier to teaching RSE/HE. This method would also rely on educator training to enable them to effectively demonstrate and assess a skill, which as discussed previously would require further investment in training.

Whilst AHL and SHL measures require further development, RSE/ HE lesson content will inevitably be assessed by Ofsted, particularly given the mandatory status of the subject. Part of the education inspection framework includes evaluative assessment of lesson content, implementation and impact on learners (Ofsted, 2019). The framework requires that *"teachers have good knowledge of the subject(s)"* (Ofsted, 2019, p9.) and further that *"the curriculum extends beyond the academic, technical or vocational. It provides for learners' broader development..."* (Ofsted, 2019, p9.). It is unclear how schools will be able to achieve an outstanding report in RSE/HE with limited resources and curriculum guidance that, as shown in Chapter 5, does not detail how particular competencies can be taught effectively. This also highlights a greater issue with the

assessment of skill-based or vocational subjects. Once assessment is introduced, it is often introduced as a method to evaluate the quality of teaching and student knowledge. However, as mentioned by teachers in Chapter 4 (section 4.4.3.1), existing teachers feel that they lack expertise in this subject area, mainly since training can be expensive and is arranged at the discretion of the school. Compulsory RSE/HE should be supported by compulsory teacher training if teachers will be assessed on their ability to teach the subject.

The introduction of a formal assessment method for RSE/HE could create more pressure as educators fear poor Ofsted reports if they do not follow the current curriculum guidelines closely. This may also mean that importance is placed on knowledge in RSE/HE as knowledge is easier to assess in students than skill, especially with the emphasis on the impact of the education inspection framework on test results: *"learners develop detailed knowledge and skills across the curriculum and, as a result, achieve well. Where relevant, this is reflected in results from national tests and examinations that meet government expectations, or in the qualifications obtained"* (Ofsted, 2019, p10). In the introductory chapter (Chapter 1, section 1.4) of this thesis, it was highlighted that Ofsted identified that traditional fact or knowledge-based approaches to teaching these subjects are insufficient for developing the skills and behaviours needed by students. This was further echoed by teachers who felt that the curriculum did not develop skills (section 4.4.3). Consequently, if an assessment/measure for AHL and SHL in adolescents is developed, it should focus on competency-based learning although this would be difficult to achieve through self-report. It should be used to inform better quality RSE/HE content development instead of forcing schools to adhere to rigid curriculum guidelines. There is also an overwhelming obligation on schools currently to be responsible for the development of AHL and SHL in adolescents. Section 4.4.3 showed that they often lack the resources (e.g., staff time) to implement RSE/HE effectively. In section 5.5 the findings suggested that many countries understood that 'external factors' such as parents and peers could impact AHL/SHL in students. However, these concepts were only briefly mentioned in terms of collaboration with schools. Accordingly, a more comprehensive approach to promoting AHL and SHL through the 'external factors' in the AHL/SHL models will now be considered.

6.3 Future directions for developing AHL/SHL

The final models of AHL and SHL (see Appendix N) indicate that many external factors aside from education can impact adolescent AHL and SHL. The curricula in Section 5.5.1 addressed some of these external factors, highlighting their importance the development of AHL/SHL in adolescents. It is therefore pertinent to consider how these other factors could be utilised in the UK to encourage

a more comprehensive approach for improving AHL and SHL in adolescents. This section of the discussion will explore how schools can strengthen their AHL/SHL curricula by addressing the 'External factors' shown in the AHL/SHL models (see Appendix N)

6.3.1 Media

There is some evidence to indicate that media literacy training can improve alcohol and sexual health knowledge and skills. Hindmarsh, Jones and Kervin (2015) conducted a systematic review of alcohol media literacy programmes in school settings. From the eight papers, they identified four core principles embedded within the programmes. The principles can be summarised as follows (Hindmarsh et al., 2015):

i. Understanding that media messages are constructed with different purposes and thus these messages may diverge from reality.
ii. Understanding the techniques used to make advertisements appealing.
iii. Understanding that the same message can be interpreted differently by different people.
iv. Identifying the true purpose of a media message.

Seven of the studies in this review recruited participants from the USA. The remaining study recruited participants from schools in Lagos. All the interventions focused on improving media literacy surrounding television and print advertisements. Results from the studies showed that participants in intervention groups performed better in media deconstruction skills and media literacy knowledge than non-intervention groups (Hindmarsh et al., 2015). Intervention groups also showed less interest in drinking alcohol and perceived more negative effects of alcohol use than non-intervention groups (Hindmarsh et al., 2015). Overall, the interventions seemed more effective with female students than male students; it is unclear why (Hindmarsh et al., 2015).

The effects of media literacy intervention on sexual health behaviour are less clear. Vahedi, Sibalis and Sutherland (2018) identified four studies (all conducted in USA) that evaluated the effects of media literacy intervention on risky sexual health behaviours in school. The interventions focused on identifying 'media myths' (on television and print advertisements). The studies reported positive effects within the intervention groups (Vahedi, Sibalis and Sutherland, 2018). Although these studies provide some evidence for media literacy interventions in school, there is a lack of longitudinal data to illustrate the long-term effects of such programmes (Bergsma and Carney, 2008). Moreover, the interventions vary extensively in design. This makes it difficult to compare such interventions and identify the aspects that make such programmes effective (Bergsma and Carney, 2008).

Moreover, research in media literacy and sexual health tends to focus on: a) the negative effects on sexual health and b) portrayals related to sexual health in print and television. However, the internet is possibly the main source of confidential information for adolescents and adults currently (Döring, 2009). Some studies have reported that exposure to information on the internet, including porn can have a positive impact on adolescent sexual health (Döring, 2009). Of course, there is also concern that exposure to pornography can be harmful especially with regards to the portrayal of women, normalising depictions of abuse and in setting unrealistic expectations of sex. As a result, porn literacy has been gaining traction as a subject particularly in countries such as the UK and Australia (Albury, 2014; Dawson, Gabhainn and MacNeela, 2019). Porn literacy seeks to identify and develop the competencies that allow individuals to understand and safely enjoy pornography.

Aside from the development of media literacy, there are other ways in which media could be utilised to develop AHL and SHL. As mentioned in the previous paragraph, the internet can provide a confidential source of useful information for adolescents. Thus, it could be utilised by schools to overcome some of the barriers cited by teachers in 4.5.1. Given the widely documented issues with delivering effective alcohol and sexual health education to adolescents, research exploring the use of serious digital games for alcohol and sexual health has gained momentum in recent years. Stakeholders are beginning to see the value of creating positive digital content in a highly digital age. For example, in a roundtable discussion involving six experts in the field of sexual health, one expert cited that serious digital games (SEGs) for young people are "a logical way to create content that resonates with this group" (Shegog et al., 2015, p.1). Experts posit that effective SEGs can provide confidential and importantly, tailored information that can motivate individuals to make changes in behaviour (DeSmet et al., 2015). A meta-analysis of 7 SEGs for sexual health promotion by DeSmet et al., (2015) showed small positive effects on attitudes and knowledge. The study concluded that the next generation of SEGs should target behavioural change and should allow for a more immersive experience for the user (DeSmet et al., 2015). The study also identified that more rigorous testing and follow-up was necessary to test the efficacy of such games. Similarly, a systematic review of SEGs for alcohol and other drugs by Rodriguez, Teesson and Newton (2014) found that in the 3 SEGs that targeted alcohol, participants showed an improvement in alcohol related knowledge and increased perception of alcohol related harm. However, the authors concluded that further research should focus on whether these SEGs can affect behaviour change (Rodriguez, Teesson and Newton, 2014).

Whilst further research might need to be conducted to design effective media literacy interventions, there are other ways in which the effects of negative or harmful media portrayals of alcohol and sexual health can be mitigated to some degree. In the UK, alcohol advertisements must abide by BCAP codes that prohibit such adverts from encouraging irresponsible drinking and suggesting that alcohol can increase desirable traits such as confidence (Searle, Alston and French, 2014). Although these standards exist that regulate alcohol advertisements, evidence has shown that alcohol companies frequently breach these policies (Searle, Alston and French, 2014). The lack of enforcement or regulation has led to some experts call for a ban on alcohol advertising within the UK (Gayle, 2017). The National Foundation for Alcohol Prevention in the Netherlands (STAP, 2007) report that comprehensive alcohol education without support from wider initiatives cannot overcome the problems of alcohol misuse. Evidence suggests that it is difficult to achieve sustainable behaviour change with alcohol education when individuals may receive a wealth of contending messages from their environment (STAP, 2007).

Saffer (1991) studied the impact of alcohol advertising bans in seventeen countries from 1970 to 1983 and reported that countries in which advertising of spirits was banned reported 16% less alcohol consumption; countries in which beer and wine advertising was banned reported 11% less alcohol consumption than in countries with no ban. This was after controlling for variables such as income and alcohol price. More recent data on alcohol consumption per capita from WHO (2014) showed that countries with alcohol advertising bans had the second lowest rate of alcohol consumption per capita (e.g., Norway, Sweden) after countries with total bans on alcohol consumption (e.g. UAE) (WHO, 2014). Alcohol advertising bans could, therefore, provide an effective initiative when combined with quality alcohol education with which the UK can begin to address the costs of alcohol-related harm. Although some experts have called for these advertisement bans, currently, these are not being considered seriously at a policy level in the UK (Gayle, 2017).

In terms of sexual health, steps have already been taken with the enforcement of the 'watershed' across television and radio in the UK to protect young people from harmful material, including sexual content, from being aired before 9:00 pm (Ofcom, 2013). However, problems with potential bans or restrictions arise when considering technological advancements and changes in how individuals now access media. With the popularity of streaming services such as Netflix, Youtube and PornHub, it is difficult to enforce any form of restriction or ban across all sources of media. The Digital Economy Act (2017) requires age verification controls to be used on all websites that provide pornographic content. However, the controls used are at the discretion of the website

owners. This may mean that underage young people can still easily access explicit content by, for example, fabricating their date of birth. The Digital Economy Act (2017) also does not account for sexually explicit content circulated on social media websites or non-pornographic streaming sites. Realistically, young people may always be able to access or be exposed to unsuitable or harmful content. However, it must be highlighted that the internet also provides a wealth of useful content that could also be blocked by these controls. It is not possible for the Government to be able to police every source of media on the internet and otherwise. This is not to say that an advertising ban would not be useful, more a suggestion that other structures must be in place to help young people dissect conflicting or harmful health messages.

6.3.2 Parents/Guardians

As discussed in Chapter 2, evidence has shown that parental monitoring and communication have the greatest impact on adolescent sexual health and alcohol behaviours. Despite this, with regards to sexual health, studies have shown that parents lack the confidence to discuss sexual health with their children (Morawska et al., 2015). Confidence could often be improved with training or interventions that teach parents how to discuss sensitive topics whilst improving their own knowledge (Ogle, Glasier and Riley, 2008). Similar evidence has been found with regards to alcohol use (Carver et al., 2016).

There are many sources of information that parents can utilise to improve their own knowledge (e.g., DrinkAware, NHS, Planned parenthood). However, the difficulty often lies in communicating this knowledge. There seem to be very few sources of information that guide parents through talking about alcohol and sexual health although some schools do share their PSHE curriculum with interested parents and suggest how they can support the curriculum. Organisations such as the NHS (nhs.uk, 2016) and DrinkAware (Drinkaware.co.uk, n.d.) suggest very basic strategies such as: ensuring that the timing of the conversation and the content is appropriate, ensuring that the parent has the adequate knowledge, being honest, having conversations often and using cues (e.g., storylines in books/ television) to trigger conversation. Parents who seek training in communicating about alcohol and sexual health may find some sources where training is available for a fee (e.g., “Speakeasy” by FPA). However, very little support is available for parents even though they have seemingly more responsibility than teachers for their children. In fact, the FPA was placed into liquidation in May 2019 and this source is no longer available. More guidance is available with regards to monitoring. Charities such as NSPCC provide instructions on how to monitor and control children’s internet activity to limit exposure to harmful or age-inappropriate

materials. However, as mentioned previously (section 6.4.1), the ability to control exposure, realistically, is limited. The Centre for Disease Control and Prevention (CDC) in the U.S. also provides more comprehensive guidelines on monitoring adolescents such as: getting to know the teen's friends, keeping track of the teen's activity and setting clear rules with repercussions for unacceptable behaviour (CDC, n.d.). There seems to be a focus on risky and maladaptive behaviours here and the CDC does not seem to account for the positive messages that might be transmitted by peers.

The Social Mobility Commission (2017) found that initiatives aimed at improving parenting skills can overcome the effects of parental social class and education. Many countries such as Sweden and Australia have effectively put in place a framework of supporting parents. Interestingly, these countries also tend to be among the healthiest countries in terms of general health (Bloomberg, 2017). There are various models of such program delivery. Programmes such as 'Parents as Teachers' is a non-profit organisation (in Australia and USA) that delivers parental education through schools, hospitals, faith-based organisations and other community settings in collaboration with healthcare professionals (Parents as Teachers, n.d.).

Other programmes are established by the government such as 'Parenting Shops' in Belgium (Social Mobility Commission, 2017). 'Parenting shops' bring together organisations to deliver integrated services to support any parent with a child (aged 0-18) or expecting (Eurochild, 2012). The initiative facilitates cooperation between services to empower parents to be involved in their children's health and learning throughout the lifetime, aiming to support parents and educators with their own skills and competencies, ensuring early intervention for at-risk children and working on fostering good parent-child relationships (Eurochild, 2012). 'Parenting shops' are often available in easily accessible areas within the community and include lectures, information sessions, parenting classes, home visits, local initiatives and consultations (Eurochild, 2012). Quality assurance and funding is overseen by the government (Eurochild, 2012).

As yet, data on the impact and cost-effectiveness of such initiatives are not available. Moreover, these programmes do not focus on equipping parents with the skills to develop AHL and SHL in their children. Intuitively one can assume that such programmes, if effective, would be more cost-effective than the combined cost of healthcare, social and educational services interventions needed to care for at-risk or high-risk youth, a view that the British government presumably shares if they have previously proposed parenting classes. However, the success of these programmes is often also dependent on the supporting infrastructure. For example, parental programmes in Sweden are supported by an infrastructure of generous paid parental leave (and reduced working

hours for parents with young children (OECD, 2018). Sweden offers paid parental leave at a rate of 80% of pay for sixty weeks compared to the UK's 90% of wages for first six weeks and then 90% or £145.18 per week, whichever is lower, for the next thirty-three weeks (Crisp, 2017; Gov.uk, 2018). This means that Sweden has a high maternal employment rate and subsequently a low child poverty rate which is an indicator of health outcomes (OECD, 2018).

Without the support of policy and infrastructure, such initiatives are destined for failure. For example, in 2010 Glasgow Council initiated the 'Positive Parenting Program' (Triple P) for parents of 5000 children from the age of five to the age of nine (University of Glasgow, 2014). The program involved home-based sessions to improve parenting competencies and parent-child relationships (University of Glasgow, 2014). The program was previously designed and successfully implemented in Australia with measures of impact showing positive effects. The program has been implemented across many other countries such as USA, the Netherlands, Sweden etc. (Pickering and Sanders, 2015). Despite this, the program was deemed to be unsuccessful in Glasgow due to a 50% drop-out rate. Families from deprived areas were less likely than families from affluent areas, to complete the course (University of Glasgow, 2014). Considering this, schools provide equal opportunity for students to develop these competencies where parents are not able to provide help.

6.3.3 Healthcare

Access to timely and appropriate healthcare is identified as a contributing factor in the overall alcohol and sexual health literacy of young people. Various studies have reported that adolescents perceive the availability and location of services and perceived confidentiality as barriers to accessing care when needed (Oberg et al., 2002; RCN, 2016). Indeed, a report by the Royal College of Nursing reported that young people require the 'right care' at the 'right place' and the 'right time' (RCN, 2016). A simple concept in principle, the delivery of this concept is made challenging due to budget cuts to such services.

As an alternative, General Practitioners (GPs) could be utilised to improve health in young people. Currently, approximately 90% of the UK population are registered with a GP (NHS Digital, 2018). Despite this, less than 30% of young adults rate their GP as 'very good', often struggling to make appointments with their GP when needed and being overlooked for priority patients (Citizensadvice.org.uk, 2014). As a result, young adults are more likely to use walk in clinics and A&E departments than any other age group (Citizensadvice.org.uk, 2014). To overcome this problem, the 'GPs in Schools' model in Australia trained GPs in youth friendly practices (Anderson

and Lowen, 2010). GPs were empowered to implement a school wide program where they explained their role and their services to young people (Anderson and Lowen, 2010). Initial program evaluations found that there was an increase in students' intention to seek help and a decrease in the perceived difficulties associated with seeking help (Anderson and Lowen, 2010). Further, the role of school nurses was mentioned in 4.5.1. Once again cuts to funding have affected the availability of school nurses. However, this is another area in which healthcare could support teaching if adequate resources are allocated to this function.

Similarly, in the USA, a model of school-based health centres has been trialled. This approach puts health centres within school grounds to provide a range of health services in collaboration with schools (Keeton, Soleimanpour and Brindis, 2012). The health centers tend to consist of an advisory board that comprises stakeholders such as parents, youth etc. (Keeton et al., 2012). Parents are required to sign consent forms on behalf of very young people (under 16), but care remains confidential (Keeton et al., 2012). There is some evidence to support the efficacy of such models in reducing unintended pregnancy and treating alcohol misuse (Keeton et al., 2012). Such a model would empower schools and healthcare alike to manage alcohol and sexual health issues as they arise. However, the cost of such a system can be expensive and often requires multi agency funding. Regardless, the idea of locating youth services within easy reach of their target audience should be considered more deeply when services are designed (Keeton et al., 2012).

6.3.4 Peers

Research has shown that individuals are more likely to pay attention to and personalise health messages when they are delivered by individuals similar to themselves (Ramchand et al., 2017). Sensitive topics are more easily discussed among peers than with adults (Mellanby, 2000). In a system where school and parental sources of alcohol and sexual health education might be inconsistent, peer education may provide a useful way in which adolescents could be trained to promote AHL and SHL whilst improving their own knowledge and skills. Peer education may also provide a way in which small scale funding can mitigate some of the harms left by larger budget cuts to schools and youth services (Mentor, 2011).

In the UK, Stephenson et al. (2004) tested the effects of peer led sexual health education for 8000 13-14-year-old students, with education led by 16-17-year-old students. The study measured reported intercourse and contraception use. Significantly fewer girls reported intercourse in the peer led intervention, but changes were minimal in boys (Stephenson et al., 2004). Girls also reported fewer unintended pregnancies in the intervention groups; however, no

differences were reported for contraception use at first sex between intervention and control groups (Stephenson et al., 2004). Students seemed to prefer peer led intervention to teacher led intervention (Stephenson et al., 2004). Previous studies into the impact of peer educators on sexual health showed mixed findings, mainly due to issues with study or intervention characteristics (Chandra-Mouli, Lane and Wong, 2015). Some programmes also report that peer- led interventions show greater positive effects on the students that lead the program than the students who learn from it (Chandra-Mouli, Lane and Wong, 2015). Further, a systematic review of 15 studies from more economically developed countries by Sun et al., (2014) reported that overall, peer- led sexual health interventions had a large effect on knowledge change and medium effects on attitude change. The effect on behaviour change was unclear.

The evidence for peer led education in alcohol use is also limited. A systematic review of peer-led interventions in substance abuse by MacArthur et al., (2016) found that peer led interventions may have small positive effects on alcohol use. However, the sample was limited (n= 6 studies) and some of the study designs were poor (MacArthur et al., 2016). In the UK, drug and alcohol misuse charity, Mentor, has previously created and implemented a peer led alcohol education project (Mentor, 2011). The intervention seemed to increase knowledge of alcohol in all students (n =120) and changed attitudes towards alcohol in a third of students (Mentor, 2011). The intervention also seemed to increase protective factors in peer educators (e.g., positive relationships with school and family, reduction in general anxiety) (Mentor, 2011). Mentor (2011) recommended that future peer-led alcohol interventions should train diverse groups of peer educators and find ways to measure long term impacts on attitudes and behaviours.

Despite these inconsistent findings, a successful peer education program may, at least, work to bolster messages that have been taught in PSHE/RSE sessions, and so should not be discounted. Even if those trained to lead programmes benefit the most, the reduction of harm and increase in wellbeing in these students should still be considered as a positive interventional outcome. It is important therefore to examine the characteristics that would engender a successful peer-led program.

Advocates for Youth (2011) conducted a literature review to examine and identify the aspects of successful peer led sexual health programmes. Recommendations that would be relevant to schools (Advocates for Youth, 2011) included:

- set aims and objectives for the intervention and define how these will be achieved
- careful selection and training of managing staff
- involvement of youth with the design, implementation and planning stages

- identify the target audience and their needs
- recruit peer leaders based on skills interest and similarity to target audience
- choose a curriculum supported by research
- train peer leaders to facilitate discussion, share communication skills, control classrooms, role model and clarify and promote healthy norms.

UNICEF (2012) suggested that peer led programmes should:

- form one part of a wider education program to form a comprehensive strategy
- involve youth in planning, implementation and evaluation
- consider and provide incentives for becoming a peer educator
- define aims and objectives for all individuals involved
- ensure quality controls and impact evaluations are in place
- involve trained adults that oversee and manage the process
- provide comprehensive training for educators
- be reflective of the needs of the audience and educators
- ensure that new educators are trained so that there will not be a shortage of supply
- prepare educators for negative reactions from their audience and potentially their community.

Schools wishing to create and implement peer-led programmes in alcohol and sexual health will have to be mindful of the cost-effectiveness of such a technique as it requires comprehensive training of both students and staff. Thus, it would be wise to use peer education as part of an overall initiative to improve alcohol and sexual health literacy.

6.4 Strengths and Limitations

The mixed methods approach employed in this thesis allowed for a flexible approach in data collection analysis in a field of limited research. This thesis consolidated new and existing information to define and form models of AHL and SHL that could be used to assess and improve the content of RSE/HE education. It provides a strong theoretical framework for further research in several areas, including the creation of an AHL/SHL measurement tool and curriculum guidance. The thesis also highlighted the discrepancy between research and guidance in adolescent alcohol literacy and sexual health literacy. This could be due to several factors such as greater interest in sexual health but is nonetheless an important finding. Considering the breadth of the research found in this thesis, it is necessary to consider whether the models of AHL and SHL should have

been developed in separate studies. Certainly, this may have provided the opportunity to study AHL and SHL in greater detail and overcome some of the issues particularly faced by the limited literature available for alcohol in comparison to sexual health. However, the reason AHL and SHL models were developed in parallel is since firstly, some of the competencies needed for AHL and SHL overlap. Finally, alcohol use particularly can have a great impact on sexual health behaviours (Brown, Gause and Northern, 2016).

However, there were some limitations associated with the methods employed in this thesis. Firstly, due to limited research in this area, focus was on the construction and definition of AHL and SHL models. As a result, it was not possible to extensively test the validity of the AHL and SHL models (this was mainly done in Chapter 4), although they were developed mainly from the extant literature. It was also beyond the scope of this study to explore how the AHL and SHL models could be used to form assessment tools, although it was clear that existing measures of HL could not be adapted for this purpose (see Chapter 3). Regarding to methods, a few issues are apparent with the two main studies (Chapter 4 and 5). The exploratory qualitative study (Chapter 4) contained a small, homogenous sample of local teachers. As a result, saturation point was reached quickly, and a full range of views may not have been gained. With regards to the generalisability of results, the population statistics show that Dorset and Hampshire generally possess low populations of unemployment claimants and BME groups. Although the data obtained was rich, further research should be conducted to produce a sample more representative of the UK.

In Chapter 5, due to the inclusion criteria (section 5.3) an element of sampling bias may have been introduced in the study. For example, as the curriculum guidelines had to be available in English, there was a skew towards more 'Western' countries within the sample. It was also unclear from the study whether mandatory sexual health/ alcohol education made any difference to adolescent and adult behavioural competencies. There was also the issue of implementation of guidelines in countries such as Australia and Canada where provincial guidelines exist. In hindsight the methods could have included comparison of alcohol and sexual health related research and statistics between countries with mandatory alcohol and/ or sexual health education and countries where this form of education was scarce or non-existent in schools.

6.5 Summary

Considering the findings from this thesis, it seems that schools in the UK still have some way to go to develop curriculums that effectively develop and evaluate AHL and SHL in adolescents. It is important to consider whether AHL and SHL are useful concepts in a school context. Although

health literacy has garnered significant attention, is it possible to "teach" a largely competence-based subject? In fact, in Chapter 4.4.3.1 many teachers expressed that schools may not be the best environment for developing AHL/SHL in students. However, as discussed in Chapter 5 (section 5.4) the Australian curriculum for alcohol and sexual health education was developed based on a framework of health literacy. Moreover, the Ofsted report mentioned in Chapter 1 (section 1.4) and the responses from teachers in Chapter 4 (section 4.4.3) indicate that many educators believe that current curriculums are not fit for purpose, often focusing almost exclusively on risk and often ignoring skills. There seems to be an emerging consensus among educators, researchers and even governments that a knowledge-based approach to alcohol and sexual health education is not enough. Although schools may not be yet employing the terms AHL and SHL, these concepts are useful in addressing the need to develop competencies and knowledge in adolescents that many stakeholders have identified. Traditionally alcohol and sexual health education has focused on the impartation of knowledge (see chapter 4.4.3 and 5.5.1). The AHL/SHL models help shift the focus from knowledge to the development of competencies (see Appendix N). Although schools seem ill-equipped currently to address these competencies (see Chapter 4.6), they are still expected by law, in England and some other countries (see Chapter 5) to teach alcohol and sexual health education. AHL and SHL are useful concepts for the next stage of formal alcohol and sexual health education in schools.

However, given the sentiments expressed by the teachers in Chapter 4 (section 4.4.3.1). Currently schools and educators are not adequately equipped to deliver AHL/SHL competencies to students effectively. It is clear from the findings in this thesis that many barriers such as a lack of resources, training (Chapter 4, section 4.4.3.1) and guidance (Chapter 5, section 5.5) will need to be overcome before schools can begin to deliver effective alcohol and sexual health education based on AHL/SHL frameworks. Nevertheless, given the constraints and budget cuts faced by all other services (Chapter 4, section 4.5) schools may still be the best placed to develop these competencies in adolescents, especially in a time where RSE and HE have become compulsory. Schools still have the best access to and experience with his age group. However, this requires significant investment in schools, teacher training and further research. Although compulsory HE and RSE is viewed by many as a first step in addressing some of the issues discussed above, they may not be any more effective than previous curricula. The issues cited by educators as the largest barriers to delivering AHL/SHL in schools are still to be addressed. Without further research, dedicated resources, training and more comprehensive guidance on implementation and evaluation of such lessons, educators will still struggle to develop the competencies that they and researchers feel are necessary for adolescents. Moreover, the onus for developing AHL and SHL

seems to lie disproportionately with educators when Chapter 2, 3 and 5 have clearly illustrated and discussed the impact of parents, peers, media etc. Schools and education are one small part of a whole system of factors that impact AHL and SHL in adolescents. Yet, as described in section 6.4 of this chapter, government guidance that addresses these factors is rare or non-existent.

However, the new guidelines for RSE and HE (in England) can be considered a significant improvement from the guidelines that were previously in place. The previous guidelines (DfE, 2000) were created under Section 28, an act introduced in 1988 which banned the promotion of homosexuality by local councils and in schools (Sommerlad, 2018). This meant that LGBTQIA+ (Lesbian, Gay, Bisexual, Trans, Queer, Intersex, Asexual and other) issues were not included in the previous RSE curriculum as the act was only repealed in 2003 (Sommerlad, 2018). The new curriculum guidelines (see Table 5.3) are amended to account for teaching about and for LGBTQIA+ groups (DfE, 2018). The previous guidelines also seemed to focus from risk to a greater degree with suggested topics centred on contraception, STIs and abortion (DfE, 2000). Whereas the new guidelines emphasise the role of relationships and general wellbeing (DfE, 2018). With regards to alcohol education, previously, the Government chose not to provide guidelines for specific topics or teaching related to other areas of PSHE, leaving decisions on content to the discretion of schools (DfE, 2013). The new guidelines for HE which includes alcohol education seem a significant step forward considering this. Nevertheless, these guidelines still fall short in developing the competencies related to AHL and in providing practical teaching points for educators.

6.6 Conclusion

In summary, this thesis has contributed to the body of knowledge in this area significantly by developing evidence-based definitions and models of AHL and SHL at a time where sexual health and alcohol education has become compulsory in secondary schools in England. The creation of AHL/SHL models and definitions provides significant opportunity for future researchers to utilise AHL and SHL models for curriculum design and assessment. Beyond the conceptualisation of the AHL/SHL models and definitions, the thesis also found that currently, schools in England are ill equipped to provide timely and comprehensive RSE and HE. Further, international guidelines from countries where RSE and/or health education is compulsory showed that guidelines for educators tend to be vague, especially regarding evaluation of alcohol and sexual health education; the majority also still tend to focus on risk avoidance rather than engendering pleasure or responsible enjoyment regarding competencies. Surprisingly, this included countries such as Sweden that have a reputation for implementing effective sexual health education in schools (Chapter 5.5.1). This is

particularly pertinent in England where RSE is to become statutory and compulsory in all secondary schools and guidance is still ongoing. Considering the findings from the thesis, future directions for alcohol and sexual health education are discussed in section 6.4. This thesis shows that although AHL and SHL are useful concepts with regards to adolescents, there are many barriers that need to be overcome to enable educators to develop these competencies effectively in schools.

Effective implementation of AHL/SHL based curriculum will also require the dedication of more resources for schools to put toward teacher training and time dedicated to teaching skills and competencies. Although schools could provide an effective means of intervention in adolescents with the correct support, improvement of AHL and SHL is not the sole responsibility of educators. There are many evidence-based methods of improvement that could be used to advance the external factors that influence AHL and SHL in adolescents. Recommendations for future research include:

- Design of a competence-based curriculum employing the core concepts from AHL/SHL models including details of teaching methods and teacher training
- Creation of AHL and SHL measures that can accurately assess skills in context
- Development of digital methods to teaching AHL/SHL.

Appendix A Health Literacy Definitions and Coding

Health Literacy definitions

Author(s)	Definition
Ratzan and Parker, 2000 Nielsen-Bohlman, L., 2004 *Health Literacy: A Prescription to End Confusion*. [e-book] Washington, DC, USA: National Academies Press, 2004. Available through: ProQuest ebrary website <http://site.ebrary.com> [Accessed 13 January 2015].	…The degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.
Adkins and Corus (2009) Marks, R. 2012, Health Literacy and School-Based Education. [e-book] Emerald Group Publishing Limited. Available through: My ilibrary website <http://www.myilibrary.com?ID=404692> [Accessed 13 January 2015].	…The ability to derive meaning from the different forms of communication by using a variety of skills to accomplish health- related goals. Health literacy involves a range of practices in the social realm (e.g., language competencies and identity management skills); it is therefore a public rather than an individual act of decoding forms.
AMA (1999) SEE ABOVE	…the constellation of skills, including the ability to perform basic reading and numerical tasks required to function in the health care environment, including the ability to read and comprehend prescription bottles, appointment slips and other essential health- related materials.
IOM Expert Panel – Baker 2006	…encompasses 4 domains: 1) cultural and conceptual knowledge; (2) oral literacy including

Author(s)	Definition
SEE ABOVE	speaking and listening skills, (3) print literacy, including writing and reading skills, (4) numeracy.
Joint Committee on Health Education Terminology (1991) SEE ABOVE	…the continuum of learning, which enables people, as individuals, and as members of social structures, to voluntarily make decisions, modify behaviours and change social conditions in ways that are health enhancing.
Kickbusch and Maag (2008) SEE ABOVE	…will become a central life skill needed in modern health societies and reflects the capacity to make sound health decisions in the context of everyday life- at home, in the community, at the workplace, in the health care system and in the marketplace and in the political arena. It is critical empowerment strategy to increase people's control over their health, their ability to seek out information, and their ability to take responsibility.
Mancuso (2008) SEE ABOVE	…a process that evolves over one's lifetime and encompasses the attributes of capacity, comprehension, and communication. The attributes of health literacy are integrated within and preceded by the skills, strategies, and abilities embedded within the competencies needed to attain health literacy. The outcomes of health literacy are dependent upon whether one has achieved adequate or inadequate health literacy and have the potential to influence individuals and society.
Peerson and Saunders (2009)	…includes information and decision- making skills occurring in the workplace, in the supermarket,

Author(s)	Definition
SEE ABOVE	in the social and recreational settings, within families and neighbourhoods, and in relation to the various information opportunities and decisions impact upon health every day.
Rootman and Gordon-El-Bihbety (2008) SEE ABOVE	The ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life course
Rubinelli, Schulz, and Nakamoto (2009) SEE ABOVE	'Reflects the individuals' capacity to contextualise health knowledge for his/her own good health, and to decide on a certain action after full appraisal of what that specific action means for them personally.'
Seldon, Zoorn, Ratzan, Parker, and Ruth (2002)	'The currency patients need to negotiate a complex health system.'
Stone (2011) SEE ABOVE	'Includes the ability to understand instructions on prescription bottles, medical education brochures, directions given by your doctor, consent forms, and decisions concerning your own healthcare as well as the healthcare of loved ones.'
United Kingdom National Consumer Council (2004) SEE ABOVE	'The capacity of an individual to obtain, interpret and understand basic health information and services in ways that are health-enhancing.'
Zarcodoolas, Pleasant, and Greer (2006)	'Is the wide range of skills, and competencies that people develop to seek out, comprehend, evaluate, and use health information and

Author(s)	Definition
SEE ABOVE	concepts to make informed choices, reduce health risks, and increase quality of life.'
WHO (Nutbeam, 1998) SEE ABOVE	'…Represents the personal, cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health.'
Zarcodoolas, Pleasant, and Greer (2006) SEE ABOVE	'Is the wide range of skills, and competencies that people develop to seek out, comprehend, evaluate, and use health information and concepts to make informed choices, reduce health risks, and increase quality of life.'
The Centre for Health Care Strategies Inc. (2000) Kickbusch (2001)	Health Literacy is the ability to read, understand, and act on health care information.
National Adult Literacy Survey (1992) Kickbusch (2001)	The ability to apply reading and numeracy skills in a health care setting
Bernhardt, Brownfield, and Parker (2005) Berkman, Davis and McCormack (2010)	An individual- level construct composed of a combination of attributes that can explain and predict one's ability to access, understand, and apply health information in a manner necessary to successfully function in daily life and within the healthcare system. Functional health literacy: the skills and ability to successfully complete health related tasks. Individual level attributers include abilities in prose, document, and quantitative literacy; ability to engage in two-way communication; skills in media literacy and

Author(s)	Definition
	computer literacy; motivation to receive health information; and freedom from impairments and/or communicative assistance from others.
Nutbeam (2006) SEE ABOVE	Personal, cognitive, and social skills that determine the ability of individuals to gain access to, understand, and use information to promote and maintain good health. These include such outcomes as improved knowledge and understanding of health determinants and changed attitudes and motivations in relation to health behaviour, as well as improved self-sufficiency in relation to defined tasks. Typically, these are outcomes related to health education activities. Health literacy is conceptualised as one domain in a conceptual model of health promotion.
McCormack (2010) SEE ABOVE	The degree to which individuals can obtain, process, understand, and communicate about health- related information needed to make informed health decisions.
Baker (2006) SEE ABOVE	The ability to function in the health care environment and depends on characteristics of both the individual and health care system. An individual's health literacy is context specific (dynamic) and may vary depending upon the medical problem being treated, the health care provider, and the system providing care. The definition includes health knowledge.
Healthy People (2010)	Dependent on the individual and system factors, including communication skill of lay persons and

Author(s)	Definition
SEE ABOVE	professionals, lay and professional knowledge of health topics, culture, the demands of the healthcare and public health systems, and the demands of the situation/ context.
Freedman, Bess, Tucker, et al. (2009) SEE ABOVE	Public health literacy is the degree to which individuals and groups can obtain, process, understand, evaluate, and act upon information needed to make public health decisions that benefit the community.
Modification of Ratzan and Parker (2000) by Berkman, Davis and McCormack (2010) SEE ABOVE	The degree to which individuals can obtain, process, understand and communicate about health- related information needed to make informed health decisions.
Nutbeam (2000)	Levels of health literacy Level 1: Functional health literacy: Such action has limited goals directed towards improved knowledge of health risks and health services, and compliance with prescribed actions. Generally, such activities will result in individual benefit, but may be directed towards population benefit (e.g., by promoting participation in immunization and screening programs). Typically, such approaches do not invite interactive communication, nor do they foster skills development and autonomy. Examples of this form of action include the production of information leaflets, and traditional patient education.

Author(s)	Definition
	Level 2: Interactive Health Literacy: This is focused on the development of personal skills in a supportive environment. This approach to education is directed towards improving personal capacity to act independently on knowledge, specifically to improving motivation and self-confidence to act on advice received. Level 3: Critical Health Literacy: reflects the cognitive and skills development outcomes which are oriented towards supporting effective social and political action, as well as individual action.
Schulz and Nakamoto (2005) Frisch, Camerinin, Diviani, and Schulz (2011)	3-tiered concept: 1. Declarative Knowledge: factual knowledge related to health issues to be able to learn how to approach a health condition. 2. Procedural knowledge: know- how to apply factual knowledge and use health information in a specific context 3. Judgement skills: the ability to judge based on factual knowledge necessary to deal with novel situations.
Jordan *et al.,* (2010) SEE ABOVE	1. Functional Literacy: reading writing and numeracy skills 2. Knowing when to seek health information 3. Knowing where to seek health information 4. Verbal communication skills 5. Retain and process information skills 6. Assertiveness 7. Application skills
Paasche- Orlow and Wolf (2006) Sorensen et al. (2012)	An individual's possession of requisite skills for making health- related decisions, which means that health literacy must always be examined in

Author(s)	Definition
	the context of specific tasks that need to be accomplished. The importance of contextual appreciation of health literacy must be underscored.
EU (2007) SEE ABOVE	The ability to read, filter and understand health information in order to form sound judgements.
Pavlekovic (2008) SEE ABOVE	The capacity to obtain, interpret and understand basic health information and services and the competence to use such information to enhance health.
Rootman and Gordon- Elbihbety (2008) SEE ABOVE	The ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life course.
Ishikawa and Yano (2008) SEE ABOVE	The knowledge, skills and abilities that pertain to interactions with the healthcare system.
Australian Bureau of Statistics (2008) SEE ABOVE	The knowledge and skills required to understand and use information relating to health issues such as drugs and alcohol, disease prevention and treatment, safety and accident prevention, first aid, emergencies and staying healthy.
Yost et al. (2009) SEE ABOVE	The degree to which individuals have the capacity to read and comprehend health- related print material, identify and interpret information presented in graphical format (charts, graphs and tables), and perform arithmetic operations in

Author(s)	Definition
	order to make appropriate health and care decisions.
Adams et al (2009) SEE ABOVE	The ability to understand and interpret the meaning of health information in written, spoken or digital form and how this motivated people to embrace or disregard actions relating to health.

Table of Codes

Themes	Codes	Occurrence in definitions
Individual knowledge/ skills/abilities	Evaluate information	8
	Understanding/processing information	23
	Apply information	16
	Ability to learn	1
	Literacy	7
	Numeracy	5
	Accessing information	15
	Communication	7
	Media literacy	1
	Computer literacy	1
	Social skills	2
Interactions	Dynamic	10
	Supportive environment	1
	Healthcare	6

Information	Verbal	2
	Visual	4
	Factual knowledge	3
	Health information	1
Outcomes	Self- confidence	2
	Health promotion	9
	Independence	6
	Motivation	4
	Understanding health risks	2
	Informed decisions	6
	Enhance health	7
	Maintain health	3

Appendix B Table of Search Terms utilised in Chapter 2: Literature review

Table of Keywords and Combinations used in searches.

Section	**2.3.1.1**	**2.3.1.2**	**2.3.1.3**	**2.3.1.4**	**2.3.1.5**	**2.3.1.6**	**2.3.2.1**	**2.3.2.2**	**2.3.2.3**
Search terms	Literacy/ Education AND Alcohol AND Adolescents/Teenagers/ Young People/ Teens	Media/Internet AND Alcohol AND Adolescents/Teenagers/ Young People/ Teens	Parent AND Alcohol AND Adolescents/Teenagers/ Young People/ Teens	Peer AND Alcohol AND Adolescents/ Teenagers/ Young People/ Teens	Healthcare/ Health service(s) AND Adolescents/ Teenagers/ Young People/ Teens	Socioeconomic status AND Alcohol AND Adolescents/ Teenagers/ Young People/ Teens	Culture/ Religion/Race/ Immigration AND Alcohol AND Adolescents/ Teenagers/ Young People/ Teens	Cognitive/ Social skill(s)/ Disability AND Alcohol AND Adolescents/ Teenagers/ Young People/ Teens	Gender AND Alcohol AND Adolescents/ Teenagers/ Young People/ Teens

Section	2.4.1.2	2.4.1.3	2.4.1.4	2.4.1.5	2.4.1.6	2.4.2.1	2.4.2.2	2.4.2.3
Search terms	Media/Internet AND Sexual health AND Adolescents/Teenagers/ Young People/ Teens	Parent AND Sexual health AND Adolescents/Teenagers/ Young People/ Teens	Peer(s) AND Sexual health AND Adolescents/ Teenagers/ Young People/ Teens	Healthcare/ Health service(s) AND Sexual health AND Adolescents/ Teenagers/ Young People/ Teens	Socioeconomic status AND Sexual health AND Adolescents/ Teenagers/ Young People/ Teens	Culture/ Religion/Race/ Immigration AND Sexual health AND Adolescents/ Teenagers/ Young People/ Teens	Cognitive/ Social skill(s)/ Disability AND Sexual health AND Adolescents/ Teenagers/ Young People/ Teens	Gender AND Sexual health AND Adolescents/ Teenagers/ Young People/ Teens

Appendix C Protocol for Systematic Review

C.1 Background

The term "health literacy" is a recently developed concept, first mentioned in 1974, and attached to the notions of health education and health promotion (Parker, Ratzan and Lurie, 2003). Consequently, over time, many definitions and accompanying models of health literacy have been developed and the accompanying concept of health numeracy has been added (Berkman, Davis, McCormack, 2010). The World Health Organisation, currently, defines health literacy as "…the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health" (Nutbeam, 1998, p.357). Health numeracy is identified as more recent facet of health literacy but has been equally implemented in the maintenance of health. Ancker and Kaufman (2007) catalogued various definitions of health numeracy into one single definition: "…the individual-level skills needed to understand and use quantitative health information, including basic computation skills, ability to use information in documents and non-text formats such as graphs, and ability to communicate orally".

Although these definitions provide a basic framework from which health literacy can be conceptualised and understood, a review conducted by Mårtensson and Hensing (2012) found that current definitions of health literacy are positioned in the extremes of the phenomena. That is, the definitions tend to be either too basic or too complex in their description of health literacy as a concept (Mårtensson and Hensing, 2012). In order to overcome this, for the purpose of this paper, a literature search was conducted to catalogue

and code current definitions of health literacy. Thirty-six different definitions of health literacy were found then analysed using Nvivo. The definitions were searched for common themes and coded using the UNESCO guidance on numerous forms of literacy (Street, 2005). The most commonly mentioned type of literacy mentioned within the health literacy definitions was informational literacy. The same process was followed to reach the definition of health numeracy. Thus, the popular themes arising from each definition were analysed and grouped in order to create the following definitions:

Health Literacy: an individual's capability to obtain, understand, process and apply health information in order to make informed, health related decisions for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

With this in mind, it becomes increasingly clear that health literacy and indeed health numeracy are significant concepts that can influence the behaviour of the general population and it is widely recognised that increased levels of literacy and education can vastly improve health decisions and related outcomes (Kickbusch, 2001).

C.1.1 Alcohol and Sexual Health Statistics

Currently in the UK, statistics show that alcohol is a leading health problem in adults, costing society around £21 billion annually (Home Office, 2012). This involves any crime involving alcohol as well as costs to the National Health System (Home Office, 2012). The highest levels of alcohol dependence were found in men aged between 23-34 and women aged 16-24 (Health and Social Care Information Centre, 2009). The problem of alcohol abuse

begins early in adolescence with children trying alcohol at younger ages leading to a more detrimental prognosis with early alcohol use being linked to greater chance of alcohol dependence in the future (Best et al, 2006; Windle, 1999). Unfortunately, although general trends in alcohol abuse seem to be decreasing, evidence increasingly points to the fact that children and adolescents in the UK are much more likely to drink than counterparts in any other country (Donaldson, 2009). Between 2011 and 2012, over 11,000 hospital admissions were attributed to underage drinking (House of Commons Debates, 2013). Consuming alcohol at a young age can also have an impact on academic achievement; with children who drink at the age of 13 being more likely to achieve less academically (Ellickson et al, 2003).

Correspondingly, reviews into the neurotoxic effects of alcohol in the adolescent age groups have found that teens with alcohol use disorders (including binge drinking) frequently perform more poorly in neurocognitive tasks and have greater discrepancies in brain structure and activation than matched controls that have no alcohol disorders (Jacobus and Tapert, 2012; Witt, 2010). Similarly, a large body of evidence links early alcohol use with the development of mental health problems and alcohol is often associated with increasing feelings of depression (Newbury- Birch et al, 2008). Underage alcohol use and alcohol abuse in general have also been linked to a greater chance of partaking in risky sexual behaviours (Mann et al, 2009; Parkes et al, 2006).

Similarly, sexual health and related concerns in adolescents are receiving an increased focus within research. Although there is a trend for increased contraception use among adolescents, the UK still has the highest teenage pregnancy and abortion rates in Western Europe (Stammers, 2007). Young people aged 16-24 are also at the highest risk of contracting

a sexually transmitted infection (STI) and remain the age group with the highest proportion of diagnoses of STIs (Health Protection Agency, 2012). Rates of diagnoses of chlamydia, gonorrhoea and genital herpes have increased in this age group through the years (Public Health England, 2015; Tripp and Viner, 2005). Conversely, young people are also the least likely to access health services (Health Protection Agency, 2012). The Tellus4 National Report (Chamberlain et al, 2010) found that 32% of young people within the sample did not receive sexual health and relationship education or felt that the information that they did receive was inadequate. Similarly, studies have found that young people tend to only put protective measures in place in terms of sexual health after first sexual intercourse (Stone and Ingham, 2007). The average age of first sexual intercourse in the UK has remained stable over the years at 16, however around 15- 18% of teenagers do report sexual intercourse at an earlier age (Tripp and Viner, 2005). Early sexual debut is often associated with risky sexual behaviours or unsafe sex due to a lack of knowledge: confidence to refuse or use contraception, and/or use of alcohol (Tripp and Viner, 2005).

C.1.2 Measuring Health Literacy

It is clear from the statistics that alcohol and sexual health literacy remain a growing problem within the adolescent age group. Adolescents are increasingly exposed to sensitive material with the burgeoning of the informational age; making it more difficult to control the situation. At present, there are various interventions exist that aim to combat these issues, and thus there is a consensus that more has to be done regarding the health education of adolescents (Manganello, 2008). The simplest way to reach this audience is by implementing alcohol and sexual education intervention in schools. At present, the Government requires

schools to implement a policy regarding PSHE lessons (Personal, Social, Health and Economic Education) where these issues may be managed. Whilst this may provide a beginning for the adequate implementation of health education, PSHE remains a non- statutory subject and thus some schools choose to exclude it from their curriculum (Department of Education, 2000). The difficulty with implementing appropriate sexual health and alcohol literacy-based education in schools is that there is no widely implemented and tested method of measuring knowledge in adolescents in this area. Without a measure, schools are unable to test the level of knowledge among students and whether the PSHE lessons are useful.

Although few measures of alcohol and sexual health literacy in adolescents exist, there is an abundance of literature that aims to measure health literacy in some way (Berkman et al, 2011). Popular measures of health literacy include the Test of Functional Health Literacy in Adults (TOFHLA) and the Rapid Estimate of Adult Literacy in Medicine (REALM) (Clancy, 2009). The TOFHLA measure tests both literacy and numeracy skills whilst the REALM is a shorter measure of functional literacy (Clancy, 2009). In a review, Haun et al (2015) inventoried and described 51 different health literacy scales in which they were only able to identify one health literacy measure that was aimed specifically at adolescents. The REALM- Teen is a modified version of the REALM that assesses vocabulary of health terms (Haun et al, 2015). Whilst literacy in itself is an important concept to measure, it must be considered that this does not in itself constitute to the use of health knowledge or health related behaviours. Accordingly, when adapting the measure of health literacy, it may be important to add features that attempt to predict behaviour implementation (Weinstein, 1993).

It is also important to consider that: as the population within the UK is ethnically and religiously diverse: there may be variations in alcohol and sexual health knowledge. For example, in sexual health research, studies indicate that religious students tend to possess inferior sexual health knowledge compared to non- religious or non- affiliated counterparts (Coleman and Testa, 2008). Conversely, religious adolescents are less likely to drink or abuse alcohol compared to non-religious counterparts (Newbury- Birch et al, 2008). Thus, it may be of importance that measures of sexual health and alcohol literacy are cross- culturally valid in order to be acceptable among a range of ethnic groups.

C.1.3 Research Aim and Questions

Considering the research presented so far, the aim of this paper is to assess the appropriateness and acceptability of existing tools of health literacy in order to adapt one tool in order to measure alcohol and sexual health literacy in adolescents as there is little research in this particular area (Manganello, 2008). A systematic review in particular is needed in this field in order to assess the validity and reliability of general health literacy measures. The research question addressed in this systematic review will be:

- **Research question 1:** What knowledge, skills and abilities (competencies) do international researchers believe are needed for an adolescent to be literate in alcohol and sexual health?

- **Research question 3:** How well do existing measures assess health literacy in adolescents?

C.2 Methods

C.2.1 Inclusion Criteria

1. Studies that attempt to validate a measure of ***health literacy*** specifically
2. The measures must target or be sampled on individuals up to 19 years of age
3. Studies from any date are acceptable
4. Studies must utilise a non- clinical population (i.e., healthy people)
5. A definition of health literacy must be present within the research
6. Articles must be reported in English

C.2.2 Search Strategies

Electronic databases shall be the initial site of search using the terms detailed in Appendix A. The databases were chosen based on their relevance in the health field and the terms are based on variations of the topic that will ensure greater sensitivity in the findings. Further search strategies will include contacting relevant authors in the field of research and also visually searching the references of each relevant paper. Contacting authors will be a strategy used to extract data that may be missing within the paper and to identify any grey literature.

C.2.3 Study Selection

Studies will initially be screened against the inclusion criteria, after which they will undergo more rigorous testing and data extraction. Each study must initially meet the complete inclusion criteria in order to be assessed within the systematic review. After

meeting the inclusion criteria, each study shall be reviewed by the researcher for data extraction.

C.2.4 Quality Assessment

Each study shall undergo evaluation against the COSMIN manual which will involve assessments of methodological quality and generalisability of results.

C.2.5 Data Extraction

The data extraction sheets are attached in Appendix C and are designed to extract the relevant and useful information from the article. This involves extracting statistical and characteristic data from each study.

C.2.6 Data Analysis and Synthesis

The main analysis will involve quantifying construct validity for each study in order to assess which study provides the most valid measure of health literacy.

C.2.7 Dissemination of Results

Each stage of the review will be recorded for research transparency. The results of the review may be presented at relevant conferences and may be published.

Appendix D Search Terms and Databases for Systematic Review

D.1 Databases:

- EBSCO
- PubMed
- Web of Science
- ADOLEC
- DARE
- Open Grey

D.2 Initial Keywords

- Health Literacy AND
- Measure AND
- Validity AND

D.3 Search terms

Health Literacy	Health Literacy
Measures	Measures/ Tools/ TOFHLA/ REALM/ Comprehension of 50 medical terms/ Lipkus Expanded Health Numeracy Scale/ Health Literacy Component of the NAAL/ 3 item Health Literacy Screening/ Medical Data Interpretation test/ Newest Vital Sign/ Single Item Literacy Screener/ Subjective Numeracy Scale/ Functional Health Literacy Test/ Medical Term Recognition Test/ Health Literacy Skills Instrument/ Health Literacy Assessment/ Numeracy Understanding in Medicine/ Swiss Health Literacy Survey/ Health

	Literacy Questionnaire/ Health Literacy Management Scale/ European Health Literacy Questionnaire/ All aspects of Health Literacy Scale/ General Health Numeracy Test/ Signature Time
Adolescents	Adolescents/ Teens/ Teenagers

Appendix E Data Extraction Forms from Systematic Review

General Information	
Article Title:	**Study ID:**
Country of Origin:	**Source of funding:**

Study Design		
Aims/ Objectives:	**Definition of Health Literacy:**	**Recruitment procedure:**
Sample Characteristics		
Sample size:	**Age range:**	

Box A: Internal Consistency	Relevant number of items:	Final Score:	Comments:
Box B: Reliability	Relevant number of items:	Final Score:	Comments:
Box C: Measurement Error	Relevant number of items:	Final Score:	Comments:
Box D: Content Validity	Relevant number of items:	Final Score:	Comments:
Box E: Structural Validity	Relevant number of items:	Final Score:	Comments:
Box F: Hypothesis Testing	Relevant number of items:	Final Score:	Comments:
Box G: Cross- Cultural Validity	Relevant number of items:	Final Score:	Comments:

Box H: Criterion Validity	Relevant number of items:	Final Score:	Comments:
Box I: Responsiveness	Relevant number of items:	Final Score:	Comments:
Box J: Interpretability	Relevant number of items:	Final Score:	Comments:

Study	Box	Score	Comments
Findings Toward a Multidimensional Measure of Adolescent Health Literacy	A	8/8	The analysis found that some items did not fit the categories they were placed in and, further to this, could not be defined. Furthermore, the scale was not tested more than once which lowered its scores in the categories tested.
	B	4/10	
	C	3/9	
	D	3/4	
	E	4/5	
	F	NA	
	G	NA	
	H	3/6	
	I	5/7	
	J	3/8	
	TOTAL	33/57 (57.9%)	

Study	Box	Score	Comments
Developing and evaluating a relevant and feasible instrument for measuring health literacy of Canadian high school students.	A	5/8	Overall, the study was badly reported, making it hard to ascertain what it had achieved.
	B	1/10	
	C	1/9	
	D	NA	
	E	1/5	
	F	NA	
	G	NA	
	H	2/6	
	I	2/7	
	J	5/8	
	TOTAL	17/53 (32.1%)	

Study	Box	Score	Comments
Health Literacy Measure for Adolescents (HELMA): Development and Psychometric properties.	A	8/8	Well Reported overall but lacked details about the re-test.
	B	6/10	
	C	6/11	
	D	4/5	
	E	5/6	
	F	NA	
	G	NA	
	H	4/6	
	I	5/7	

	J	5/9	
	TOTAL	43/56 (76.8%)	
Study	Box	Score	Comments
Development of the Health Literacy Assessment Scale for Adolescents (HAS-A)	A	6/9	Did not adequately describe if there were any missing items.
	B	1/10	
	C	1/9	
	D	4/4	
	E	3/6	
	F	6/10	
	G	NA	
	H	1/6	
	I	6/13	
	J	3/9	
	TOTAL	31/76 (40.8%)	

Study	Box	Score	Comments
Psychometric evaluation of the Chinese version of short-form test of functional health literacy in adolescents.	A	7/8	No re-test conducted.
	B	3/10	
	C	3/9	
	D	3/4	
	E	4/5	
	F	5/9	
	G	12/13	
	H	2/6	

	I	4/13	
	J	3/8	
Study	Box	Score	Comments
	TOTAL	46/85 (54.1%)	
Can the Newest Vital Sign Be Used to Assess Health Literacy in Children and adolescents?	A	NA	Unclear reporting. Not sure if there was an analysis of whether the terminology was appropriate for the age groups.
	B	NA	
	C	0/9	
	D	2/4	
	E	0/5	
	F	1/9	
	G	NA	
	H	0/6	
	I	1/13	
	J	4/8	
	TOTAL	8/54 (14.8%)	

Study	Box	Score	Comments
Measuring Adolescent Functional Health Literacy: A Pilot Validation of the Test of Functional Health Literacy in Adults.	A	NA	Unclear whether there was an analysis of whether the terminology was appropriate for the age groups. No description of missing items.
	B	1/10	
	C	1/10	
	D	3/4	
	E	NA	
	F	NA	
	G	NA	
	H	NA	

	I	5/13	
	J	5/8	
	TOTAL	15/45 (33.3%)	

Appendix F Population Statistics for Dorset and Hampshire (Census, 2011).

		Area		
		Dorset	**Hampshire**	**UK**
Demographic variable	**Aged 0-15 years**	15.9%	18.4%	17.6%
	White British	95.5%	89%	80.5%
	BME	4.5%	8.2%	13%
	Claimant unemployment	0.8-0.9%	2.9%	4%
	Lone parent households	7.6%	19.7%	25%

Appendix G Population and Demographic Statistics by School Catchment Area (Census, 2011).

School	Total Population	Proportion of White British ethnicity (%)	Proportion of 0-15 age group (%)	Lone parent households (%)	Self- report of health status (% of total population)
School A	12,059	94%	17%	7.8%	45.8% very good health
					35.6% good health
					4% bad health
					1% very bad health
School B	8,293	96.4%	18.2%	9.9%	47.1% very good health
					34.4% good health
					3.6% bad health
					1% very bad health
School C	7,412	95.5%	8.2%	9%	44.5% very good health
					35.1% good health
					4.1% bad health
					1% very bad health
School D	150,710	91.9%	17.8%	9%	44.5% very good health
					34.9% good health
					4% bad health
					1.2% very bad health
School E	15,649	97.7%	17.1%	Unknown	45.15% very good health
					35.87% good health
					3.81% bad health
					1.08% very bad health
	18,133	95.5%	13.4%	7%	40.2% very good health

School	Total Population	Proportion of White British ethnicity (%)	Proportion of 0-15 age group (%)	Lone parent households (%)	Self- report of health status (% of total population)
School F					36.8% good health
					4.7% bad health
					1.1% very bad health
School G	49,650	95.1%	15.6%	7.3%	42.3% very good health
					35.8% good health
					4.6% bad health
					1.1% very bad health
School H	9,724	92.5%	17%	8%	45.3% very good health
					34.3% good health
					3.9% bad health
					1.1% very bad health
School I	49,650	95.1%	15.6%	7.3%	42.3% very good health
					35.8% good health
					4.6% bad health
					1.1% very bad health
School J	20,135	94.2%	16.6%	8.7%	45.3% very good health
					35.2% good health
					4.2% bad health
					1.1% very bad health

Appendix H Summary of Participant Demographics and Experience (Data collected during Interview).

Participant	Age Group	Teaching Experience
A	40-60	Teaching for: 23 years. Teaching PSHE: Over 10 years
B	40-60	Teaching for: 30 years. Teaching PSHE: 15 years.
C	40-60	Teaching PSHE: 20 years.
D	25-39	Teaching for: 5 years. Teaching PSHE: 2 years.
E	40-60	Teaching for: 11 years. Teaching PSHE: 7 years.
F	40-60	Teaching PSHE: 15 years.
G	40-60	Teaching for: 15 years. Teaching PSHE: 8 years.
H	25-39	Teaching for: 13 years. Teaching PSHE for: 7 years.
I	40-60	Teaching for: 26 years. Teaching PSHE for: 18 years.
J	25-39	Teaching for: 14 years. Teaching PSHE for: 2 years.

Appendix I Table of PSHE lesson structure and content by school (Data collected from interview).

NB: Some schools followed the same curriculum set by the local council, i.e., School A, C, G, I.

School	**Frequency of PSHE sessions (received by year groups 7-11)**	**Delivery of PSHE sessions**	**Evaluation of PSHE sessions.**	**Content of RSE curriculum (all year groups).**	**Content of PSHE curriculum associated with alcohol (all year groups).**
School A	Once weekly.	Tutors expected to cover PSHE topics in tutor time, at their discretion. External agencies are used to deliver sessions on alcohol and drug use once yearly.	Feedback questionnaire that evaluates the usefulness of the session.	The value of family and marriage. Managing relationships. Self-respect and empathy. Making sensible choices. Conflict resolution. Physical development and puberty.	Risks of alcohol use.

School	Frequency of PSHE sessions (received by year groups 7-11)	Delivery of PSHE sessions	Evaluation of PSHE sessions.	Content of RSE curriculum (all year groups).	Content of PSHE curriculum associated with alcohol (all year groups).
				Human sexuality, reproduction, sexual health, emotions and relationships.	
School B	Once fortnightly	Timetabled lesson delivered by tutors of each class.	Feedback from students at the discretion of their tutors.	Physical and emotional changes during puberty. Reproduction, contraception, STIs in the context of good relationships. Peer pressure Delay of early sexual activity	Health risks of alcohol Peer pressure

School	**Frequency of PSHE sessions (received by year groups 7-11)**	**Delivery of PSHE sessions**	**Evaluation of PSHE sessions.**	**Content of RSE curriculum (all year groups).**	**Content of PSHE curriculum associated with alcohol (all year groups).**
School C	Once monthly	Timetabled sessions, sometimes taught, sometimes with the use of external agencies once yearly.	Feedback questionnaire that evaluates the usefulness of the session.	See School A.	Health risks of excessive alcohol use. Peer pressure.
School D	Once weekly	Timetables sessions. Sometimes taught and sometimes using external agency (rarely, less than once per year).	Feedback forms about quality and content of lessons.	Forming and maintaining relationships. Risks, grooming. Contraception. STI prevention.	Addiction awareness.
School E	Once monthly	Timetabled into a longer tutor-time weekly. Also uses external, specialist	None	Delaying the time to becoming sexually active Puberty and conception. Contraception	Alcohol facts. Reducing risks. Pressure and negotiation.

School	**Frequency of PSHE sessions (received by year groups 7-11)**	**Delivery of PSHE sessions**	**Evaluation of PSHE sessions.**	**Content of RSE curriculum (all year groups).**	**Content of PSHE curriculum associated with alcohol (all year groups).**
		theatre groups to put on productions about some of these issues (once every 6 months).		STIs Personal safety and grooming. Parenthood.	
School F	Once monthly	Timetabled into a longer tutor-time.	None	Relationships Reproduction and contraception. Sexual harassment and assertiveness. Sex and social relationships. STIs	Effects and risks of alcohol use.
School G	Once fortnightly.	Timetabled lesson.	Feedback questionnaire that evaluates the usefulness of the session.	See School A	Risks of alcohol use. Alcohol facts.

School	**Frequency of PSHE sessions (received by year groups 7-11)**	**Delivery of PSHE sessions**	**Evaluation of PSHE sessions.**	**Content of RSE curriculum (all year groups).**	**Content of PSHE curriculum associated with alcohol (all year groups).**
School H	Once monthly.	Lessons provided in tutor time at the discretion of tutor.	None	Reproduction and contraception within the context of marriage.	Facts and addiction.
School I	Once fortnightly.	Lesson provided in tutor time.	Feedback questionnaire that evaluates the usefulness of the session.	See School A	Alcohol risks and facts.
School J	Once weekly.	Timetabled lesson.	None	Reproduction and contraception Managing relationships Noticing and reporting abuse Costs of parenthood.	Alcohol risks and facts.

Appendix J Interview Schedule

NB: changes made to the interview schedule are indicated in red ink.

J.1 Introduction (after consent is gained)

My name is Pav Premkumar, a PhD student from the Southampton University. As you've read from the information sheet: the purpose of the study is to investigate alcohol and sexual health literacy in adolescents. I will begin by asking some general questions about you and PSHE/SRE sessions in the school then progress to some more in-depth questions. I have also provided a definition of health literacy (printed out) which you can refer to during the interview. Health literacy is:

"An individual's capability to obtain, understand, process and apply health information in order to make informed, health related decisions for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy."

In this interview I ask you to focus on health literacy with regards to alcohol and sexual health. During the interview, please answer in as much detail as possible and focus your answers, where possible, on alcohol and sexual health education. If you're comfortable with the information given to you so far, we can start the interview.

J.2 Opening Questions

- How long have you been a PSHE/SRE lead?
- Have you always taught PSHE within your career as a teacher?
- How often do PSHE/SRE sessions occur in your school?

J.3 Main Questions

In the following section I will be asking you about a model of alcohol and sexual health literacy in adolescence (give participant a copy of the model). The point of the model is to capture all of the information, skills and outcomes of alcohol and sexual health literacy in adolescents. The personal attributes section refers to any skill or attribute that the individual possesses that impacts sexual health

literacy. The external factors section refers to anything in the adolescent's environment that affects their health literacy. The factors that are represented by larger circles are thought to be more important in the adolescent's life. Finally, the outcomes and behaviours section refers to the outcome of being sexual health literate.

The following questions were combined into one set for both models as they seemed repetitive in the pilot interviews.

In the sexual health literacy model:

- Are there any social, cognitive or emotional skills that you would add/ remove?
- Are there any external factors in this model that you would add/remove?
- Do you think that skills and factors have been represented fairly/unfairly in this model?
- Which factors in your opinion have more or less influence on an adolescent's sexual health literacy?
- Do you think the sexual health outcomes shown in the model are relevant for adolescents now?
- Are there any outcomes that you would add/remove?

In the alcohol health literacy model:

- Are there any social, cognitive or emotional skills that you would add/ remove?
- Are there any external factors in this model that you would add/remove?
- Do you think that skills and factors have been represented fairly/unfairly in this model?
- Which factors in your opinion have more or less influence on an adolescent's alcohol health literacy?
- Do you think the alcohol related outcomes shown in the model are relevant for adolescents now?
- Are there any outcomes that you would add/remove?

Highlighted questions were removed as the participants from the pilot study indicated that the impact of external factors would be dependent on each adolescent's personality and knowledge.

- Would a measure of AHL/SHL based on the models be useful?
- How would you utilise a measure of AHL/SHL?
- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health education?
- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

The following questions were added to explore the research questions further and to explore a current theme in PSHE/RSE education:

- What are your thoughts on SRE becoming compulsory from 2019?
- Do you feel prepared for this?
- How do you think this will impact the provision of alcohol education?
- In an ideal world, what would the perfect PSHE/SRE session involve?

J.4 Close Interview

Thank you once again for your time. I would like to remind you again that you are able to withdraw the information that you have provided until the point of data transcription without fear of repercussion. The data you have provided will be used to develop models of alcohol and sexual health literacy focusing on the adolescent age group.

Appendix K Interview Transcripts

K.1 Participant A:

- How long have you been a PSHE/SRE lead?

  10ish years.

- Have you always taught PSHE within your teaching career?

  I've been teaching for 23 years, my background is in Biology so no, not directly until the last 10 years or so.

- How often do PSHE/SRE sessions occur in school?

  Once a week.

- How is alcohol and sexual health knowledge evaluated in your school?

  We have feedback questionnaires designed by the council, but it only evaluates what the student thought of a PSHE lesson than what they've learnt. I guess no we don't evaluate knowledge as such.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  No, I don't think so.

- Are there any external factors in this model that you would add/remove or change?

  No.

- Do you think the health outcomes shown in the model are relevant for adolescents now?

  Yes. Probably more than what we currently teach.

- Can you expand on that?

  Well, we wouldn't really talk about pleasure as an outcome of sex. In the lessons the outcome of sex unless you use contraception is a baby or an STI

- Are there any outcomes that you would add/remove?

  No not really.

- Would a measure of AHL/SHL based on the models be useful?
  (a) How would you utilise a measure of AHL/SHL?

  I do think that would be useful. It may be useful for something like this to be used by teachers to make a reflective decision about their students. So, for example, the teacher would use what they know about the student to form some sort of score based on these models. I think I would use a measure to see what my students needed in terms of alcohol and sexual health education.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

  No but I think we're doing the best we can given that we are teachers, not parents. There are conversations that we simply can't have with the students. I think there are a lot of general skills in the model that we don't tend to think about. The focus tends to be on knowledge rather than skill, but I think that can be said for any subject.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

- *That is a tricky question. I think there is a definite need for more training. I think you need a background or at least an understanding in some if not all of the subjects, some degree of expert knowledge[49Expertise]. I try to provide some extra training sessions for the other teachers myself when I can, using my own training or limited expertise. The issue is that the training costs money. The school*

doesn't have the budget for that, and it will never be a priority compared to sending teachers to other subject relevant training or conferences.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

  Funding for training and provision is a barrier. It can be a matter of the blind leading the blind sometimes. Also, some teachers also just feel that it isn't their job so someone else should do it

- What are your thoughts on SRE becoming compulsory from 2019?

  I think it's an excellent idea. I think if you're a good school who cares about your students, you should be doing it anyway.

- Do you feel prepared for this?

  Yes, I don't think things are really going to change for us because we're quite thorough with our SRE.

- How do you think this will impact the teaching of alcohol education?

  I don't think it will change really. Again, our school covers alcohol use mainly in other subjects so there wouldn't be any issues surrounding timetabling.

- In an ideal world, what would the perfect PSHE/SRE session involve?

  Oh, I think it would be delivered by an expert in that field Someone who really knows what they're talking about. Someone who is relatable to the students. I think that's very important!

- Would this be a teacher?

  No, I don't think so. We don't have the time or training for that.

K.1.1 Notes made during and after interview:

- Age 46, female
- teaching for 23 years
- teaching PSHE for 10 years.

Became a specialist PSHE teacher, background in biology.

Overall themes:

- Focus of risk in curriculum
- Teachers not best placed to deliver PSHE/SRE
- Positive about compulsory SRE.
- Lack of training and time for teachers.
- Assessment required to assess needs of students.

K.2 Participant B:

- How long have you been a PSHE/SRE lead?

  I've been a specialist PSHE/SRE teacher for 15 years.

- Have you always taught PSHE within your teaching career?

  No, I started off as a Social Sciences teacher…which I don't think exists in many schools now. It was basically Psychology and Human Biology. I've been a teacher over 29-30 years.

- How often do PSHE/SRE sessions occur in school?

  There is a timetabled lesson once every two weeks.

- Is this always the case?

  Yes, I think so unless there is a very good reason.

- How is alcohol and sexual health knowledge evaluated in your school?

  You know I can't say that is evaluated. Unless it's part of a science exam. The tutors may ask for feedback about the lessons.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

No.

- Are there any external factors in this model that you would add/remove or change?

  No.

- Do you think the health outcomes shown in the model are relevant for adolescents now?

  Oh yes! I like the fact that it talks about pleasure and autonomy in outcomes. That's very important. Consent is a big topic right now.

- Are there any outcomes that you would add/remove?

  Maybe understanding and identifying abuse in sexual health, and confidence to speak out about it. That's quite relevant now. I think something about enjoyment in alcohol would be good, because why would everyone drink if it was a terrible thing. It's a confusing message for adolescents.

- Would a measure of AHL/SHL based on the models be useful?
  (a) How would you utilise a measure of AHL/SHL?

  I think a measure would need to be more of a decision aid for teachers. I think I would use it to say okay I have this student, I can look at the model and see that these factors like relationships with parents and friends can put them more at risk, like what individual factors can I target to overcome that? I think it's just a useful diagram for teachers to remind them of all the things that can go wrong and what we need to do as a result.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

  No! So, my focus recently has been about modernising our current PSHE curriculum. It's a big concern that now we're talking about alcohol and sexual health issues too late and so the students are disengaged. I can very distinctly remember a couple of years ago one of the teachers approached me as she felt uncomfortable delivering lessons about contraception and the costs of pregnancy as a couple of the students were expecting or were already parents. Also, I think that focus on outcomes is

missing. We only look at giving information, we're not following up to see what students are doing with the. So, it misses out all the behavioural and emotional factors in decision making.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

  I think it needs to be really embedded into teacher training. With technology going the way it is, there are definitely things that students face now that they haven't ever faced before. If we're going to teach them something then we need to be on the forefront, really understand what it means to be a student today, the social pressures. We can't assume the curriculum from ten years ago will still work today.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

  Well with sexual health its easy. Sex is awkward to talk about and we have that typical British stiff upper lip culture. It comes from both sides; I don't think teachers or students are comfortable discussing it with each other. I think as a teacher it's okay for you to lay out the facts but anything more than that and you're worried that there will be repercussions to what you've discussed. You have to be very careful as a teacher and protect yourself.

- What are your thoughts on SRE becoming compulsory from 2019?

  It's a good idea in principle but as far as I know they haven't put any more funding into the plan. In fact, they've cut funding to really important sexual health and alcohol services in recent years. On top of that schools are skint as it is, so if the school really cares they'll have to redistribute money meaning that everything else suffers as a result. I don't think parents will be too happy if we say: you have to pay for your child's textbooks, so they can learn about sex and relationships!

- Do you feel prepared for this?

  No! We have no idea what the government is going to want, and we need at least a year to prepare.

- How do you think this will impact the teaching of alcohol education?

  I think the schools that care will just offer a comprehensive PSHE program in general instead of just SRE, so in that case it would improve alcohol education, but then the other side is that some schools will just concentrate on SRE to the detriment of other topics like alcohol.

- In an ideal world, what would the perfect PSHE/SRE session involve?

  Relevant topics and information. Teaching skills not just reciting facts!

- Who would teach these sessions?

  I don't think that teachers are doing badly but I think other people could do better. I think other professionals are key. I was in a school once where they had PSHE lessons taken by someone from the Southampton Rape Crisis and honestly the level of engagement from the students was great because here was someone who came in, could answer any question and you wouldn't have to see them every day so there wouldn't be any perceived judgement. I just think a lot of teachers do feel that PSHE isn't their responsibility because it crosses a line, and you have to protect yourself.

K.2.1 Notes made during and after interview:

- Age 53, female
- teaching for 30 years
- teaching PSHE for 15 years.

Became a specialist PSHE teacher, background in social sciences.

Overall themes:

- Outdated curriculum
- Teachers can't cross professional barrier
- Compulsory SRE good but difficult to practice- funding
- Assessment based on risk
- Identifying abuse-shl outcomes
- Enjoyment- ahl outcomes

K.3 Participant C

- How long have you been a PSHE/SRE lead?

  Oh over 20 years now.

- Have you always taught PSHE within your teaching career?

  Yes! One of the few I should think!

- How often do PSHE/SRE sessions occur in school?

  It's timetabled once a month.

- How is alcohol and sexual health knowledge evaluated in your school?

  Some of the PSHE sessions have a feedback questionnaire attached, not that we do anything with them. I guess we just keep an eye on certain trends like student pregnancy rates.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  It's quite detailed, isn't it? I guess that's the point, maybe it needs to be simplified? I think it can be a bit much to look at and pay attention to all at once. I wouldn't add anything anywhere though.

- Do you think the health outcomes shown in the model are relevant for adolescents now?
  Yes, very.

- Would a measure of AHL/SHL based on the models be useful?
  (b) How would you utilise a measure of AHL/SHL?

I don't know if any assessment tool would be able to account for all these factors but if it could then it could be used by schools to see where the weaknesses in their PSHE/SRE lessons are.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

No, I don't think that's possible. I think covering everything is a joint effort from all the external factors your model and the student themselves. Teachers do have a duty of care, but I think sexual health is still a very taboo subject, and until there is a society change that removes that taboo, teachers aren't the best placed to deliver the knowledge.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

I think there is some really good alcohol and sexual health training out there right now. I think delivery is the key. Training needs to focus on building knowledge, but the teachers need to know how to deliver the lessons too.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

I would think time and the fact that PSHE or SRE is quite underrated as a subject. It isn't the ideal situation but the priority it on the academic…so PSHE/SRE sessions are timetabled for once a month. We don't have time to fit it into tutor time around registration because that's only about 15-20 minutes a day if that. We're lucky to even have that to be honest. Another big one is funding. I have a lot of teachers who want to do training in PSHE and SRE, but we just don't have the funding to send everyone who wants to go. It's a shame really. I also think there might be a slight tendency for PSHE to come across as preachy. Like the whole point of the lessons are to give students facts and then scare them into abstaining from having sex or drinking. We really need to start moving away from that.

- What are your thoughts on SRE becoming compulsory from 2019?

I think it's good, but the message is a bit confusing. I think it would have been better to make SRE and PSHE compulsory. I think you'll have a lot of people putting effort into teaching SRE and other valuable lessons like drug and alcohol use, managing finances, wellbeing etc will get left behind. But, if PSHE and SRE were made compulsory I think there would be more of a joint effort from schools to really look after the wellbeing of their students in a comprehensive way. I think they're missing a trick here.

- Do you feel prepared for this?

Not particularly, not because I don't think that we're unprepared content-wise, but I think I'm just not too sure how things are going to change for the better in schools that already provide SRE.

- How do you think this will impact the teaching of alcohol education?

It will inevitably fall to the side-lines. Unless it's mentioned in the context of sexual health.

- In an ideal world, what would the perfect PSHE/SRE session involve?

In an ideal world I think it would be about collaboration and feedback. Working with the students to assess their actual needs and using that to plan lessons.

K.3.1 Notes made during/ after the interview:

- Male, 50, PSHE specialist teacher for over 20 years

Main themes:

- Teacher workload
- Importance of PSHE/SRE as a subject
- Lack of Government guidance
- Diminishing importance of alcohol education
- Assessment would be too wide-ranging but could be used to improve lessons.
- Model may require simplification

K.4 Participant D:

- How long have you been a PSHE/SRE lead?

  I've been a lead for 2 years; can't entirely say I did teach PSHE before that anyway. I've been teaching for 5 years.

- Have you always taught PSHE within your teaching career?

  I'm a history teacher by trade.

- How often do PSHE/SRE sessions occur in school?

  It's supposed to be an hour of PSHE a week until sixth form, but this is usually the first lesson to go if teachers need that time for something else.

- How is alcohol and sexual health knowledge evaluated in your school?

  It's not! If it isn't happening during school time it isn't really a concern. Also, there's too much to cover, how would we evaluate that? Without asking horrendously inappropriate questions from our students! Then they probably wouldn't be honest!

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  I'm not sure where it would fit in but put empathy in there. I think when you're dealing with issues around consent etc. empathy would play a big part in how much you understand about someone else's needs, I guess. In terms of alcohol, I would put empathy in there because of peer pressure. I think a lot of the people that exert peer pressure lack empathy.

- Are there any external factors in this model that you would add/remove or change?

  No. They all seem good and relevant. I can't think of anymore. Maybe something to do with siblings or guardians? Just in the sense that not all kids live with their parents.

- Do you think the health outcomes shown in the model are relevant for adolescents now?

Yeah, I think it's pretty accurate. It's about enjoying yourself responsibly at the end of the day.

- Are there any outcomes that you would add/remove?

  Maybe something about enjoyment and abstaining in alcohol outcomes. It says responsible drinking but just because you're drinking responsibly it doesn't mean that you're enjoying the act. Also, not everyone wants to drink so maybe being able to choose whether you abstain or drink.

  I guess its covered by "pleasure or consensual sex" but in the sexual health outcomes, maybe something about knowing the right information for you? Say for example that you're gay, I think that they have a right to know what sexual intercourse then would involve because we only really talk about the mechanisms of heterosexual intercourse.

- Would a measure of AHL/SHL based on the models be useful?
  (c) How would you utilise a measure of AHL/SHL?

  I think it gives you the factors that you should be looking for in each student…I'm not sure what the evaluation would actually look like but at school I guess we're looking at targeting those individual factors aren't we? Something that takes those into account[s] but then it would also be useful to have the general data on sexual health and alcohol.
  Then we can really look at what our students need and how we should be targeting that.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

  Yes and no. Yes, in terms of the very minimum knowledge that students need to get by, just about. No, it doesn't cover enough. It definitely leaves a lot of the emotional factors out. The curriculum tends to be a bit on the scaremongering side. It makes us teach the worst-case scenario hoping that will prevent a lot of the negative outcomes[2] and ignores the fact that sex and alcohol can actually be enjoyed responsibly. It also tends to completely ignore anyone who isn't heterosexual and the gender they were born with. It doesn't really provide for homosexual or transgender individuals.

- Generally, what are the learning objectives that students are expected to achieve in sessions focused on (a) alcohol? (b)sexual health?

  I guess if I was going to sum it up: know your units and know your contraception! Also, the biological mechanisms or effects for both. For example, physical effects of alcohol and pregnancy.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

  Honestly? At this point in time, any training will do! In an ideal world I guess we would be trained by professionals in alcohol and sexual health. A lot of teachers, myself included, would love to feel confident with those subjects.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

  Training is a big one. I don't think we get enough specialist training. Time is another, we often don't even have the time to properly plan these lessons ourselves and then we're too scared to add anything because we don't want to be deemed unprofessional. Teachers must stay removed and professional at the end of the day. If we did have the training though we still wouldn't be able to deliver an effective session in SRE. I don't think students would want to have those kinds of open conversations about sexual health with their teachers.

  I also feel a bit awkward being male and speaking to female students about sexual health. I will obviously never be able to understand sex and sexual health from a female point of view. Like for example when I talk about the menstrual cycle. I really am just reading out of a book or going by written information. I can't really empathise or answer any real questions about it.

- What are your thoughts on SRE becoming compulsory from 2019?

  I see why the Government think it's a good start but for all the reasons I've just mentioned, I don't see how it's going to work.

- Do you feel prepared for this?

  Not at all. Or I don't feel any more prepared than before. They (the Government) haven't set out a plan or guidelines for us yet. Are we going to receive more funding just for this? Because without that we're not magically going to have any more time or training than we do now. Just more instructions I guess with no real intention behind it.

- How do you think this will impact the teaching of alcohol education?

  I'm not sure. Obviously, it will still be covered in some other subjects like the sciences. That may be enough. It will be downgraded in terms of importance along with other subjects in PSHE, if PSHE doesn't get scrapped completely to be replaced by SRE.

- In an ideal world, what would the perfect PSHE/SRE session involve?

It would be delivered entirely by external speakers or someone who isn't a teacher but works as the PSHE person in schools. They would be an expert in all the subjects that PSHE/SRE needs to cover and would be able to maybe have those chats that we as teachers can't have to properly educate students. I mean we have teachers that only teach one subject across the school. I don't see how this would be different. Like I said, I'm not sure a teacher would work because of the teacher- student relationship. But maybe a healthcare worker or similar. Obviously, time as well. More time to deliver PSHE sessions.

K.4.1 Notes made during and after interview:

- Age 30, male
- teaching for 5 years
- teaching PSHE for 2 years.

Not a specialist PSHE teacher, teaches history but took on the responsibility as PSHE lead and attended training because of that.

Overall themes:

- Lack of expertise
- High workload
- Unprepared for compulsory SRE
- Confused about guidance
- SHL outcomes- relevant knowledge- diversity
- AHL- abstinence, enjoyment

K.5 Participant E:

- How long have you been a PSHE/SRE lead?

  About…err…7 years.

- Have you always taught PSHE within your career as a teacher?

  No, but I was doing pastoral work and RP before that, I've been teaching in total for about 11years.

- How often do PSHE/SRE sessions occur in school?

  We have them weekly in tutor time, but we often have an extra day every few months where theatre groups put on a production related to PSHE/SRE topics.

- How is alcohol and sexual health knowledge evaluated in your school?

  I don't think it's really evaluated as such. I think you know when something isn't right with your students, so we're trained in spotting changes in behaviour. I guess that could be a way we kind of keep an eye on alcohol and sexual health. It would be a lot easier if you had a tool to assess student knowledge and then standards to compare them to, like with every other lesson. That is what we're inherently lacking in PSHE, so it makes lesson planning difficult because you have no way to measure what the students already know.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  I think there needs to be something about emotional intelligence. I read a very interesting article the other day about how emotional intelligence isn't something that you're born with but something that you obtain.

- Do you think the health outcomes shown in the model are relevant for adolescents now?

  Yes.

- Are there any outcomes that you would add/remove?
  I think part of understanding the facts is knowing what sex and alcohol choices entail for different cultures, identities and sexualities.

- Would a measure of AHL/SHL based on the models be useful?
  (d) How would you utilise a measure of AHL/SHL?

I think some form of interactive measure. Did you do the theory driving test where you had to identify risks? Something like that where student can interact with an environment to spot risks. I'd use it just generally to see how my students are doing, what we need to work on as a school.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

Generally, the curriculum doesn't tend to focus on skills. The curriculum tends to be about knowledge. Looking at the model what stands out is that the curriculum doesn't really cater for different cultures or disability. I think that we are letting these students down in a big way. We're ignoring them which means that we're discriminating. I would love to see an inclusive curriculum, but I know that a lot of parents would have problems with their students learning about gay relationships.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

I think training needs to focus more on inclusion and sensitivity. We're faced with such a lovely and diverse student population now that we need to be aware of how the differences among students might affect their choices in alcohol and sexual health.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

I think the facilitators are that most teachers do want to do a good job when it comes to PSHE and the students at the end of the day want to learn about alcohol and sexual health and that's important. The barrier I guess is that fear that we're coming in too late to teach them things they already know or have an idea about. There's also no standard of PSHE education so by secondary school you have a real mishmash of students from different schools with different knowledge and skill levels in the subject. It's hard because that means you assume ignorance and start at the beginning then just to make sure everyone gets to the same place.

- What are your thoughts on SRE becoming compulsory from 2019?

  I was happy about that. I think it's great.

- Do you feel prepared for this?

  I'm not sure. I'm confident that our school are doing well in alcohol and sexual health education but it's hard to know if we'll have to change anything without any real guidelines yet on what we're supposed to be doing. Just little things like will there be a minimum amount of SRE hours required per week? Its things like that, that can really throw things into chaos if they aren't introduced early enough.

- How do you think this will impact the teaching of alcohol education?

  Well depending on what the guidelines call for I don't think things will change much in this school because we'll continue with our PSHE/SRE program. I can imagine in schools that don't provide PSHE that the bare minimum will be done so it will just be SRE and nothing else.

- In an ideal world, what would the perfect PSHE/SRE session involve?

  I think more theatre productions would be great. One of the advantages of having that is that students don't feel like they're secretly being judged by the teachers for what they're talking about. I mentioned before, we need to be more inclusive in PSHE/SRE. It's awkward enough for some teachers to teach SRE, not really so much alcohol. Add in things like disability and I do not blame them for not knowing where to start.

K.5.1 Notes made during and after interview*:*

The participant was very pro inclusion and diversity and generally seemed to feel that the school had a high standard of PSHE/SRE provision.

- Female, age 40. Teaching for 11 years, Involved in PSHE for 7 years. Background in pastoral work.

Overall Themes:

- Curriculum is discriminatory
- Lack of standardisation across schools in PSHE
- Confident about school's ability PSHE/RSE provision
- Lack of guidance from government
- Interactive measure of student needs
- Risk assessment
- Models- understanding choices of others

K.6 Participant F:

- How long have you been a PSHE/SRE lead?

  All my career really. 15 years. I was trained through a school that needed PSHE teachers.

- How often do PSHE/SRE sessions occur in school?

  Once a month. They're during tutor time.

- How is alcohol and sexual health knowledge evaluated in your school?

  There isn't any formal evaluation of alcohol and sexual health knowledge.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  I think the role of emotional health can be emphasised or expanded upon. Something about ability to manage emotions.

- Do you think the health outcomes shown in the model are relevant for adolescents now?

I quite like how it has a focus on positive outcomes. Quite frequently there can be a focus on the negative in this subject, so basically yes, I do think they're relevant.

- Are there any outcomes that you would add/remove?

  No.

- Would a measure of AHL/SHL based on the models be useful?
  (e) How would you utilise a measure of AHL/SHL?

  Some sort of situation-based approach may work quite well. I've taught PSHE lessons where students had to evaluate what their response would be in specific situations. That can give quite a good insight into their decision-making skills and how much they know about consequences etcetera. In terms of use, I think it would help level PSHE education if every school was working towards getting their students to the same place.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health? What is and isn't included?

  There are a lot of shortcomings with the curriculum. I think alcohol education is a bit lacking in terms of substance, it's usually part of the drug use module. The sexual health curriculum…erm…obviously there are gaps because I think certain changes in society and culture have made a huge difference in sexual health that the curriculum hasn't been able to keep up with. Like the fact that students have access to quite inappropriate content for through mobiles and laptops. We've only started looking into that.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

  I think the training needs to start with bridging the generation gap. I hear so much on the news about the younger generation being the 'snowflake' generation. Like they can't cope with anything. The truth is that they have more to cope with than any generation before. I think teachers are overall sensitive to that, it's more that they can sympathise but not empathise.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

I would say that 70% of teachers that I meet have never received any training. The teachers that have had some training usually still haven't had more than a vague overview of how to teach rather than what to teach[5]. It should really be a more comprehensive part of teacher training. Training would help, not just a one-day training session on how you might deliver these lessons but actual in depth, or how to approach awkward topics and safeguarding but career-long opportunities to improve knowledge on a range of topics for a range of audiences. There are a lot of barriers. A majority of teachers hate teaching RSE, so it isn't taught particularly thoroughly. The topic is still a source of awkwardness. A lot of teachers feel like they can't maintain that professional barrier and teach sex. I think a lot of it is to do with our culture, we're not great at communicating about sex and sexual health. It's very much a taboo subject.

- What are your thoughts on SRE becoming compulsory from 2019?

Well, it's about time!

- Do you feel prepared for this?

How prepared are we? Er…. well, I guess we have what we've had over the past few years for SRE. We haven't prepared anything else as of yet because quite frankly we haven't received any direction in terms of what we should be covering above what we have already been teaching. I don't know if we're prepared or not.

- How do you think this will impact the teaching of alcohol education?

I think it will become less of a priority than it already is.

- In an ideal world, what would the perfect PSHE/SRE session involve?

I'm not sure that ideally, teachers should be the main source of information for PSHE or SRE. I obviously took on this role because I believe that there is a responsibility for schools to provide PSHE…its difficult

because although I believe this, I don't think that school should be the only source of all alcohol and sexual health knowledge. We should be providing supplementary information.

K.6.1 Notes made during and after interview:

- Female, age 51. Teaching PSHE for 26 years.

General themes:

- Lack of teacher training
- Teachers lack understanding of student issues
- Alcohol education is less developed than SRE
- Lack of Government guidance

K.7 Participant G:

- How long have you been a PSHE/SRE lead?

  8 years? Yes, 8. Or near that.

- Have you always taught PSHE within your teaching career?

  I was a policewoman before then decided I couldn't do that forever, so I trained to be an English teacher but obviously I had a lot of interest in this because of my background so here I am! I've been teaching now for 15 years.

- How often do PSHE/SRE sessions occur in school?

  One lesson every two weeks.

- Are there any specific resources that you use for alcohol and sexual health education?

  Not really, we use a lot of different resources depending on the lesson.

- How is alcohol and sexual health knowledge evaluated in your school?

  We ask for student feedback on the lessons, like how much they learnt, what we can improve for next time. That sort of thing.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  I think adding empathy to individual factors would be a good idea. The more empathetic students tend to make the better decisions.

- Do you think the health outcomes shown in the model are relevant for adolescents now?

  I think they're relevant to all adolescents at any time or place.

- Are there any outcomes that you would add/remove?

  They're thorough, I don't think there is anything to add.

- Would a measure of AHL/SHL based on the models be useful?
  (f) How would you utilise a measure of AHL/SHL?

  It would be useful to have something you know, on paper, with results, that we could use to look at what the students lack and what we should do to overcome that. It should be quite user-friendly though. For students and teachers. I guess it's a bit hard to know what that would look like because how do you measure skills and behaviours?

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

  Not everything, but I think we have to take responsibility as PSHE teachers and teachers in general and fill in those gaps and endeavour to improve our knowledge and look at how we're teaching these issues.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

  I think aside from what is already out there, there needs to be training that focuses specifically on raising the confidence of teachers in teaching about alcohol and sexual health. I do really feel that that's lacking at the moment, and it effects teachers of all ages.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

  Subject knowledge is a big one. No one would expect an English teacher to be able to pick up the Maths curriculum and teach it with expertise without any prior training, so why do we expect it to happen with alcohol and sexual health education? There is a massive generation gap. There is no way that we, as teachers, can relate to students more than in a very general way. There simply isn't the shared experience there.

- What are your thoughts on SRE becoming compulsory from 2019?

  I'm quite positive about it.

- Do you feel prepared for this?

  I don't have much reason to feel unprepared at the moment, but we don't know what we're doing yet so that's probably why.

- How do you think this will impact the teaching of alcohol education?

  I think with the time constraints, if schools have to do SRE then they will probably forgo covering any other topic including alcohol use.

- In an ideal world, what would the perfect PSHE/SRE session involve?

  The lessons would age-appropriate. They wouldn't be too soon or too late in the student's life. There would also be a weekly time slot.

- How would these sessions be delivered?

  I think it might be something where potentially the students go somewhere to talk to experts in that topic, or the experts come to the school. Those experts could be teachers, I'm not saying that they can't be, but I don't think students and teachers are ready just yet to start having honest conversations about alcohol and sexual health. Someone like a school nurse or school counsellor might be a bit better placed.

K.7.1 Notes made during and after the interview:

Female, Age 58. Teaching for 15 years, involved in teaching PSHE for 8 years. Career change- used to be a policewoman.

General themes:

- Awkward subject for teachers and students
- Lack of expertise
- Gaps in curriculum
- Models- empathy

K.8 Participant H:

- How long have you been a PSHE/SRE lead?

  7 years.

- Have you always taught PSHE within your teaching career?

  I started off teaching Psychology then acted as the safeguarding lead. In total I've taught for 13 years.

- How often do PSHE/SRE sessions occur in school?

It's a lesson monthly replacing tutor time.

- Are there any specific resources that you use for alcohol and sexual health education?

Not particularly, we just have a collection on the shared drive that tutors can use. When someone finds something new or useful, they just put it on there and I oversee and update it when I can.

- How is alcohol and sexual health knowledge evaluated in your school?
Ooh good question. Short answer is it's not!

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

They're (the models) *quite comprehensive and detailed. They show all the contextual factors that lead to alcohol health literacy and sexual health literacy. I would add wellbeing, mental wellbeing and mental health in general can definitely impact alcohol use and sexual health and mental wellbeing is also an outcome for both.*

- Do you think the health outcomes shown in the model are relevant for adolescents now?

Yeah.

- Are there any outcomes that you would add/remove?

No, they seem pretty well thought out.

- Would a measure of AHL/SHL based on the models be useful?
(g) How would you utilise a measure of AHL/SHL?

Ooh…err…I'm not sure. A survey might be useful, across the school That way we can look as see how well the students are doing when they first come in and when they leave the school. Basically, to check if I've done my job well!

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

  The curriculum is very good as a starting point... but our students are more diverse in terms of sexuality and gender than ever, but SRE just hasn't kept up. Yes, this is my responsibility and I try my best but where are the materials for this? I find myself asking some of these students where they find their information because they know more than I do.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

  Training... I think there is a lot out there about how to handle sensitive subjects, but I feel like the reason that teachers struggle with PSHE is because they don't know what it's like to be a teenager today, facing all challenges that are unique to this generation. In the same way we do cultural sensitivity training, there should be a generation-sensitivity training. It would really help teachers package their message in the right way.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

  There aren't enough hours in the day to keep up with all the marking and lesson planning. All teachers go home and still work until quite late. So, despite thinking that sexual health and alcohol and all those other PSHE topics are important, I also know that teachers will use that lesson to catch up with their own work and leave it to a vote to the students as to whether they want the lesson or whether they want to catch up or get on with their own work.

- What are your thoughts on SRE becoming compulsory from 2019?

  I think it will force schools to ensure that a generally good standard of SRE exists, which can only be a positive change.

- Do you feel prepared for this?

We've been told that the change is coming, and we've been told to wait for guidance but its nearly 2018 and we haven't received anything. If we're going to transition smoothly to implement this change then the government are leaving it a little bit late to provide the guidance, training and curriculum content that this will realistically require, that is unless something happens very soon.

- How do you think this will impact the teaching of alcohol education?

Well, I hope it puts PSHE in general on the agenda in all schools. I hope it has a positive impact, but I think as stretched as we are that alcohol education will slip down the to-do list.

- In an ideal world, what would the perfect PSHE/SRE session involve?

Subject- specialists coming in and delivering the sessions, maybe a model where PSHE specialists worked across schools in a region just to go in and deliver the lessons. I don't think that other teachers will ever have time to deliver PSHE lessons effectively. We would be better placed to bring in experts in each topic to equip the students with the skills they need and importantly, up-to-date and relevant knowledge! It is very difficult for some teachers to feel like they can discuss alcohol and sexual health with any depth whilst maintaining that professional relationship. It can be challenging not only to discuss these topics but to also be taken seriously as a credible source by the students. I do still think that teachers still need specialist training. Even if you had external speakers to deliver PSHE, teachers still need to be able to answer any questions that students have day-to-day. Time is a big one. More time given to the subject in the timetable. You can't cover everything if you only have a PSHE lesson once a month. The wellbeing of students really needs to be made more of a priority. We can't just say that we care about wellbeing, we need to do something about it.

K.8.1 Notes made during and after interview:

The participant seemed concerned about teacher workload and burnout.

- Female, age 29. Teaching for 11 years, Involved in PSHE for 7 years. Background in safeguarding work.

General themes:

- Lack of training

- Lack of time
- Workload
- Gaps in curriculum
- Discrimination
- Quantitative assessment
- Wellbeing important for AHL/SHL

K.9 Participant I:

Opening Questions

- How long have you been a PSHE/SRE lead?

  All my life! It's felt like it anyway. 26 years of teaching, I think I've been a PSHE lead since 2000.

- How often do PSHE/SRE sessions occur in school?

  Once a fortnight, in tutor time.

- How is alcohol and sexual health knowledge evaluated in your school?

  We ask for feedback on lessons.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  No, all good.

- Do you think the health outcomes shown in the model are relevant for adolescents now?

  Yes, I've been trying to get pleasure in terms of sexual health into our curriculum, but it hasn't been a popular theme. It's nice to see it here.

- Are there any outcomes that you would add/remove?

  No. Will let you know if I think of anything.

- Would a measure of AHL/SHL based on the models be useful?
  (h) How would you utilise a measure of AHL/SHL?

  I think it would be useful yes. I think something students could interact with would be a good idea. Making students think realistically about what they would do in a situation I would probably use something like that to inform my lesson content. It would be very useful for that.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

  I think the problem is that right now is that there isn't a gold standard of teaching in sexual health and alcohol in the UK. Alcohol is usually bundled in with drug use and I that's dangerous because a lot of students will drink but not all of them will take drugs, so I think those dynamics need to be separated a bit. We have this drinking culture here in the UK and we need to stop and look at that.[60Culture] *I think by diminishing the time we talk about the risks of alcohol, the more we're making it a social norm. We don't talk about how alcohol can be an emotional crutch because we think it's normal to come home after a long day and have a drink. Then before you know it, you're drinking every day. I've known students and parents in the past who've thought that was normal behaviour.*

- What about in sexual health?

  The subject is still a bit taboo and because of that we concentrate on facts. It's a hard subject to teach because in any year group you have such a mixture of knowledge and background. It would be easier if they came in at the same point. Obviously, I understand that can't be totally helped but if there was just a way to gauge where each student was, so you know what to teach, it would be a lot easier.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

What kind of training? Erm…I think something that obviously gives teachers what they need to know but enough that they feel confident to talk about the more awkward subjects.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

Well sex is an embarrassing thing for students and teachers to discuss but as I said I think building knowledge and confidence can overcome that. I think that the amount of work teachers has to do makes a real impact. Having to plan a PSHE lesson on top of your normal lessons can be a bit stressful for a lot of teachers because it's not their normal subject. In terms of the student, I think its down to whether they're going to listen to anything a teacher has to say about alcohol or sex.

- What are your thoughts on SRE becoming compulsory from 2019?

I think it'll vastly improve the state of SRE.

- Do you feel prepared for this?

Does anyone? It would be nice if we weren't in the dark about what we needed to prepare for 2019.

- How do you think this will impact the teaching of alcohol education?

Unfortunately, I think the focus is going to be on sexual health and because of that the scrutiny applied to PSHE in general is going to relax. I think the quality of alcohol education will suffer for it if we're not careful because we already don't have as much time for PSHE as we should.

- In an ideal world, what would the perfect PSHE/SRE session involve?

I think some teamwork between teachers and students. We have a program called peer mentoring where sixth formers are trained in some counselling and conflict management skills and given a younger year group to look after. The year groups can approach the peer mentor with any problem they see fit and then the sixth former can escalate the situation, if necessary, or help the students resolve it themselves. It's been working excellently so far, and I think something like that could be great

for PSHE. It's important that students are given the power over their own education too think a lot more work should be done around talking to students about what they want to learn.

K.9.1 Notes made during and after interview:

- Male, age 40, 26yrs PSHE teacher.

Main themes:

- Lack of government guidance
- Curriculum is vague
- Curriculum should be student led
- SRE is taboo
- Assessment for lesson planning

K.10 Participant J:

- How long have you been a PSHE/SRE lead?

  Nearly 2 years now.

- Have you always taught PSHE within your teaching career?

  No, I'm a biology teacher and this is an extra responsibility. I did do pastoral before. I've been teaching for 14 years…wait let me …yes.

- How often do PSHE/SRE sessions occur in school?

  We have PSHE, which includes SRE, once a week as a lesson.

- How is alcohol and sexual health knowledge evaluated in your school?

  We don't. Unfortunately. It would be useful if we did but that would take time and we don't have much of that these days.

In the SHL and AHL model:

- Are there any social, cognitive or emotional skills that you would add/ remove?

  Nope!

- Do you think the health outcomes shown in the model are relevant for adolescents now?

  I…yeah. I think I would be happy with those outcomes in life.

- Are there any outcomes that you would add/remove?

  No.

- Would a measure of AHL/SHL based on the models be useful?
  (i) How would you utilise a measure of AHL/SHL?

  Yeah, I it gives you very definite things to look out for in your students. Some of that information, you will already have as a teacher. I guess a measure like that could help set standards for PSHE across schools if there was a minimum attainment level that everyone had to achieve. Very definite ways of measuring whether your PSHE lessons are making any impact.

- Do you think that the curriculum covers everything that students need in terms of alcohol and sexual health?

  I think the curriculum should be updated more often. If it was then I think it would cover anything but right now it's very old and very conventional. I do think the curriculum makes huge assumptions about sexuality and disability. Like, I think the curriculum realistically is for heterosexual…er…. what's the word, not transgender….

  (a) Cis gender?

  …yes! Cis-gender students that have no physical or mental impairments.

- What kind of training do teachers require to be able to deliver useful and relevant PSHE/SRE sessions focusing on alcohol and sexual health?

  I would say that all teachers should be given PSHE training at least yearly. One training session every so often or for the whole career isn't enough. I think it needs to be delivered by experts who know all the answers, not just by professional trainers if that makes sense. I would love to have more training from people who are in the thick of it, are adolescent sexual health or drug use specialists.

- What are the facilitators/ barriers to teaching PSHE/SRE lessons in school?

  On a positive note, I think a lot of teachers today are keen to be trained in and teach PSHE, especially the younger teachers. I hate to generalise but, in my experience, it has always been the older teachers who are more resistant to talking about alcohol or sexual health in any way that they think is inappropriate for their audience. Like by talking about it they're encouraging it, what they don't realise is that most of these students are already drinking and probably having sexual relationships. Then, the fact that PSHE isn't really respected as a subject. Some parents and teachers do think that it's a bit fluffy and don't really see the benefits of it, then they instil those values to the students. It can be a vicious cycle. Religion is another one. Again, that belief that by talking about it we're encouraging it comes into play there. There are a surprising number of parents who pull their children out of all PSHE lessons.

- What are your thoughts on SRE becoming compulsory from 2019?

  Yeah great!

- Do you feel prepared for this?

  I don't know, it really depends on what the guidelines are. I guess that shows that I am quite unprepared.

- How do you think this will impact the teaching of alcohol education?

I think alcohol and sexual health can overlap. If not directly then in the way that there will be a general set of skills that are applicable to both. SRE will be prioritised, but most schools should still make PSHE a priority rather than just concentrating on SRE if they care about that side of education.

- In an ideal world, what would the perfect PSHE/SRE session involve?

I wish we still had the funding to bring in external companies and organisations. There were and are some that are doing amazing, current and relevant work but teachers will always be responsible for their students' wellbeing and that means giving teachers the right tools to use at the right times. It's not enough to know what your students need. You need to be able to provide the education, that's our main role. That means more investment in teachers and their resources though and I'm not sure that's going to happen.

K.10.1 Notes made during and after interview:

- Male, age 35, involved in PSHE for two years. Background in Biology and pastoral.

Main themes:

- Lack of funding
- Lack of expertise
- Old teacher's vs new?
- Lack of statutory guidance
- Sexual health taboo- embarrassing for teachers and students.
- Curriculum ignores diversity

Appendix L Tables of Themes and Subthemes

NB: Duplicated (and subsequently deleted) codes are highlighted in yellow in each table

L.1 Table of occurrences for sub-themes relating to: Factors that impact PSHE/SRE provision in schools.

Sub-themes	Number of occurrences		
	Alcohol only	Sexual health only	Both
1) Knowledge-focus		1	5
2) Risk-focus		2	2
3) Perceived responsibility			6
4) Professional barrier		1	7
5) Expertise			13
6) Funding			3
7) Undervalued as an academic subject			2
8) Perceived workload			5
9) Expertise			
10) Relatability to students			
11) Timeliness of lessons		2	5
12) Understanding student experience		1	5
13) Student discomfort/ embarrassment		2	2
14) Teacher discomfort/ embarrassment		3	3
15) Consequences for teaching SRE/PSHE			
16) Relevance of content			6
17) Perceived judgement from teachers			2
18) Less focus on alcohol	2		
19) Provision for student diversity			6
20) Confidence in teaching			2
21) Time allocated to PSHE/SRE			3
22) Assessment/Evaluation		1	2
23) Parent Beliefs			2

24) Motivation to teach			2
25) Willingness to learn			1
26) Standardisation		1	2
27) Cultural taboo	1	2	
28) Confidence			1
29) Credibility			2
30) Variety of background/experiences			
31) Student-centric curriculum			2

L.2 Table of occurrences for sub-themes relating to: Impact of RSE as a compulsory subject.

Sub-themes	Occurrences
1) No change to alcohol education provision.	2
2) Devaluation of alcohol education	9
3) Lack of guidance	9
4) Worries about funding	2
5) Improvements to alcohol education	2
6) Lack of time to prepare	2
7) No change to alcohol education provision.	1
8) Concerns about workload	2
9) Improvement to SRE standards	4

L.3 Table of occurrences for sub-themes relating to: Evaluation of AHL/SHL

Code	Number of occurrences
1) Too expansive	2
2) Invasion of privacy	1
3) Dishonest responding	1
4) Quantitative measure	2
5) Decision aid	2
6) Interactive measurement	
7) Situational measure	3
8) Lesson planning/improvement	7
9) Track student progress	4
10) Needs assessment	
11) Risk assessment	5
12) Standardisation of Alcohol and Sexual health education	2
13) Quality check for teaching	

L.4 Table of occurrences for sub-themes relating to: Improvement of AHL/SHL models

Sub-themes	Number of occurrences		
	AHL only	SHL only	Both
1) Overcomplicated			1
2) Comprehensive			5
3) Emotional Intelligence			4
4) Wellbeing			1
5) Extended family			1
6) Responsible enjoyment	1		1
7) Abstinence	1		
8) Knowledge relevant to personal identification		1	
9) Spotting and alerting abuse		1	
10) Understanding choices of others			1

Appendix M

M.1 Alcohol and Sexual Health Statistics

Country	**Projected % of population aged 0-14 by 2020[1]**	**Births per 1000 for women aged 15-19[3]**	**Age group presenting highest rate of STIs in 2017.**	**Total distribution of confirmed cases of STIs per 100,000 (data from 2017).**			**General trends in teen pregnancy in the past decade (2009-2019).**	**General trend in STI notification in young people (15-24) in past decade (2009-2019).**	**Heavy episodic drinking (% of 15-19 years old population) reported in past 30 days[3]**	**% Of 15-19-year-olds who currently drink alcoholic beverages[3]**	**General trend in alcohol abstinence in young people in past decade (2009-2019).**
				Chlamydia	Gonorrhea	HIV/AIDS					
Australia	19%[5]	13[5]	15-24[9]	363[1]	100.8[1]	4.2[1]	Decrease[2]	Increase[1]	37.1%	69.3%	Increase[13]
Canada	16.1%	9	15-29[7]	334[12]	65[12]	173[12]	Decrease[7]	Increase[7]	22.4%	51.7%	Increase[14]
Czech Republic	15.5%	10	No data found	No data found	13.0[11]	2.4[11]	Decrease[3]	Increase[11]	44%	64.6%	Stable[3]
Ireland	20.1%[4]	10	15-24[6]	154.1[11]	46.9[11]	10.2[11]	Decrease[15]	Increase[15]	40.7%	71.4%	Increase[15]
New Zealand	19.6%	20	15-29[10]	651[10]	82[10]	64[2]	Decrease[16]	Increase[17]	34.7%	63.8%	Increase[18]
Philippines	31%	60	No data found	No data found			Increase[20]	Increase[19]	9%	20.8%	Decrease[3]

Country	Projected % of population aged 0-14 by 2020[1]	Births per 1000 for women aged 15-19[3]	Age group presenting highest rate of STIs in 2017.	Total distribution of confirmed cases of STIs per 100,000 (data from 2017).	General trends in teen pregnancy in the past decade (2009-2019).	General trend in STI notification in young people (15-24) in past decade (2009-2019).			Heavy episodic drinking (% of 15-19 years old population) reported in past 30 days[3]	% Of 15-19-year-olds who currently drink alcoholic beverages[3]	General trend in alcohol abstinence in young people in past decade (2009-2019).
						Chlamydia	Gonorrhea	HIV/AIDS			
Sweden	17.8%	5	No data found	337.3[11]	25.2[11]	4.4[11]	Decrease[21]	Increase[21]	31.3%	62%	Increase[22]
United Kingdom	17.9%	12	15-24[8]	350.2[11]	74.7[11]	6.7[11]	Decrease[23]	Increase[23]	32.6%	62.3%	Increase[24]

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M.2 Sexual Health Policy and Legislation

Country	Written national policy/ strategy	Age of consent[1]	Access to free contraception[6]	Family planning services available[6]	Government paid parental leave	Legally binding restrictions on sexually explicit media content	Mandatory sexual health education? (Y/N)	Opposition to sexual health education in schools? (Y/N)
Australia	Subnational[2]	16-17 subnational	×[2]	✓[2]	✓[2]	✓[3]	N[14]	Y[22]
Canada	✓	16	×[3]	✓[3]	✓[3]	✓[5]	N[15]	Y[23]
Czech Republic	×	15	✓	✓	✓[16]	No data found	Y[16]	Y[24]
Ireland	✓[7]	17	×	✓ (But abortion is illegal)	✓[7]	✓	Y[17]	Y[25]
New Zealand	✓[10]	16	✓	✓	✓[11]	✓[9]	Y[18]	Y[26]
Philippines	×	12	✓[12]	✓[12] (abortion is illegal)	✓[12]	×	Y[19]	Y[27]
Sweden	✓[13]	15	✓	✓	✓[13]	✓[13]	Y[20]	Y[24]

United Kingdom	✓	16	✓	✓	✓	✓	Y[21]	Y[28]

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28. Hampshire, 2005

M.3 Alcohol Policy and Legislation (data taken from Management of Substance Abuse: WHO, 2019)

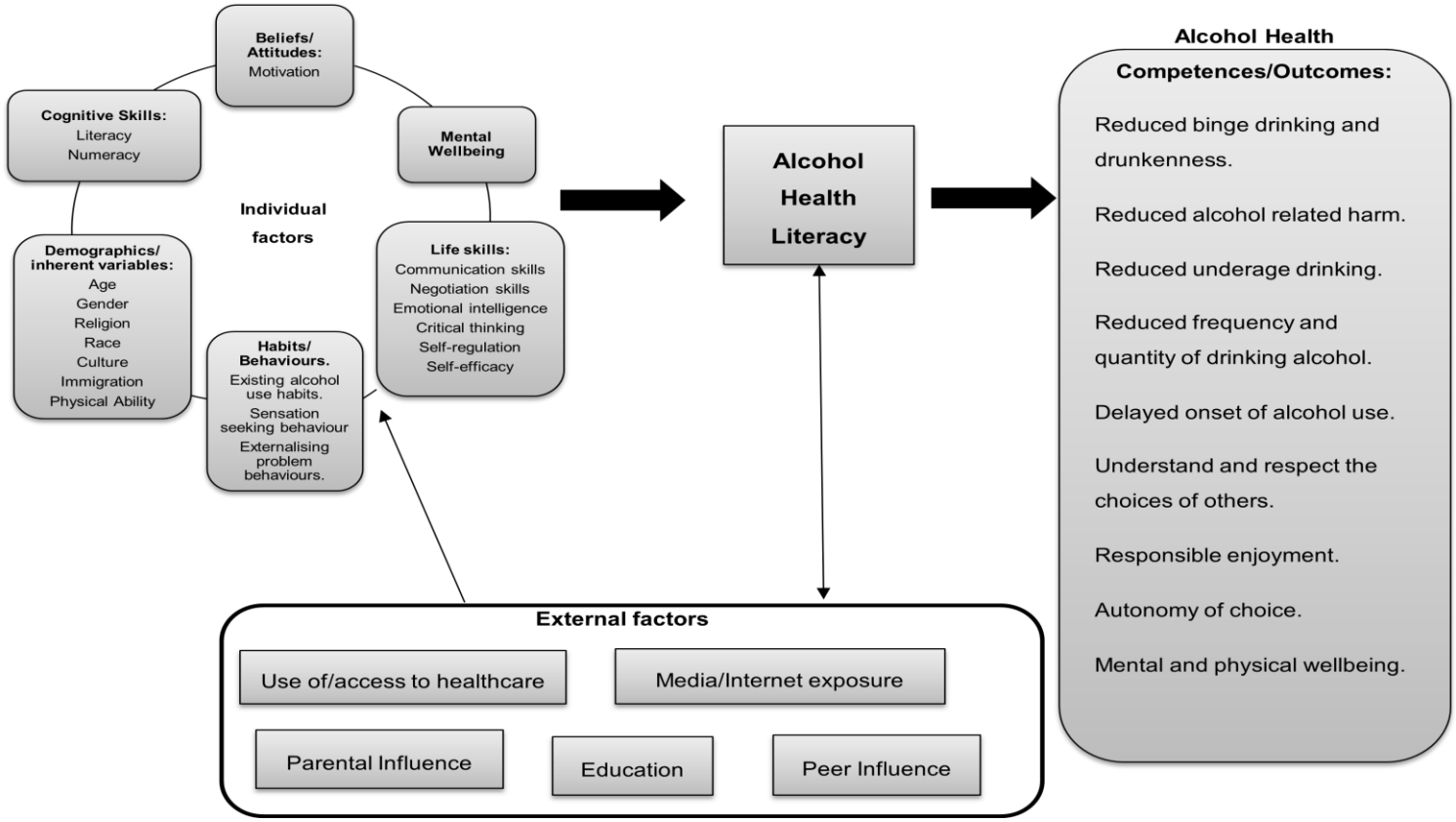
Country	Written national policy	Excise tax on beer/wine/ spirits	National legal minimum age for off/ on premise sales of alcoholic beverages	Restrictions for on/off-premises sales of alcoholic beverages	Legally binding regulations on alcohol advertising and product placement	Mandatory alcohol health education? (Y/N)	Opposition to alcohol health education? (Y/N).
Australia	✓	✓	18	×	✓	N	Unknown
Canada	Subnational	✓	Subnational	Subnational	×	N	Unknown
Czech Republic	✓	✓	18	• Sale of alcohol is illegal in healthcare and educational establishments • Sale of alcohol is illegal in some cities or areas.	✓	Y	Unknown

Ireland	✓	✓	18	• Restrictions on the time that off-licences can operate and sell alcohol. • Illegal to sell alcohol at reduced prices for a limited period during the day. • Restrictions on the times that young people are allowed in licenced premises.	✓	N	Unknown
New Zealand	✓	✓	18	• Restrictions on maximum hours that licenced, and off-licence businesses can operate • Dairies convenience stores cannot sell alcohol • Alcohol sale is restricted in supermarkets	✗	N	Unknown

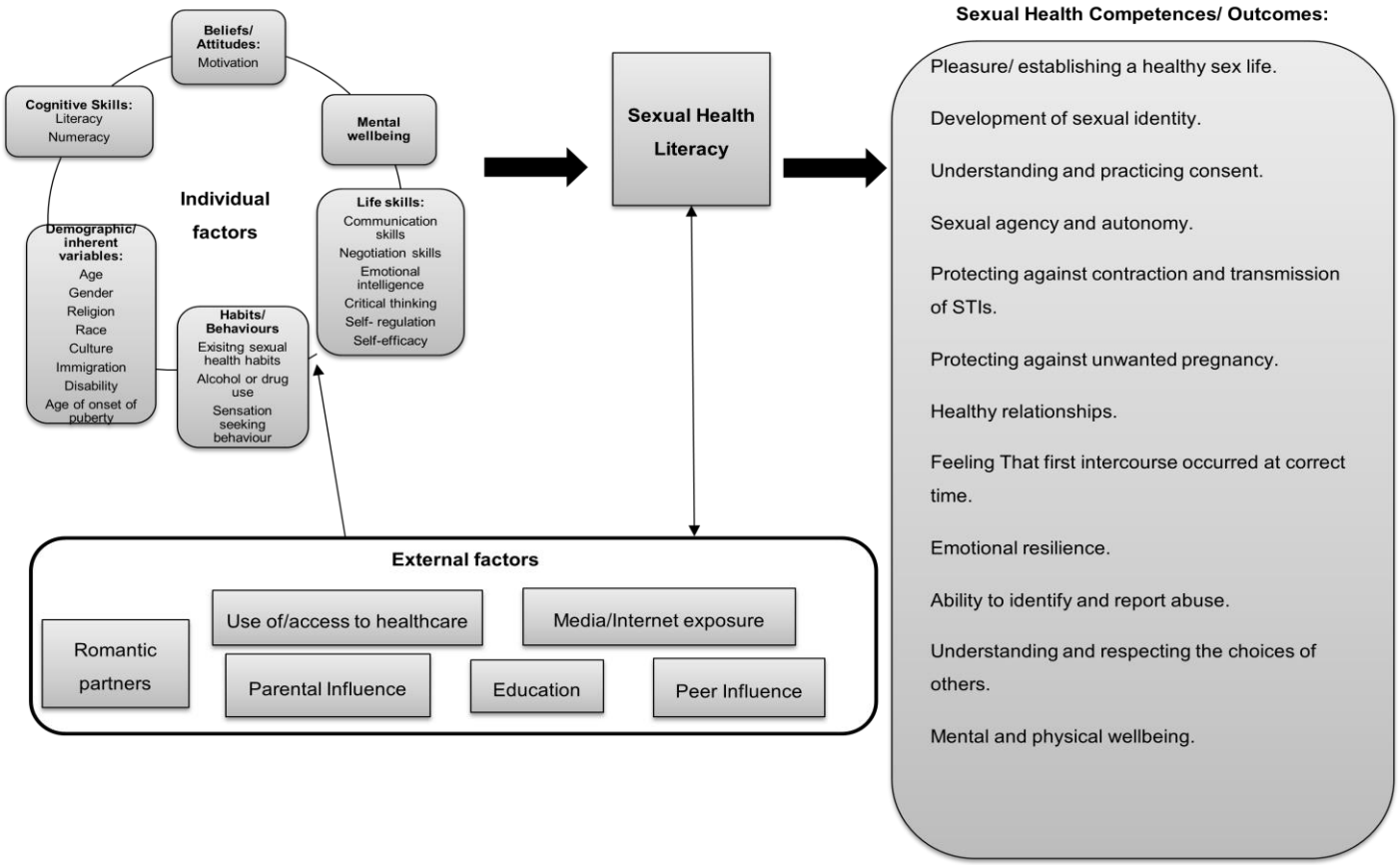
Philippines	✓	✓	18	• Sale of alcohol is illegal in healthcare and educational establishments • Sale of alcohol is illegal at some leisure events e.g., sporting events, concerts etc. • Sale of alcohol is illegal in some cities or areas.	×	Y- mandatory drug/ substance use education	Unknown
Sweden	✓	✓	20 (18 in licenced restaurants)	• Systembolaget: alcohol is only available for purchase in government owned chains of stores or licenced restaurants under strict conditions • Discounts on alcohol is prohibited • All alcoholic drinks are sold individually (not in packs) • Alcohol cannot be sold to those already inebriated	✓	N	Unknown
United Kingdom	Subnational	✓	18	Subnational	×	N	Unknown

Appendix N **Final Models of AHL and SHL**

N.1 AHL Model



N.2 SHL Model


Beliefs/ Attitudes:
Motivation
Cognitive Skills:
Literacy
Numeracy
Mental wellbeing
Individual factors
Life skills:
Communication skills
Negotiation skills
Emotional intelligence
Critical thinking
Self- regulation
Self-efficacy
Demographic/ inherent variables:
Age
Gender
Religion
Race
Culture
Immigration
Disability
Age of onset of puberty
Habits/ Behaviours
Exisitng sexual health habits
Alcohol or drug use
Sensation seeking behaviour
Sexual Health Literacy
Sexual Health Competences/ Outcomes:
Pleasure/ establishing a healthy sex life.
Development of sexual identity.
Understanding and practicing consent.
Sexual agency and autonomy.
Protecting against contraction and transmission of STIs.
Protecting against unwanted pregnancy.
Healthy relationships.
Feeling That first intercourse occurred at correct time.
Emotional resilience.
Ability to identify and report abuse.
Understanding and respecting the choices of others.
Mental and physical wellbeing.
External factors
Romantic partners
Use of/access to healthcare
Media/Internet exposure
Parental Influence
Education
Peer Influence

Glossary of Terms

Alcohol Health Literacy (AHL): Alcohol health literacy refers to an individual's capability to find, understand, process and apply health information in order to make informed, health related decisions about alcohol for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

Competencies: the applied skills and knowledge that allow a person to successfully perform a task

Health Education (HE): curriculum subject replacing PSHE (see below), focusing on strengthening the knowledge and skills of young people around physical and mental health.

Health Literacy (HL): Health literacy refers to an individual's capability to find, understand, process and apply health information in order to make informed, health related decisions for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

LGBTQIA+: Lesbian, Gay, Trans*, Queer, Intersex, Asexual and Other

Mixed Methods Research (MMR): the use of one or more data collection methods within a study

Personal, Social, Health and Economic (PSHE) education: curriculum subject replacing PSHE (see below), focused on empowering young people with life skills.

Porn Literacy: referring to the competencies an individual requires to safely access and enjoy pornography

Relationships and Sex Education (RSE): curriculum subject that aims to empower young people with the knowledge and skills to initiate and interact safely with interpersonal relationships.

RSE: Relationships and Sex Education

Sexual Health Literacy (SHL): Sexual health literacy refers to an individual's capability to find, understand, process and apply health information in order to make informed, health related decisions about sex for the self and others in a range of contexts. This may involve the use of multiple skills such as verbal or visual communication and the added subset of health numeracy.

Sexually Explicit Material (SEM): pornographic or otherwise explicit material

Sexually Transmitted Infections (STIs): infections spread by sexual contact

Socioeconomic Status (SES): social class or standing of an individual or group

SRE: Sex and Relationships education

Substance Use Disorder (SUD): condition characterised by uncontrolled use of drugs and/or alcohol

Symbolic Operations: the concept of thinking through or planning an action and its impact

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