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Regular Article

Young women's health behaviours in context: a qualitative longitudinal study in the *Bukhali* trial

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ABSTRACT

The *Bukhali* trial is being implemented with young women (18–28 years) in Soweto, South Africa. A qualitative longitudinal study was conducted to explore *Bukhali* trial participants' perceptions of health and their health behaviours over time and in the context of their life circumstances. This article reports an interpretation of interview data from a sub-sample of 11 of 35 participants who participated in four interviews conducted over 12 months. A longitudinal case analysis approach was applied, and four themes were developed: life circumstances, perceptions of health, health behaviours and changes, and experiences of the trial. Participants experienced largely challenging life circumstances characterised by instability and lack of security in terms of employment and education. Their health and health behaviour trajectories also lacked stability and were fragile. Data were also interpreted through the lens of a concept previously explored in Soweto and introduced in the final interview: *ukuphumelela* ('flourishing'). This concept was useful for understanding the dominance of external or structural (versus internal or personal) factors and social dynamics influencing the health behaviour and life trajectories of participants, particularly in terms of success in the face of difficulty. Participants' experiences of the trial highlighted the critical role of support provided by, and trust established with, trial staff. This qualitative longitudinal approach provides unique perspectives on participants' experiences of the *Bukhali* trial over time, the importance of contextualising health behaviour change, and the instability impacting the participants, outcomes and implementation of *Bukhali* in Soweto.

1. Introduction

Context is critical for understanding health behaviour (Perski et al., 2022), and in planning behaviour change interventions and policies (Michie et al., 2011). Such considerations reflect the widely theorised sociological tension between social structure (e.g., rules, hierarchies and inequality) and individual agency (e.g., people's ability to act in accordance with their choices) (Frohlich et al., 2001; Williams, 2003). The 'social determinants' approach can be applied to health behaviour, as it has been applied to health, in order to reflect the range of structural factors and inequities that impact on health behaviour (Short & Mollborn, 2015). This interdisciplinary approach aligns with life-course perspectives that acknowledge biological, psychological, and social factors that situate individuals in contexts where these factors intersect in complex ways (Hanson & Aagaard-Hansen, 2021; Short & Mollborn, 2015).

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1.1. Healthy life trajectories initiative

The Healthy Life Trajectories Initiative (HeLTI) is an international consortium involving Canada, India, China, and South Africa (SA), and developed in partnership with the World Health Organization (WHO). HeLTI adopts a life-course perspective and it hypothesises that an integrated complex, continuum of care intervention, from preconception, through pregnancy, infancy and early childhood will promote young women's physical and mental health, and that this will establish healthier trajectories for themselves and future children.

For HeLTI SA, the *Bukhali* randomised controlled trial is being conducted with 18–28-year-old women in Soweto (Norris et al., 2022). Soweto is a multilingual, urban setting in Johannesburg, that is densely populated and predominantly low-income. The *Bukhali* intervention is delivered by trained community health workers, referred to as 'Health Helpers'. In addition to risk screening (with referral and management support) and the provision of multi-micronutrient supplementation, the intervention provides social support and assists with adopting healthy behaviours using Healthy Conversation Skills (Barker et al., 2011; Lawrence et al., 2016), in alignment with evidence-based recommendations. Topics covered in either telephonic or in-person sessions (at the research site in Soweto) relate to young women's physical and mental health particularly during preconception and pregnancy, as well as early childhood health and development covering infancy and early childhood up to the age of five years. For the control arm, standard of care 'plus' is delivered telephonically, covering non-health specific topics, relating mostly to practical life skills. Both arms undergo a range of physical and mental health assessments at baseline, prior to randomisation (Norris et al., 2022).

Several risks to young women's health have been identified in Soweto, including overweight/obesity (Lundeen et al., 2016; Nyati et al., 2019; S. V. Wrottesley et al., 2020), unhealthy diet (Sedibe et al., 2014, 2018; S. Wrottesley et al., 2017), high levels of sedentary behaviour (Micklesfield et al., 2017; Prioreschi et al., 2017), physical inactivity (S. K. Hanson et al., 2019), and depression and anxiety (Redinger et al., 2018). Qualitative formative work for HeLTI SA (prior to trial commencement) described the complex family dynamics experienced by young women in Soweto, barriers to healthy behaviour, and their need for mental health support (Cohen et al., 2020; Draper et al., 2019; Ware et al., 2019). Pilot data from the *Bukhali* trial highlight that the social vulnerability of these young women is exacerbated by parity (Ware et al., 2021), food insecurity (Kehoe et al., 2021), and mental health risks (Draper et al., 2022). Young black women living in urban low-income settings such as Soweto are particularly vulnerable to being classified as 'NEET' (not in education, employment or training). The NEET rate in South African youth (15–24 years) has been increasing over the past 10 years, and has been consistently over 30 % (Mudiriza & de Lannoy, 2022). In terms of health behaviours, less than half of the pilot sample reported any leisure time physical activity (Prioreschi et al., 2021), and a third of women reported poor sleep quality (Draper et al., 2022). Further qualitative work also drew attention to the relatively low priority given to health, and the "preconception knowledge gap" amongst young women in Soweto (Bosire et al., 2021; Draper et al., 2020).

While previous HeLTI SA process evaluation research has helped to characterise health behaviours in young women from Soweto, and to recognise the context and life experiences of these women (Draper et al., 2022), these findings are largely cross-sectional. Therefore, the aim of this study as part of the *Bukhali* trial process evaluation (Draper et al., 2023), was to explore *Bukhali* trial participants' perceptions of health and their health behaviours over time in the context of their life circumstances and participating within the trial. This included retrospective reflections on their childhood and youth, relational dynamics, change and continuity in their present circumstances, and aspirations for their future.

2. Methods

2.1. Study design

Qualitative longitudinal research is valuable for capturing experiences, journeys, and changes over time, acknowledging the salience of context, and the iterative nature of data generation (Neale, 2019). Although the value of qualitative research in randomised controlled trials has been recognised (Lewin et al., 2009; O'Cathain et al., 2013), qualitative longitudinal approaches appear not to have been used alongside randomised controlled trials. This type of qualitative longitudinal approach within the ongoing *Bukhali* trial, embedded in the trial process evaluation, offers a unique opportunity to gain nuanced insights because of the relationships of trust built over time with participants.

2.2. Sample and recruitment

Participants in the *Bukhali* trial are 18–28-year-old women living in Soweto, who have been recruited using a range of community-based methods such as house-to-house recruitment, community recruitment drives, and social media adverts, details of which have been described elsewhere (Draper et al., 2020, 2023; Norris et al., 2022). For this qualitative longitudinal study, a sub-sample of 35 participants was recruited from the intervention and control arms to participate in a series of repeat individual interviews during their first twelve months of the trial (preconception phase), after being randomised into the trial in October 2020. Given the blinding constraints of the trial, we are not able

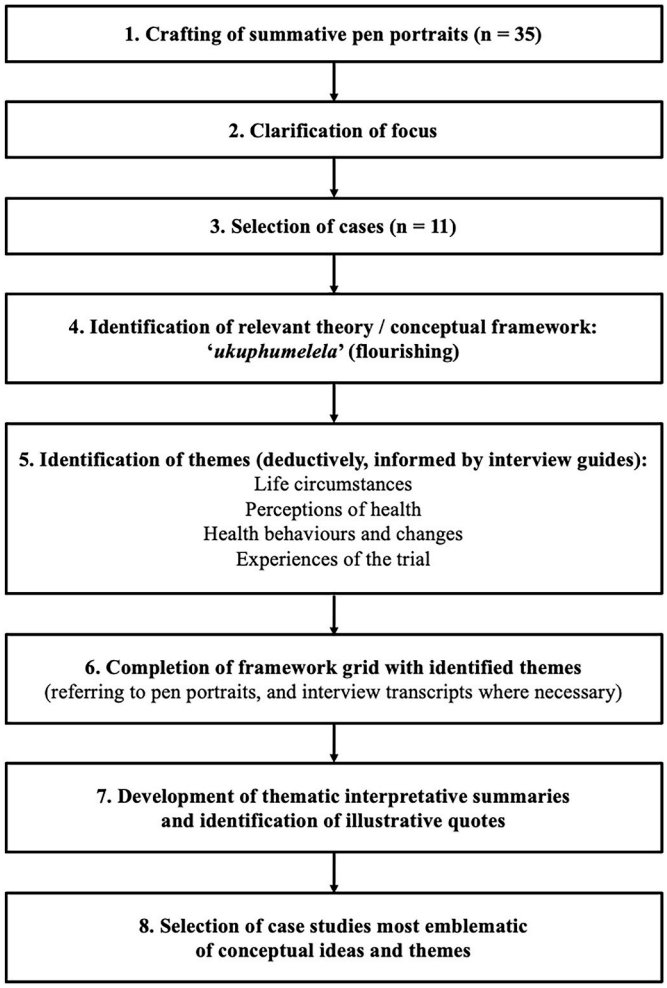

Fig. 1. Analysis process summary.

at the time of writing to specify whether participants are in the intervention or control arms of the trial.

From this total group of 35, 21 participants completed the full series of interviews; 14 participants were not able to be reached and/or scheduled for one or more of the interviews. Of these 21, the caregivers of 10 participants were also interviewed; interviews with the caregivers of the remaining participants were not able to be scheduled for a range of reasons (e.g. not reachable, unavailable for an interview, unwilling to participate, not residing in the area, participant unable to identify a caregiver to interview), although attempts were made to contact all caregivers identified by participants. The data from participants and their caregivers are being presented elsewhere, with a focus on social support. It is plausible that these two groups differ in terms of the social support they receive from their caregiver, but there were no other notable differences between these groups. The remaining 11 participants (18–28 years) provided data for case studies forming the basis of the analysis described in this article. From these eleven cases, four emblematic case studies were identified to provide further detail, included as Figs. 2–5 (Neale, 2021).

2.3. Interviews

Data were generated from four interviews conducted with each participant over 12 months starting three months after randomisation (then at six, nine and twelve months). Interviews 1, 3 and 4 were conducted at the research site (Chris Hana Baragwanath Academic Hospital, Soweto). If participants were willing, interview 2 was conducted in their homes, or alternatively at the research site. Semi-structured interview guides were developed collaboratively and iteratively by the co-authors, based on key issues that this study sought to explore. Questions were revisited before each round of interviews, with individual tailoring for follow-up interviews. Topics covered are outlined in Table 1. Timelines and relational maps, diagrammatic visual tools were used to aid discussion in the interviews (Hanna & Lau-Clayton, 2012; Neale, 2021). Vignettes depicting some of the typical challenges experienced by young women in this context were also used as discussion prompts in the final interview (see Table 1 for examples and question prompt). Interviewers were conversant in the common local languages in Soweto (e.g. isiZulu, isiXhosa, Sesotho), and were able to conduct the interviews in the home language of participants, as far as possible. Interviews were audio recorded, translated into English where necessary, and then transcribed verbatim in English.

2.4. Data analysis

A longitudinal case analysis approach was applied, which included the crafting of summative pen portraits for participants (chronological, structured 1–2 page document summarising a brief history of each participant, scripted by researchers); this is a method that can be used to collate and make sense of longitudinal qualitative data (Neale, 2019, 2021; Sheard & Marsh, 2019; Weller et al., 2022). Pen portraits were compiled for all 35 participants (by CD, MM, SK, KM, LS, MP, GM), and these were shared and discussed amongst this group (plus SW and MB). Fig. 1 outlines the steps of the analysis process, which included the completion of framework grids to thematically organise the information from the pen portraits (Neale, 2019, 2021; Tuthill et al., 2020), the identification of key themes (deductively, informed by interview guides), and the selection of emblematic case studies (Neale, 2021). The four key themes identified were: life circumstances, perceptions of health, health behaviours and changes, and experiences of the trial; these themes describe participants' experiences and perceptions including their interactions with the trial, rather than provide evidence of the *Bukhali* intervention's impact. The approach to the presentation of these themes (and case studies, developed from the original pen portraits) is both descriptive and interpretative, in line with the longitudinal case analysis approach mentioned earlier.

The concept of *ukuphumelela* (a Zulu word best translated into English as 'flourishing') was introduced to participants during the last of

Table 1
Interview topics.

Interview 1	Trial experiences
	Perceptions of health
	Feelings about health behaviours (challenges, barriers and facilitators, motivation)
	Information and support to be healthy
	Impact of the COVID-19 pandemic on health, health behaviours, and home environment
	Life story (using a timeline as a discussion prompt)
	Influence of life experiences on health perceptions
Interview 2	Any updates from previous interview
	Family and relationship dynamics, using relational maps or a family tree
	Family influences on health and health behaviours
	Preparation for interview 3 by taking photos (on their phone) of their health behaviours (flexibility to choose which behaviour/s)
Interview 3	Discussion about health behaviours, using photos as a prompt
	Perceptions of changes in health and health behaviours in the past few months
	Trial experiences in the past few months
	Perceptions of health services offered as part of the trial (e.g. free pregnancy and HIV testing), and how these compare to public services
	Other issues or challenges
	How challenges are dealt with, social support available, and feelings about counselling
Interview 4	Perceptions of how challenges can be dealt with by young women in Soweto, using a selection of vignettes selected by participants as a prompt covering the following topics: emotional abuse, progressing in life, reproductive health, physical activity and diet, mental health (grief, trauma), and food insecurity
	Question prompt: "I'm going to share some stories about young women like you from Soweto, and ask you to tell me how you think these stories would end, and what you might say to the women (and other individuals) in these stories."
	Story examples:
	Living with trauma (Mental health): Lerato has faced a lot of difficult things in her life. She lived away from her mother when she was a child, and she never knew her father. She was also sexually abused when she was a teenager. Lerato feels like she has overcome these challenges, but sometimes she gets very anxious about small things; she feels like she needs to control of things around her.
	*Providing for a child (Food insecurity): Nomsa lives with her young child who has been losing weight. The nearest supermarket to buy healthy food is an hour away by taxi. Nomsa is struggling to provide food for her hungry child. Over the past*6 months*, they haven't eaten any fruits and vegetables, so they fill up with pap. This week she had to sell clothes to buy food.*
	Perceptions of health and health behaviours after a year in the trial
	Influences on health and health behaviours
	Other life changes
	Coping with challenges, and the role of the trial in coping
	Perceptions of '*ukuphumelela*' (flourishing) and how it applies to them
	Perceptions of the trial and trial delivery

the four interviews (as part of the iterative development of interview guide questions) to understand participants' life circumstances and perceptions of health and health behaviour (see Table 1). The question was posed as "What do you think of the isiZulu term '*ukuphumelela*' ('flourishing')?" If participants were not familiar with the term, some clarification was provided, and then participants were asked how they felt it applied to them.

The rationale for including this in the interviews stemmed from the formative work done in preparation for the trial which highlighted the difficulty of articulating the concept of 'health' in some vernacular languages spoken in Soweto. *Ukuphumelela* has previously been used as a concept to understand data from Soweto (Cele et al., 2021). Rather than this being conceptualised simply as an individual pursuit or experience, Cele et al. maintain that flourishing in this context has three elements: *"external, material, or structural factors (like financial security), internal or personal characteristics (including discipline), and relationality of social dynamics, such as dynamics of reciprocity, mutual obligation, and care."* This recognises ways in which structural, social, and contextual factors impact on the capacity of Soweto residents to flourish, including cultural context, norms, and expectations. Importantly, the implication of *ukuphumelela* in this context is that people are successful in what they are trying to achieve in spite of challenges (Cele et al., 2021).

We were interested to see how participants would talk about this concept of *ukuphumelela,* and given that participants generally did not have difficulty answering this question, it could be argued that the concept made sense to and resonated with them. While this concept was initially used to explore what flourishing meant to participants, we also used it as a framework for understanding the dominant influence of external or structural, versus internal or personal, factors and social dynamics on health behaviour and life trajectories of participants, particularly in terms of overcoming challenges presented both by adversity and by having to make difficult changes (step 4 in Fig. 1). Therefore, the concept of *ukuphumelela* was used in the analysis as an additional, deductive lens through which to better understand the health behaviour and life trajectories of participants.

2.5. Ethics

In terms of situational ethics, interviews were conducted by one interviewer and one note-taker both of whom were women familiar with the local context, able to converse in the home languages of most participants (generally not English) and experienced in qualitative data generation. These characteristics were intended to mitigate, as far as possible, power asymmetries and cultural 'distance' between the two researchers and participant. To offer transparency on the diversity of the author group and potential power dynamics, positionality statements are provided as supplementary material.

At an institutional level, ethical approval was obtained from the Human Research Ethics Committee (Medical) at the University of the Witwatersrand (Ref: M190449). All participants gave written informed consent for their involvement in the interviews in addition to that given for taking part in the trial. All procedures contributing to this work comply with the Helsinki Declaration of 1975, as revised in 2008. The *Bukhali* trial has been registered with the Pan African Clinical Trials Registry (https://pactr.samrc.ac.za; identifier: PACTR201903 750173871, Registered March 27, 2019).

3. Results

The framework grid outlining participants' health and health behaviours in the context of life circumstances and the *Bukhali* trial is provided as Supplementary Table 1. Interpretative data on the four themes is provided below, with illustrative descriptions and quotes from the four emblematic case studies. Additional quotes from the 11 cases are provided as Supplementary Table 2.

3.1. Life circumstances

Participants' descriptions of their life circumstances, prompted by the timelines and relationship maps, provide a backdrop to their current experiences. 'Difficult' circumstances and 'difficulties' seemed to be a frequent descriptor of participants' life histories, and for many participants these circumstances persisted into the present. While a few participants explained that these situations improved over the year during which they were interviewed, many seemed to still be living with the trauma of past events, and the stress of difficult circumstances. Specifics regarding the nature of these difficulties are provided in the framework grid (Supplementary Table 1) and case studies; use of the more general term is retained given the meaning of *ukuphumelela* as success in spite of difficulty. All but one of the participants described a difficult home situation, and these difficulties ranged from an absent father, to being abused, multiple changes in caregivers and living environments, and fractured relationships with close family members. Only one participant depicted her family environment as good – "a warm home" – with both parents present. Another said in her first interview that she had had a "happy childhood", but in the next sentence stated that her father was "very abusive" to her mother, and in her final interview, describes how this continued to affect her.

Most participants had few opportunities to access education and employment, although this status, especially employment status, changed over the course of the year. Overall, there seemed to be a lack of stability in these areas of participants' lives though only a few mentioned the effects of the COVID-19 pandemic. Some mentioned positive steps they had taken during the year, such as going for driving lessons, applying for a course, or finishing secondary school, but many lacked the financial resources to access educational opportunities. Few participants seemed to be in stable, full-time employment over the year; most were either unemployed, or their employment status fluctuated between part-time positions and self-employment. Their experience reflects the limitations and precarity of the job market in Soweto (see Fig. 2 for case study).

Participants' employment or educational status shaped daily life, specifically not having work or study commitments meant staying at home to cook, clean, sleep, or spend time on screens, mostly watching television and using their phones. For some, this generated a sense of futility: "*I wake up, I clean, I cook and then that's it, there is nothing else, I go and see my friend and then I go back home*". Furthermore, it was clear that participants' family difficulties and limited resources set them on particular education and employment trajectories that had negative impacts on their health. The fragility of these trajectories over time included the experience of precarious health, and health behaviours that lacked stability in the context of an unstable home and work life. This instability could be exacerbated by long periods of no educational or employment activity. Given limited educational and employment opportunities for young women in South Africa, because of the country's poor economic and political climate, without intervention, these trajectories are likely to remain fragile and negative.

Many participants appeared to conceive of flourishing (in interview 4) in terms of conventional understandings of success such as studying further and/or gaining employment. While not specifically articulated, the structural factors and material difficulties influencing the life circumstances of these participants, and hence their capacity to flourish, were clear; they were describing the consequences of apartheid and colonial legacies of racial inequality, spatial injustice, along with poor infrastructure and services, including education and health.

> *Succeeding is something that has to happen, and you have to fight for it as a person, that you must succeed in life … Success is what I want and it's what I fight for, to succeed because I am trying … I would like to study further, re-write my matric and continue with my studies. (participant 11, interview 4)*

Case study: Life circumstances

The participant grew up in her mother's house. Shortly after them moving to live with her stepfather, he was arrested. Her mother passed away when her seventh child was 6 months old, and it fell to the participant to care for the baby. While she received some support from her father, he did not support her stepsiblings and she became the guardian of these siblings and took them to live with her mother's sister. She was able to provide for the household with help from her father and also the child support grant she received for her youngest siblings. Both of her aunts died shortly afterwards, and she was left living in this house with all of her siblings. She said she was the "*elder*" in her house, but there were tensions between her and her older brother. She described the immense stress of caring for all of her siblings after her mother passed away, and does not feel that she has had a mother figure in her life, but that she is the mother figure for her siblings. However, she feels that she managed this and said this was "*the way God wanted me to be…an example."* Now that her siblings have mostly grown up and offer her less stress, she felt that things are better and there are fewer struggles at home. Throughout the year of interviews, she continued to look after her siblings and her child at home. She had her first child at age 25 and is in a committed relationship with the father of her child.

She passed her Matric while caring for the children, and then went to college and studied "*safety*". At the first interview, she was working at a petrol station while she waited to hear back about an interview with the South African Police Service. She aspired to be a traffic officer with the Johannesburg Metropolitan Police Department, but first needed to get her driver's license; she felt this would expand her employment opportunities. She still received some financial support from her father, received grant money for some of the children, and her stepfather managed to send money from jail. She said he is "*hustling in there"*, although she did not know how he got this income. Over the course of the year, she was engaged in various small entrepreneurial activities – working as a chef on and off, and selling bags, watches, blankets and curtains. She continued with these entrepreneurial activities until the end of the year, and was accessing information to help her with these endeavours.

Her understanding of *ukuphumelele* was about working hard to succeed: *"When you have to succeed, you have to work hard. You can't expect for things to come to you while sitting. Work on the idea that you have and at the end you will succeed"*. However, she struggled to make her aspirations of being a traffic officer a reality. She expressed some doubt about whether this was a good option for her earlier in the year, but at the end of the year she said her "*only goal is to be a traffic cop*". However she was still needing to get her driver's license, although she had completed the other training required, and felt despondent about her employment situation: *"The only challenge that I have is securing work. I have gotten to a point where I am giving up because there are no call backs coming through. I am finding this difficult."*

Fig. 2. Life circumstances case study.

> *I want to go to school, go to varsity, after varsity I want to find a good job so that I can improve the standard of living here at home. (participant 8, interview 4)*

> *I want to accomplish the things that I want to do, my dreams, I still have dreams … To have my own place, to build my mother a house, to buy my first car; in fact to go back to school, ja and just be okay, have a stable life. (participant 7, interview 4)*

The impact of relationality of social dynamics on participants' capacity to flourish was more explicitly described; the impact of difficult home situations that was the reality about which most participants were particularly articulate. The absence of reciprocity, mutual obligation and care which are key to flourishing seem to underly many of the challenging family situations mentioned by participants.

Despite this bleak outlook, over the course of the year, many participants nurtured aspirations to study further and/or find employment; two participants spoke about starting their own business or organization. The ambitions of some participants for further study and employment give some indication of the personal characteristics contributing to these individuals' capacity to flourish, but these seemed to be overshadowed by the structural and social dynamics that set these women's life trajectories on courses that are difficult to alter. For many, the aspirations were there, but the agency and means to turn these aspirations into reality seemed limited, particularly within the space of the year over which they were interviewed. Notwithstanding these challenges, the notion of success in spite of difficulty – and success as something worth fighting for – is highly salient for these young women in Soweto.

3.2. Perceptions of health

Participants generally seemed to struggle to articulate or talk in detail about the concept of health, suggesting that their health literacy was limited. It was not clear that their understanding shifted significantly over the year, but some participants mentioned that their health had improved. Health was frequently conceptualised as physical, and linked to health behaviours, especially dietary behaviour, with a few references to physical activity, screen time and sleep, and avoiding risky behaviours including smoking and alcohol consumption. These discussions were particularly a feature of the early interviews. Screen time and sleep were mentioned more frequently in later interviews, suggesting that there was increasing acknowledgment of their role in health over the course of the trial. This acknowledgment is likely linked to

participants' exposure to the trial's health behaviour assessments and intervention material on these behaviours.

> *Health, how can I define health? I would say life, I am not sure, I am not good at this … [… what do you mean by life?] Like obvious, we always have to take care of our health, doing certain things to keep ourselves healthy … [How would you know you are healthy and what is healthy?] I don't get sick often, I am trying to exercise, I eat fruits here and there, cabbage and some spinach to balance things out. (participant 6, interview 2)*

Some participants made the connection between overweight/obesity and physical health, in as far as they spoke about engaging in healthy behaviours to lose weight, or to mitigate the risk associated with other physical conditions. Others conceptualised health as a lack of illness, and some acknowledged the inclusion of mental health, while only a few spoke of the relationship between physical and mental health and how mental health could impact on health behaviours, conceptualised for some as "stress". The impact of participants' life circumstances on their mental health was evident in some of their responses.

3.3. Health behaviours and changes

The lack of stability in life circumstances described earlier was echoed in participants' descriptions of health behaviours and changes over time. Many spoke about the desire, intentions or actions they had taken to change health behaviours, but these did not seem consistent, and there did not appear to be a pattern in these changes over time. Participants reported that some behaviours got better, while others got worse. Limited literacy and understanding were evident in participants' discussion of health behaviours; the way in which these behaviours were discussed was often contradictory, even within the same interview. For example, some said that they considered themselves to be physically fit, but did little physical activity. Others described their diet as healthy, but then gave examples of unhealthy items when talking about their typical diet. In addition, some participants would describe a particular behaviour as unproblematic, but then described behaving in a way inconsistent with recommendations, of which they seemed to be unaware. This was particularly the case for screen time and sleep, excessive amounts of which were features of the descriptions women gave of lives without structure from education or employment (see Fig. 3 for case study).

In these circumstances, excessive screen time and sleep were a response to boredom in the absence of work or study commitments; some recognised that these behaviours would change if they were working or studying. Participants whose employment situations improved over the year reported seeing positive changes in their sleep and screen time behaviours. Conversely, some participants with more demanding work or study schedules found it hard to make time for being physically active, for example. Life circumstances also clearly influenced eating behaviour; lack of employment and financial resources resulted in food insecurity and perceptions that they were unable to eat healthily.

Case study: Perceptions of health

The participant grew up in a home that was abusive, and did not have a relationship with her father. Her mother was sick, and the participant was not getting on well with her sister; she found these life circumstances stressful and expressed that she was not coping. She was raising two children on her own, and had a miscarriage between the second and third interview. She was unemployed at the time of the interviews, and relied on government grants. Both structural factors and relational dynamics appeared to be impacting on her capacity to flourish.

The participant seemed to see health as health behaviours and stress, and had some difficulty clearly articulate her perception of health. She was HIV positive and had high blood pressure; she felt it is important to her to look after her health for the sake of her children:

> *"At first it was difficult, but now I know that health is important to me. I have to survive so my children can live. For me to live, I have to eat healthy and exercise and all those things."*

For that reason, she tried to eat well, exercise regularly, and tried to talk about her struggles so she can live her life more *"peacefully"*. The clinic told her the high blood pressure was linked to anxiety/stress (*"I think too much"*). She watched up to 10 hours of screen time per day due to boredom, and she thought she slept too much during the day (up to 8 hours), but this is how she coped with feeling "*stressed*". When she was in hospital for the miscarriage, she felt the time at the hospital helped improved her health because her diet was controlled, and she did not watch a lot of TV.

At a later interview, she was sleeping less during the day, but used her phone for up to 8 hours to "*relieve stress*", and did not know how she could reduce this. She was trying to express herself better when she got upset with people, which she felt affects her health because her blood pressure got worse if she was upset. By the last interview, her blood pressure had improved, and she felt her health had improved since starting the trial. She was eating more healthily, and spending less time sitting, sleeping, and watching TV during the day, and more time washing and cleaning in the house. But since her miscarriage, she had not been exercising. She was able to go for counselling after her miscarriage, and she thought the counselling had positively impacted her health particularly in terms of reducing emotional eating. She felt her past traumas used to impact her health, but not anymore.

Fig. 3. Perceptions of health case study.

Because there will not always be healthy food at home, we eat what is there. If there is cabbage for the whole week then we will eat cabbage for the whole week. So that means one will not be getting all the nutrients that they need from different foods. (participant 8, interview 4)

Over-eating was also described as a way to cope with stress and past trauma. The impact of the COVID-19 pandemic on health and health behaviours was only mentioned by a few participants. These discussions focused on their uncertainties about the pandemic, concerns about getting sick and the tight restrictions on movement during the initial lockdown period. The dominance of these material difficulties and structural factors in discussions highlight the importance of context in shaping young women's health and health behaviours.

A few participants spoke about the role of internal factors, such as their motivation to be healthy for the sake of their child/children or laziness that stopped them exercising. Participants clearly believed that they had a personal responsibility for their health, a view that was held alongside, and in tension with, a broader view of health as the product of external factors and social. Participants reported positive changes to their health behaviours over the course of the year they were involved in the trial and it is possible that this view of health as an individual responsibility was amplified by their exposure to the intervention. It is troubling that the young women involved in the intervention felt a sense of personal responsibility for their health in the face of profound structural and social issues that made it all but impossible to stay healthy. They live in an environment that does not promote positive life or behavioural changes or support flourishing. It may be that the prevalence of notions of success in spite of difficulty are putting pressure on women to live lives that are near impossible to achieve in their circumstances.

3.4. Experiences of the trial

Participants were positive about their experience of being part of the

Case study: Health behaviours and changes

The participant was raised by her grandmother in a rural area, as her mother worked away from home, and her father died when she was very young. She was often sick as a child, and described growing up as *"tough"*. She had full-time work as a cleaner, and had registered for a business management course; she was happy about the financial independence this could grant her. To her, *ukuphumelela* meant *"having everything I want, not having problems in the future, when things are going my way, and everything is alright.* [And having everything you want, what is everything?] *Having decent employment, earning good money to put things together…putting things together for my children and not suffering."*

During the interviews, she seemed to find it difficult to fully articulate her feelings and thoughts about health, despite probing, although this improved a bit over time. In some interviews, she also provided somewhat conflicting opinions about her health behaviours, for example, she said initially that she has not received health information and had never talked about health, but later in the interview mentioned getting advice from the clinic. She couldn't comment much on her health behaviours at the first interview, other than she did not eat a lot or do physical activity. She did not think she had a healthy lifestyle, but said this was something she chose for herself: "*it was just something I was lusting over.*" She admitted to being "*addicted*" to social media, but that she could not do anything about it except buy a phone without internet.

At her second interview, she described herself as a healthy person because she looked after herself. This was mostly about risk behaviours, e.g. avoiding unprotected sex, not drinking, or doing things to get better when she is sick. At this time, her boyfriend was giving her money to buy groceries, so she felt she could make healthy choices about what food she eats. But she did not think that she cooked healthy food, especially using oil to cook food. She mentioned though that her aunt invites her to exercise with her, but she said "*exercising has its own people and I'm not those people*". She said she did not watch much TV and is "*not a TV person*", but her first photo used as a prompt for discussion in interview 3 was of her watching TV and says she watches for 3 hours a day.

She mentioned that since she started working full time, she is now eating less, exercising more (lifting weights, jogging from work to the bus stop), but sleeping less. Her cleaning work involved physical activity, and she felt it made her "*active and not lazy*". These changes were motivated by her decision to change after she saw she was putting on weight when she went to the clinic for her contraception. By her last interview, she had not lost weight, but had made some progress with her health behaviours. She said she skips every day, but is also spending 5-6 hours on screens. She felt that her health had improved over the year due to her involvement in the trial.

> *"It has helped me because it opened opportunities for me, like to be able to talk about my problems. I am able to talk about things that bother me. I gain a lot of experience from doing this. There are things that I didn't know of before coming here…I have learnt a lot of things…my health behaviours, how to take care of myself."*

Fig. 4. Health behaviour and changes case study.

Bukhali trial. The view of the trial appeared to become more positive overtime. Initially, many of them described being slow to engage with the study sessions and those delivering these sessions. By the last interview, however, participants reported finding the trial information useful, relevant, and applicable to their lives, suggesting that the materials were accessible to this population of young women. A number of participants felt they received better services because they took part in the trial (e.g. free pregnancy and HIV tests), and that waiting times and staff treatment were better than those offered at the clinic. Participants described feeling supported and safe talking to those involved in the trial, and that they could trust the trial staff without fear of judgement. This was in contrast to how participants spoke about trial staff at the beginning of the year, when they seemed unfamiliar with the staff or somewhat indifferent about their role. This emphasises that for an intervention to provide effective support in a context such as Soweto where many people feel disenfranchised from services, time is needed to build trust between participants and staff (see Figs. 4 and 5 for case studies).

For many participants, the trial led to new knowledge about health and health behaviours, which is encouraging given low levels of literacy described earlier. For some, the trial supported pre-existing efforts to improve their health. Participants' responses generally seemed to suggest that the delivery and content of the trial supported their autonomy and agency regarding health behaviours. While the intervention may not substantially shift participants' life trajectories, it appears for some to support changes to more positive behaviours and may thus enable some aspects of flourishing.

> *I used to be a little bit depressed about not working, like staying at home … but now it has changed completely because there is something keeping me busy … I just learnt not to take myself for granted … while I was in Bukhali, I should make things right by my way, focus on my health, focus on my studies, focus on my mental health … physical health and whatsoever … now I can value myself in most of the things that are currently happening and … knowing myself more than before. (participant 2, interview 4)*

Case study: Experiences of the trial case study

The participant grew up away from her mother and was raised mostly by her sister. Her abusive boyfriend tried to kill her when she was in Grade 11. She recalled experiencing a great deal of distress and a lack of support and guidance, with her mother's lack of support being particularly hurtful. Her relationship with her mother had reportedly improved over the course of the interviews, and she felt that the interactions with the team (for the interviews) were helpful for family relations. She described her financial situation as *"rough"*, and had not been able to secure employment or education opportunities due to limited resources.

Her traumatic experiences sometimes made her feel like nobody would even notice if she died and that made her not care about trying to have a healthy lifestyle. She seemed to have been through difficult times in terms of her mental health, and mentioned that her self-esteem is still affected by her traumatic experiences. She was interested in counselling and had tried to access it several years ago, but her family was not able to find help for her, and questioned her need for it so she gave up looking for such support.

This participant frequently used the language of 'healing' in her final interview, both as a need she identified in herself and in others (in the vignette used as a discussion prompt), and in terms of the effects of engaging with the trial. She said the trial has made her understand more things about health, and to care more, for instance, about how she eats. She was positive about what she learnt about health from the trial, and how it motivated her to try and improve her health. She described interactions with the trial staff as very helpful because the conversations gave her hope that something in her life will change, and made her "*want to stand up and do something in life*". For her, *ukuphumelela* was about fighting for success, with the implication of effort put in to overcome difficulties: *"Succeeding is something that has to happen, and you have to fight for it…Success is what I want and it's what I fight for, to succeed because I am trying."*

The trial helped her to speak to people, and she associated talking with "*how she will heal*." She said being part of the study earlier in her life might have set her on a better trajectory earlier; she might have been able to find work and have gotten far in life. She even said she might have killed herself without the study as the talking has relieved her stress:

> *"I am now able to speak to people. I was not able to speak about my problem or my home situation with other people. But since I have been in the study, from the first day I spoke about my situation, it has helped me a lot because now we learn about different things. It's like we are at school, and I am getting some experience…Because if there were no lessons received from Bukhali, maybe I would have killed myself, like most people did. Because just by coming here for a day or for the few minutes that you spend here, you feel relieved of stress, 'cause you are talking."*

Fig. 5. Experiences of the trial case study.

4. Discussion

The longitudinal nature of this study afforded important insights into participants' perceptions of health, their health behaviours, and importantly, locating these perceptions within the context of their life circumstances and their participation in a clinical trial. These insights will not only aid the interpretation of subsequent qualitative and quantitative data from the trial, but also, assist in *a priori* model specification and inclusion of covariates that better account for context. Participants' retrospective reflections on growing up and their home situation depict largely challenging life circumstances, with their present day lives also characterised by instability and precarity in terms of employment and economic situations. While some were more fortunate during the year over which they were followed-up, for most there was a persistent lack of access to educational and employment opportunities. This accords with South Africa's most recent unemployment statistics, which indicate that 60 % of 15–24-year-olds and 39 % of 25–34-year-olds are unemployed (Statistics South Africa, 2024).

The findings also showed that health and health behaviour trajectories of these young women in Soweto lacked stability. Those positive health behaviours that were adopted were not maintained over time, and were subject to changes in participants' life circumstances, such as employment status. Engaging in unhealthy levels of certain behaviours, particularly excessive screen time and sleep, seemed to be a means by which some participants coped with their difficult life circumstances. While the life transitions associated with early adulthood (e.g., leaving home, leaving education) have been shown to impact on health behaviours (Winpenny et al., 2018), the fragility of health and health behaviour trajectories for young women in Soweto appear to go beyond these types of transitions which may typify experiences in high-income settings.

While this study helped to explain some participants' changes in health and health behaviours over time, it also highlighted many of the challenges identified in previous research conducted with HeLTI and in Soweto. This includes participants' difficulties in articulating an understanding of health, and their limited health literacy (Bosire et al., 2021; Draper et al., 2019; Ware et al., 2019). While mental health, often more than physical health, has been identified as a priority in this context (Bosire et al., 2021; Draper et al., 2019, 2020), it was evident that there is a lack of understanding of mental health (e.g. symptoms, treatment, impact), including links between physical and mental health. Dismissive comments made to participants by staff at public health facilities about mental health challenges being something to just "get over", or that they were caused by "thinking too much" will not have supported women to expand their understanding of mental health issues. Over the year of the study, it appeared that many participants became more aware of the importance of health overall. The positive changes that participants described in this year included improved self-esteem and openness to talking both of which are likely to have had positive impact on their mental health and are encouraging signs of an increase in value placed on health by these young women. These findings are echoed in more recent research conducted with the trial (Draper et al., 2025).

Regarding the tension between notions of individual responsibility for health and health behaviour, and a view that acknowledged external influences, other qualitative research in Soweto captured how young people exhibit agency and resistance to dominant health narratives by not engaging in healthy behaviours in the context of structural barriers, even when aware of benefits of these behaviours (Mukoma et al., 2022). HeLTI research has highlighted environmental, social, and structural barriers to behaving healthily that exist for young women in Soweto (Ware et al., 2019), and the negative impact of these material and relational difficulties on their emotional well-being (Cohen et al., 2020). The implication of these findings is that in low-resource contexts the reality that without access to education and employment opportunities, young women are denied the right to live safe and independent lives and impede public health intervention initiatives. A knowledge translation product of such insight has led to the Wits Health Hubb (https://www.witshealthhubb.org) initiative in Soweto to address this barrier.

These study findings suggest that the concept of *ukuphumelela* is a salient lens through which to understand *Bukhali* participants' life circumstances and perceptions of health and health behaviour, as well as their aspirations to flourish in spite of their difficulties. *Ukuphumelela* moves away from depicting flourishing as an individual pursuit, to acknowledging the role of structural factors, personal characteristics, and social dynamics in flourishing, and that these impact on young women's capacity to flourish in the face of difficulty (Cele et al., 2021). The concept of 'structural violence' is also helpful for understanding the way in which structural factors operate in South Africa to inhibit flourishing. Structural violence refers to the social structures, including economic and political systems that prevent individuals, families, communities and societies from meeting their full potential (Galtung, 1969). Structural violence has been used to describe systemic issues in South Africa (Forde et al., 2021) that continue to place low-income communities at a socioeconomic disadvantage (Strauss, 2019), compounding the intergenerational trauma that marginalised communities have experienced since apartheid (Adonis, 2016). The socioeconomic disadvantage and intergenerational trauma experienced by participants and their families are clear in this study. While structural violence might be difficult to measure, this term offers a thoughtful illustration of the structural factors at work in the South African context given its history of violence and oppression which continue to configure the life chances and trajectories of young people today. This is a reality that other frameworks, such as that which describes the social determinants of health, do not fully capture (De Maio & Ansell, 2018).

Participants' growing appreciation of engagement with trial staff over the year of the study, suggest that support from trained staff could be particularly important in managing this structure versus agency tension. The research team have training in supporting behaviour change in ways that takes into account structural challenges that make these changes difficult (Draper et al., 2022). This supportive relationship, building on trust, may turn out to be the mechanism through which the health and agency of trial participants are improved. This trusting relationship has emerged as critical in subsequent qualitative work as part of the *Bukhali* process evaluation (Draper et al., 2024). Or at the very least, these health behaviour changes might take place within the context of a supportive relationship (with staff), again highlighting how crucial it is to understand behaviour change in context. A learning from this study is that building relationships of trust in marginalised or low-resource communities is important to maximise engagement with and impact of a health intervention. It may be better for such interventions to refer to 'health practices' rather than health behaviours (Cohn, 2014) which could provide a more accommodating framework for support and trust within a trial. The notion of health practices tends to avoid the "psychologising and individualising features" that have been associated with 'health behaviours', but rather emphasises the actions and interactions of individuals within certain contexts (Cohn, 2014).

Fig. 6 conceptually summarises the study findings and captures the notions of time and process, which are variable and driven by contextual realities. Women in this context face multiple burdens (multimorbidity, trauma, malnutrition), which are addressed by the *Bukhali* intervention. This study has highlighted key potential levers for behaviour change, which may ultimately improve physical and mental health. These levers include health literacy and behaviour change intention. These levers do not, however, operate independently of the environmental, structural and social factors that are major influences on the life and health trajectories described in this study. Findings from this qualitative longitudinal study suggest, however, that a trusting relationship with a trained Health Helper can fill a gap in social support, offering a stable point in the lives of these young women, and leading not only to behaviour change, but also to improvements in physical but especially mental

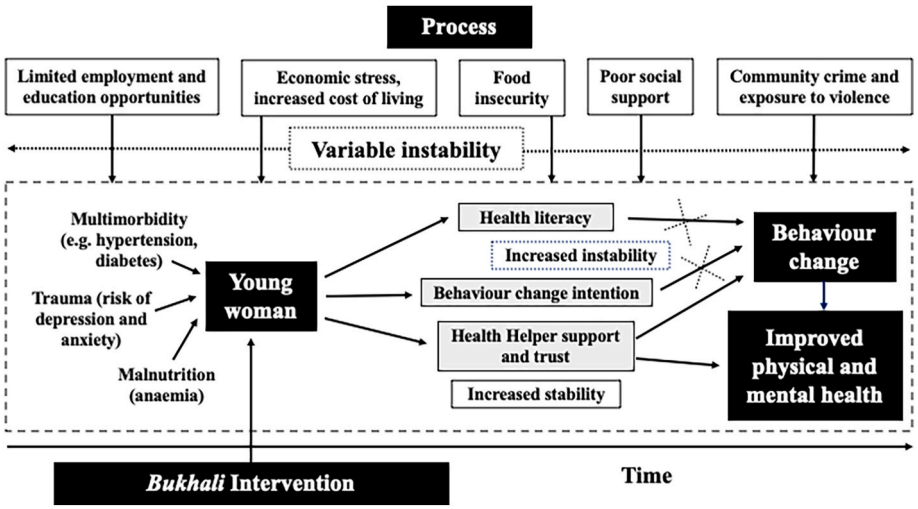

Fig. 6. Conceptual summary figure.

health. These observations have implications for the design, implementation and evaluation of complex interventions in contexts characterised by vulnerability, which can tend to focus on static outcomes, but do not fully consider the instability experienced by participants, which can ultimately have a negative impact on the outcomes of an intervention. For such interventions in vulnerable settings, it is important for the success of an intervention that its implementation can accommodate fluctuations in the social and economic circumstances of participants and support them to manage this instability.

A limitation of this study is that it was conducted over a year, a relatively brief period over which to examine longitudinal change, although we did invite participants to provide retrospective accounts. In addition, given the blinding constraints of the trial, we were not able to identify (in this publication) participants as being in the intervention or control arm of the trial. We could therefore not explore why a number of control participants showed an increased awareness of health and health behaviours, including some positive changes over time. Although the control arm receives material that does not cover any health topics (Norris et al., 2022), it is possible that baseline testing conducted before randomisation, which includes biological measures, as well as questionnaires on target health behaviours, raises participants' awareness of their health and its relationship with their health behaviours. Those participants who were more engaged in the trial may have been more likely to participate in this longitudinal interview study, in which questions about health behaviours may have prompted reflection and led to health behaviour change.

A strength of this study is that, to our knowledge, this is one of the first qualitative longitudinal studies to be embedded in a randomised controlled trial, contributing to a growing body of work that demonstrates the importance of innovative qualitative methods in trial and cohort settings (Watson et al., 2025). The inclusion of this longitudinal approach proved feasible within the process evaluation of a trial, although there is a significant time investment in data management and analysis. Despite anticipated attrition of participants over the 12-month interview period, oversampling ensured that sufficient data were generated. Recruiting participants at randomisation helped to mitigate the risk of recruiting participants who were more positive and enthusiastic about the trial from the outset. The application of a qualitative longitudinal approach has provided more nuanced insights into the complexities of participants' perceptions of health and health behaviours (compared to cross-sectional analyses), and helps to better contextualise behaviour change for these young women, highlighting both changes and continuity over time. Also compared to a cross-sectional analytical approach, this approach better captures the notions of time and process, and the variable instability illustrated in Fig. 6. The study has illuminated the complex and constantly changing interaction between environmental, structural and social factors and health in vulnerable young women living in low-resource communities. Effective interventions to improve health and health behaviour are likely to be those that are sensitive to these interactions and fluctuations, and which support flexible but robust strategies to support participants achieve their health and life goals.

CRediT authorship contribution statement

Catherine E. Draper: Writing – original draft, Visualization, Supervision, Methodology, Formal analysis, Data curation, Conceptualization. **Molebogeng Motlhatlhedi:** Writing – review & editing, Project administration, Methodology, Investigation, Formal analysis, Data curation. **Sonja Klingberg:** Writing – review & editing, Supervision, Methodology, Formal analysis. **Khuthala Mabetha:** Writing – review & editing, Methodology, Formal analysis. **Larske Soepnel:** Writing – review & editing, Methodology, Formal analysis. **Michelle Pentecost:** Writing – review & editing, Methodology, Formal analysis. **Nokuthula Nkosi:** Writing – review & editing, Formal analysis, Data curation. **Gugulethu Mabena:** Writing – review & editing, Project administration, Methodology, Investigation, Formal analysis. **Mary Barker:** Writing – review & editing, Methodology, Conceptualization. **Stephen J. Lye:** Writing – review & editing, Supervision, Funding acquisition. **Shane A. Norris:** Writing – review & editing, Supervision, Funding acquisition, Conceptualization. **Susie Weller:** Writing – review & editing, Methodology, Conceptualization.

Declaration of the use of AI assisted technologies

The authors did not use any AI assisted technologies for this manuscript.

Data availability statement

The authors do not have permission to share the data for this study, due to ethical concerns from the relevant Human Resource Ethics Committee about sharing qualitative interview data outside of the research team due to the risk of potentially identifying participants, but the data can be available from the corresponding author on reasonable request.

Ethical statement

Ethical approval was obtained from the Human Research Ethics

Committee (Medical) at the University of the Witwatersrand (Ref: M190449). All participants gave written informed consent for their involvement in the interviews in addition to that given for taking part in the trial. All procedures contributing to this work comply with the Helsinki Declaration of 1975, as revised in 2008.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ssaho.2025.101622.

References

Adonis, C. K. (2016). Exploring the salience of intergenerational trauma among children and grandchildren of victims of apartheid-era gross human rights violations. *Indo-Pacific Journal of Phenomenology, 16*(2), 1–17. https://doi.org/10.1080/20797222.2016.1184838

Barker, M., Baird, J., Lawrence, W., Jarman, M., Black, C., Barnard, K., Cradock, S., Davies, J., Margetts, B., Inskip, H., & Cooper, C. (2011). The Southampton initiative for health: A complex intervention to improve the diets and increase the physical activity levels of women from disadvantaged communities. *Journal of Health Psychology, 16*(1), 178–191. https://doi.org/10.1177/1359105310371397

Bosire, E. N., Ware, L. J., Draper, C. E., Amato, B., Kapueja, L., & Norris, S. A. (2021). Young women's perceptions of life in urban South Africa: Contextualising the preconception knowledge gap. *African Journal of Reproductive Health, 25*(2), 39–49.

Cele, L., Willen, S. S., Dhanuka, M., & Mendenhall, E. (2021). Ukuphumelela: Flourishing and the pursuit of a good life, and good health, in Soweto, South Africa. *SSM Mental Health, 1*, Article 100022. https://doi.org/10.1016/j.ssmmh.2021.100022

Cohen, E., Ware, L. J., Prioreschi, A., Draper, C., Bosire, E., Lye, S. J., & Norris, S. A. (2020). Material and relational difficulties: The impact of the household environment on the emotional well-being of young Black women living in Soweto, South Africa. *Journal of Family Issues, 41*(8), 1307–1332. https://doi.org/10.1177/0192513X19887524

Cohn, S. (2014). From health behaviours to health practices: An introduction. *Sociology of Health & Illness, 36*(2), 157–162. https://doi.org/10.1111/1467-9566.12140

De Maio, F., & Ansell, D. (2018). "As natural as the air around us": On the origin and development of the concept of structural violence in health research. *International Journal of Health Services, 48*(4), 749–759. https://doi.org/10.1177/0020731418792825

Draper, C. E., Bosire, E., Prioreschi, A., Ware, L. J., Cohen, E., Lye, S. J., & Norris, S. A. (2019). Urban young women's preferences for intervention strategies to promote physical and mental health preconception: A Healthy Life Trajectories Initiative (HeLTI). *Preventive Medicine Reports, 14*, 100846. https://doi.org/10.1016/j.pmedr.2019.100846

Draper, C. E., Cook, C. J., Redinger, S., Rochat, T. J., Prioreschi, A., Rae, D. E., Ware, L. J., Lye, S. J., & Norris, S. A. (2022). Cross-sectional associations between mental health indicators and social vulnerability, with physical activity, sedentary behaviour and sleep in urban African young women. *International Journal of Behavioral Nutrition and Physical Activity, 19*, 82. https://doi.org/10.1186/s12966-022-01325-w

Draper, C. E., Mabena, G., Motlhatlhedi, M., Thwala, N., Lawrence, W., Weller, S., Klingberg, S., Ware, L. J., Lye, S. J., & Norris, S. A. (2022). Implementation of Healthy Conversation Skills to support behaviour change in the Bukhali trial in Soweto, South Africa: A process evaluation. *SSM - Mental Health, 2*, 100132. https://doi.org/10.1016/j.ssmmh.2022.100132

Draper, C. E., Prioreschi, A., Ware, L., Lye, S., & Norris, S. (2020). Pilot implementation of Bukhali: A preconception health trial in South Africa. *SAGE Open Medicine, 8*, 1–12. https://doi.org/10.1177/2050312120940542

Draper, C. E., Soepnel, L. M., Mabetha, K., Motlhatlhedi, M., Nkosi, N., Lye, S. J., & Norris, S. A. (2024). "You go an extra mile": a qualitative study of community health worker perspectives in a health promotion intervention in urban South Africa. *BMC Health Services Research, 24*, 1641. https://doi.org/10.1186/s12913-024-12127-0

Draper, C. E., Thwala, N., Slemming, W., Lye, S. J., & Norris, S. A. (2023). Development, implementation, and process evaluation of Bukhali: an intervention from preconception to early childhood. *Global Implementation Research and Applications, 3*, 31–43. https://doi.org/10.1007/s43477-023-00073-8

Draper, C. E., Tshetu, N., Nkosi, N., Lye, S., & Norris, S. A. (2025). Retention in the Bukhali trial in Soweto, South Africa: a qualitative analysis using self-determination theory. *BMJ Global Health, 10*, e017729. https://doi.org/10.1136/bmjgh-2024-017729

Forde, S., Kappler, S., & Björkdahl, A. (2021). Peacebuilding, structural violence and spatial reparations in post-colonial South Africa. *Journal of Intervention and Statebuilding, 15*(3), 327–346. https://doi.org/10.1080/17502977.2021.1909297

Frohlich, K. L., Corin, E., & Potvin, L. (2001). A theoretical proposal for the relationship between context and disease. *Sociology of Health & Illness, 23*(6), 776–797. https://doi.org/10.1111/1467-9566.00275

Galtung, J. (1969). Violence, peace, and peace research. *Journal of Peace Research, 6*(3), 167–191.

Hanna, E., & Lau-Clayton, C. (2012). *Capturing past and future time in qualitative longitudinal field enquiry: Timelines and relational maps* (Timescapes methods guides series No. 6). www.timescapes.leeds.ac.uk.

Hanson, M., & Aagaard-Hansen, J. (2021). Developmental Origins of Health and Disease: Towards a combined bio-social life-course perspective. *Acta Paediatrica.* , Article 15905. https://doi.org/10.1111/apa.15905. apa.

Hanson, S. K., Munthali, R. J., Micklesfield, L. K., Lobelo, F., Cunningham, S. A., Hartman, T. J., Norris, S. A., & Stein, A. D. (2019). Longitudinal patterns of physical activity, sedentary behavior and sleep in urban South African adolescents, Birth-To-Twenty Plus cohort. *BMC Pediatrics, 19*(1), 241. https://doi.org/10.1186/s12887-019-1619-z

Kehoe, S. H., Wrottesley, S. V., Ware, L., Prioreschi, A., Draper, C., Ward, K., Lye, S., & Norris, S. A. (2021). Food insecurity, diet quality and body composition: Data from the Healthy Life Trajectories Initiative (HeLTI) pilot survey in urban Soweto, South Africa. *Public Health Nutrition, 24*(7), 1629–1637. https://doi.org/10.1017/S136898002100046X

Lawrence, W., Black, C., Tinati, T., Cradock, S., Begum, R., Jarman, M., Pease, A., Margetts, B., Davies, J., Inskip, H., Cooper, C., Baird, J., & Barker, M. (2016). 'Making every contact count': Evaluation of the impact of an intervention to train health and social care practitioners in skills to support health behaviour change. *Journal of Health Psychology, 21*(2), 138–151. https://doi.org/10.1177/1359105314523304

Lewin, S., Glenton, C., & Oxman, A. D. (2009). Use of qualitative methods alongside randomised controlled trials of complex healthcare interventions: Methodological study. *BMJ British Medical Journal, 339*(7723), 732–734. JSTOR.

Lundeen, E. A., Norris, S. A., Adair, L. S., Richter, L. M., & Stein, A. D. (2016). Sex differences in obesity incidence: 20-year prospective cohort in South Africa: Obesity incidence in S. African children. *Pediatric Obesity, 11*(1), 75–80. https://doi.org/10.1111/ijpo.12039

Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science, 6*(1), 42. https://doi.org/10.1186/1748-5908-6-42

Micklesfield, L., Munthali, R., Prioreschi, A., Said-Mohamed, R., van Heerden, A., Tollman, S., Kahn, K., Dunger, D., & Norris, S. (2017). Understanding the relationship between socio-economic status, physical activity and sedentary behaviour, and adiposity in young adult South African women using structural equation modelling. *International Journal of Environmental Research and Public Health, 14*(10), 1271. https://doi.org/10.3390/ijerph14101271

Mudiriza, G., & de Lannoy, A. (2022). *Profile of young NEETs in South Africa* [research brief]. *South African labour and development research unit.* University of Cape Town. https://www.saldru.uct.ac.za/2022/06/30/profile-of-young-neets-in-south-africa/.

Mukoma, G., Bosire, E. N., Klingberg, S., & Norris, S. A. (2022). Healthy eating and physical activity: Analysing Soweto's young adults' perspectives with an intersectionality lens (p. 2022.12.06.22283184) *medRxiv*. https://doi.org/10.1101/2022.12.06.22283184.

Neale, B. (2019). *What is qualitative longitudinal research?* Bloomsbury Academic. https://doi.org/10.5040/9781472532992

Neale, B. (2021). *The craft of qualitative longitudinal research.* Sage Publications Ltd.

Norris, S. A., Draper, C. E., Smuts, C., Prioreschi, A., Ware, L. J., Dennis, C. L., Awadalla, P., Bassani, D. G., Bhutta, Z. A., Briollais, L., Cameron, B., Chirwa, T., Fallon, B., Gray, C., Hamilton, J., Jamison, J., Jaspan, H., Jenkins, J. M., Kahn, K., Kenge, A., Lambert, E. V., Levitt, N., Martin, M. C., Ramsey, M., Roth, D. E., Scherer, S. W., Sellen, D., Slemming, W., Sloboda, D. M., Szyf, M., Tollman, S., Tomlinson, M., Tough, S., Matthews, S., Richter, L. M., & Lye, S. J. (2022). Building knowledge, optimising physical and mental health, and setting up healthier life trajectories in South African women (Bukhali): a preconception randomised control trial part of the Healthy Life Trajectories Initiative (HeLTI). *BMJ Open, 12*, e059914. https://doi.org/10.1136/bmjopen-2021-059914

Nyati, L. H., Pettifor, J. M., & Norris, S. A. (2019). The prevalence of malnutrition and growth percentiles for urban South African children. *BMC Public Health, 19*(1), 492. https://doi.org/10.1186/s12889-019-6794-1

O'Cathain, A., Thomas, K. J., Drabble, S. J., Rudolph, A., & Hewison, J. (2013). What can qualitative research do for randomised controlled trials? A systematic mapping review. *BMJ Open, 3*(6), Article e002889. https://doi.org/10.1136/bmjopen-2013-002889

Perski, O., Keller, J., Kale, D., Asare, B. Y.-A., Schneider, V., Powell, D., Naughton, F., ten Hoor, G., Verboon, P., & Kwasnicka, D. (2022). Understanding health behaviours in context: A systematic review and meta-analysis of ecological momentary assessment studies of five key health behaviours. *Health Psychology Review, 16*(4), 576–601. https://doi.org/10.1080/17437199.2022.2112258

Prioreschi, A., Brage, S., Westgate, K., Norris, S. A., & Micklesfield, L. K. (2017). Cardiorespiratory fitness levels and associations with physical activity and body composition in young South African adults from Soweto. *BMC Public Health, 17*(1), 301. https://doi.org/10.1186/s12889-017-4212-0

Prioreschi, A., Wrottesley, S. V., & Norris, S. A. (2021). Physical activity levels, food insecurity and dietary behaviours in women from Soweto, South Africa. *Journal of Community Health, 46*(1), 156–164. https://doi.org/10.1007/s10900-020-00861-5

Redinger, S., Norris, S. A., Pearson, R. M., Richter, L., & Rochat, T. (2018). First trimester antenatal depression and anxiety: Prevalence and associated factors in an urban population in Soweto, South Africa. *Journal of Developmental Origins of Health and Disease, 9*(1), 30–40. https://doi.org/10.1017/S204017441700071X

Sedibe, M., Feeley, A., Voorend, C., Griffiths, P.l., Doak, C., & Norris, S. (2014). Narratives of urban female adolescents in South Africa: Dietary and physical activity practices in an obesogenic environment. *South African Journal of Clinical Nutrition, 27*(3), 114–119. https://doi.org/10.1080/16070658.2014.11734499

Sedibe, M., Pisa, P., Feeley, A., Pedro, T., Kahn, K., & Norris, S. (2018). Dietary habits and eating practices and their association with overweight and obesity in rural and urban Black South African adolescents. *Nutrients, 10*(2), 145. https://doi.org/10.3390/nu10020145

Sheard, L., & Marsh, C. (2019). How to analyse longitudinal data from multiple sources in qualitative health research: The pen portrait analytic technique. *BMC Medical Research Methodology, 19*(1), 169. https://doi.org/10.1186/s12874-019-0810-0

Short, S. E., & Mollborn, S. (2015). Social determinants and health behaviors: Conceptual frames and empirical advances. *Current Opinion in Psychology, 5*, 78–84. https://doi.org/10.1016/j.copsyc.2015.05.002

Statistics South Africa. (2024). Quarterly labour force survey: Q4 2024. https://www.statssa.gov.za/publications/P0211/Presentation%20QLFS%20Q4%202024.pdf.

Strauss, M. (2019). A historical exposition of spatial injustice and segregated urban settlement in South Africa. *Fundamina, 25*(2). https://doi.org/10.17159/2411-7870/2019/v25n2a6

Tuthill, E. L., Maltby, A. E., DiClemente, K., & Pellowski, J. A. (2020). Longitudinal qualitative methods in health behavior and nursing research: Assumptions, design, analysis and lessons learned. *International Journal of Qualitative Methods, 19*, Article 160940692096579. https://doi.org/10.1177/1609406920965799

Ware, L. J., Kim, A. W., Prioreschi, A., Nyati, L. H., Taljaard, W., Draper, C. E., Lye, S. J., & Norris, S. A. (2021). Social vulnerability, parity and food insecurity in urban South African young women: The Healthy Life Trajectories Initiative (HeLTI) study. *Journal of Public Health Policy*. https://doi.org/10.1057/s41271-021-00289-8

Ware, L. J., Prioreschi, A., Bosire, E., Cohen, E., Draper, C. E., Lye, S. J., & Norris, S. A. (2019). Environmental, social, and structural constraints for health behavior: Perceptions of young urban black women during the preconception period: A healthy life trajectories initiative. *Journal of Nutrition Education and Behavior, 51*(8), 946–957. https://doi.org/10.1016/j.jneb.2019.04.009

Watson, D., Riley, T., Tize, C., Muniz, T., Gibbon, S., & Pentecost, M. (2025). What is innovative in qualitative methods in birth cohort studies? A scoping review. *Journal of Biosocial Science*, 1–20. https://doi.org/10.1017/S0021932025000161

Weller, S., Lyle, K., & Lucassen, A. (2022). Re-imagining 'the patient': Linked lives and lessons from genomic medicine. *Social Science & Medicine, 297*, Article 114806. https://doi.org/10.1016/j.socscimed.2022.114806

Williams, G. H. (2003). The determinants of health: Structure, context and agency. *Sociology of Health & Illness, 25*(3), 131–154. https://doi.org/10.1111/1467-9566.00344

Winpenny, E. M., van Sluijs, E. M. F., White, M., Klepp, K.-I., Wold, B., & Lien, N. (2018). Changes in diet through adolescence and early adulthood: Longitudinal trajectories and association with key life transitions. *International Journal of Behavioral Nutrition and Physical Activity, 15*(1), 86. https://doi.org/10.1186/s12966-018-0719-8

Wrottesley, S., Pisa, P., & Norris, S. (2017). The influence of maternal dietary patterns on body mass index and gestational weight gain in urban Black South African women. *Nutrients, 9*(7), 732. https://doi.org/10.3390/nu9070732

Wrottesley, S. V., Prioreschi, A., Kehoe, S. H., Ward, K. A., & Norris, S. A. (2020). A maternal "mixed, high sugar" dietary pattern is associated with fetal growth. *Maternal and Child Nutrition, 16*(2). https://doi.org/10.1111/mcn.12912