# Interventions for compassionate nursing care: a systematic review

Karin Blomberg1,2, Peter Griffiths2,3,Yvonne Wengstrom2,4, Carl May2,3, Jackie Bridges2,3

*1Faculty of Medicine and Health, School of Health Sciences, Örebro University, Sweden; 2Faculty of Health Sciences, University of Southampton,UK;3National Institute for Health Research Collaboration for Leadership in Applied Health Research and Care (Wessex);4Department of Neurobiology, Care Sciences and Society, Division of Nursing, Karolinska Institutet, Sweden*

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Corresponding author:

Karin Blomberg

Faculty of Medicine and Health

School of Health Sciences

Örebro University

S-70182 Örebro Sweden

Tel. +46-19-30 12 70

Fax: +46-19-30 36 01

E-mail: [karin.blomberg@oru.se](https://mail.oru.se/owa/redir.aspx?C=e14db3285dc54ef5a009ad243a1f9312&URL=mailto%3akarin.blomberg%40oru.se)

# ABSTRACT

**Background:**

## Compassion has been identified as an essential element of nursing and is increasingly under public scrutiny in the context of demands for high quality health care. While primary research on effectiveness of interventions to support compassionate nursing care has been reported, no rigorous critical overview exists.

**Objectives:**

To systematically identify, describe and analyse research studies that evaluate interventions for compassionate nursing care; assess the descriptions of the interventions for compassionate care, including design and delivery of the intervention and theoretical framework; and to evaluate evidence for the effectiveness of interventions.

## Review methods: Published international literature written in English up to June 2015 was identified from CINAHL, Medline and Cochrane Library databases.  Primary research studies comparing outcomes of interventions to promote compassionate nursing care with a control condition were included.  Studies were graded according to relative strength of methods and quality of description of intervention.  Narrative description and analysis was undertaken supported by tabulation of key study data including study design, outcomes, intervention type and results.

**Results:** 25 interventions reported in 24 studies were included in the review.  Intervention types included staff training (n=10), care model (n=9) and staff support (n=6).  Intervention description was generally weak, especially in relation to describing participants and facilitators, and the proposed mechanisms for change were often unclear.  Most interventions were associated with improvements in patient-based, nurse-based and/or quality of care outcomes. However, overall methodological quality was low with most studies (n=16) conducted as uncontrolled before and after studies.  The few higher quality studies were less likely to report positive results.  No interventions were tested more than once.

**Conclusions:** None of the studies reviewed reported intervention description in sufficient detail or presented sufficiently strong evidence of effectiveness to merit routine implementation of any of these interventions into practice. The positive outcomes reported suggest that further investigation of some interventions may be merited, but high caution must be exercised. Preference should be shown for further investigating interventions reported as effective in studies with a stronger design such as randomised controlled trials.

**Keywords**: compassion, caring, dignity, nurses, professional-patient relations, systematic review

# What is already known about the topic?

* Compassion has been identified as an essential element of nursing and is increasingly under public scrutiny in the context of demands for high quality health care.
* Primary research on effectiveness of interventions to support compassionate nursing care has been reported but there is no consensus on what is effective in providing this support.
* There are currently no systematic reviews of the effect of interventions or programmes to improve compassion in nursing.

**What this paper adds**

* Interventions reported in the research literature that are targeted at supporting compassionate nursing care vary widely and focus either on staff training, staff support or introducing a new care model to practice.
* Studies reporting the effectiveness of compassionate nursing care interventions report mostly positive effects on one or more patient-based, nurse-based and/or care quality outcomes.
* The quality of intervention description and the underlying methods are mostly poor, providing scant evidence of actual effectiveness and so the evidence provides little guidance to those seeking to support compassionate nursing care.

# 1. Introduction

The need to strengthen the delivery of compassionate health care, in particular for people with chronic illness in hospital settings, is consistently identified as essential to healthcare (Dewar et al. 2014, Dewar and Nolan 2013, Schantz 2007). Several studies and reports have indicated deficiencies in healthcare globally and related to nursing care in particular, with particular scrutiny of relational aspects of care such as dignity and compassion (Franklin et al. 2006, Maben et al. 2010, Hall et al. 2009, Youngson 2011, Francis 2013). Compassion is also emphasized as pivotal in caring by nursing science theorists such as Eriksson (1992) and Watson (2008). There has also been an increasing public scrutiny of the delivery of compassionate care, as evidenced through media coverage, political interest and resulting policy developments. This is particularly emphasised in UK, where the recent Francis inquiry into hospital care for older people highlighted substantial and significant variations in care quality, with a lack of compassion towards patients by hospital staff identified as a significant feature in the care failures investigated (Francis 2010, Francis 2013).

Definitions of compassion abound, and the literature is both confused and confusing in the way that terms are used and often conflated. However, we can identify four key components of the narrative of compassion. The first is a set of ideas about the *moral attributes* of a ‘compassionate’ nurse. These include wisdom, humanity, love, and empathy (Dewar et al. 2014, Maben et al. 2010, Schantz 2007). These moral attributes may be expressed through a kind of *situational awareness* in which degrees of vulnerability and suffering are perceived and acknowledged (Chochinov 2007, Schantz 2007). Setting up compassion in this manner firmly links it to participation of the nurse in *responsive action* that is aimed at relieving suffering and ensuring dignity, and which involves the nurse in some sort of participatory relationship in which the nurse exercises *relational capacity* (Cameron et al. 2013, Dewar and Cook 2014, Schantz 2007, Von Dietze and Orb 2000) through which empathy is experienced and a caring pastoral relationship is constructed (Bridges et al. 2013, Hartrick 1997, May 1992).

Although current definitions of compassion in nursing practice are imprecise and sometimes confused, there is intense interest in this problem both within and outside of the profession of nursing. Little is known about what strategies are effective in promoting compassionate care among nurses. There is, to date, no rigorous critical overview of research assessing the effectiveness of programmes and interventions promoting compassionate care among nurses in practice. This paper reports a systematic review which fills this gap, using the four key components of the compassion narrative identified above to provide an operational definition. The objectives of the review are to:

i) systematically identify, analyse and describe studies that evaluate interventions for compassionate nursing care

ii) assess the descriptions of the interventions for compassionate care used, including design and delivery of the intervention and theoretical framework

iii) evaluate the nature and strength of evidence for the impact of interventions.

# 2. Methods

A systematic review was conducted, guided by the Cochrane Collaboration methods to assure comprehensive search methods and systematic approaches to analysis of the review materials (Higgins and Green 2011).

## 2.1 Search strategy

A systematic search for primary research evaluating compassionate care interventions was undertaken on three databases CINAHL, Medline and the Cochrane Library (including the Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effectiveness, CENTRAL register of controlled trials, Health Technology Assessment Database and Economic Evaluations Database) in June 2015. No date limits were applied to searches conducted.

Terminology in relation to compassionate care is problematic and as noted above, there is no one agreed definition of compassionate care. Instead, a number of terms are used interchangeably and inconsistently across the health care literature. A broad and inclusive approach was therefore used in preliminary searches to scope and map the field. As many terms relating to compassionate care were identified and used as possible, but with a focus on identifying studies that reflected one or more of the key components of compassionate care outlined above. Through this mapping, relevant keywords were identified (e.g. Professional-Patients relations, Dignity, Person-centred care, Relationship centred care, Empathy, Compassion, Caring, and Emotional Intelligence). Key words identified through the preliminary mapping exercise were used in final searches. Terms related to compassion were combined (AND) with terms related to relevant methods and occupational groups. Relevant index terms were included, which varied across databases (see Table 1 for Medline and CINAHL searches). While no additional searches for unpublished (so called ‘grey’) literature were conducted, the sources used do index PhD theses (CINAHL) and some conference abstracts (CIHAHL, Cochrane Library). Searches were limited to the English language.

---Please insert Table 1 about here---

## 2.2 Selection

An adapted PICO framework was used to guide study selection (Sackett et al. 1997). We included primary research studies comparing the outcomes of an intervention designed to enhance compassionate nursing care (in any setting to any client group) with those of a control condition. Eligible designs were randomised controlled trials (including cluster randomised trials) or other quasi-random studies, interrupted time series and before and after studies (controlled or uncontrolled). Studies were excluded if they were focused exclusively on students, or if interventions were not directed at changing nursing staff behaviour.

The lack of conceptual clarity about compassion in the literature necessitated an inclusive approach to studies that were not necessarily labelled as addressing “compassion”. We developed selection criteria based on the four elements of the compassion narrative described above (*moral attributes* of a ‘compassionate’ nurse including empathy, nurses’ *situational awareness of vulnerability and suffering,* nurses’ *responsive action* aimed at relieving suffering and ensuring dignity, and nurses’ *relational* capacity) so that studies were included if they met one or both of the following criteria:

1. explicit goal of the intervention was stated as improving compassionate nursing care (or a closely related construct, that is, dignity, relational care, emotional care) (through addressing nurses’ moral attributes, situational awareness, responsive action and/or relational capacity) and/or
2. primary outcomes that assessed or evaluated either nurses’ self-reports of compassion and/or ability to deliver compassionate care (moral attributes, relational capacity), and/or observed quality of interactions or other measure of compassion (situational awareness, responsive action), including patient reports of experienced compassion or a closely related construct.

The titles and abstracts from the search were screened against the inclusion criteria independently by four researchers in the team. During the screening process, frequent meetings were held among research team members in order to compare independent selections, resolve disagreements and make decisions. On independent rating (i.e. before discussion) reviewer pairs achieved between 80% and 90% agreement. In most cases of disagreement papers were excluded after discussion. Full-text papers were retrieved for all papers that screened positively in the first stage or about which a clear decision could not be taken (due to lack of information). Each full-text paper was reviewed independently by two team members followed by a decision to include or exclude in the final review. These reviews were followed by further team discussion to finalise inclusion into the dataset. The search and selection process is summarized in the PRISMA flow chart (see Figure 1).

---Please insert Figure 1 about here---

## 2.3 Quality Assessment

In order to effectively represent the variation in study quality evident in findings from the preliminary mapping phase, and to properly reflect the strength of evidence, we undertook a simple grading in order to categorise the strength of the underlying design of studies we retrieved (Guyatt et al. 2008). In line with the GRADE system for rating quality of evidence, a rating of strong, medium or weak quality was allocated to each study depending on where the study design sat on the hierarchy of evidence for effectiveness in tandem with an assessment of its design and execution (Greenhalgh 2014, Guyatt et al. 2008). Studies were rated as high quality where outcomes were compared between treatment (intervention) and control groups, where allocation to groups was random, and where equivalence between groups was explicitly demonstrated. Study designs included here were randomised controlled trials (RCTs) and cluster RCTs which met these conditions. Studies were rated as medium quality where outcomes were compared between intervention and control groups, and where equivalence between groups was demonstrated, but where other methodological issues weakened the design, for instance non-random allocation to groups or small sample size. Study designs included here were cluster RCTs with small numbers of clusters (for instance, n=2) and controlled before and after studies with non-random allocation to groups. Uncontrolled before and after studies were rated as low quality as were other studies where other significant methodological shortfalls weakened claims of demonstrating effectiveness (e.g. controlled before and after studies where equivalence between groups is not demonstrated). These quality assessments were made by individual members of the research team, and checked with one other team member’s ratings until consistent ratings were achieved.

An evaluation of quality of description of the intervention was also performed for each included study. Each study was analysed against the criteria for description of group-based behaviour change interventions devised by Borek and colleagues (Borek et al. 2015). This framework provides a checklist for assessing the reporting of behaviour change interventions against 26 criteria covering intervention design, intervention content, participants and facilitators. Intervention design features assessed included intervention development methods; setting; venue characteristics; number, length and frequency of group sessions; and period of time over which group meetings were held. Intervention content assessed included change mechanisms or theories of change, change techniques, session content, sequencing of sessions, and participants’ materials activities during sessions and methods for checking fidelity of delivery. Participant features assessed included group composition and size, methods for group allocation, and continuity of group membership. Facilitation features assessed included number of facilitators; facilitator characteristics and preparation including professional background, personal characteristics, training in intervention delivery and training in group facilitation; continuity of facilitator’s group assignment, facilitator’s materials and intended facilitation style. These assessments were conducted by one team member, and supplemented and refined in discussion with other team members.

## 2.4 Data analysis

A qualitative analysis was conducted across the different interventions reported to describe intervention types and contexts, and mechanisms for change. This analysis was conducted in smaller groups in the research team but further enriched through discussion of process and emerging findings among all group members.

Data were extracted for each study including study design, sample and settings, summary details of intervention, outcomes and measurements, and results. Results were tabulated and used to generate summary descriptions across key characteristics. Heterogeneity of studies in terms of interventions, methods and outcomes meant that a meta-analysis was not warranted, and so a more descriptive approach was merited. The main intervention types were agreed through team discussion, as were key outcome types. Findings on effectiveness of individual interventions were plotted against key outcome types and this was used as the basis for an analysis of evaluation strategies by intervention type and strength of evidence of effectiveness across intervention type and across the field as a whole. We recorded and tabulated both the direction of differences between groups (where reported) and statistical significance of differences. For controlled before and after studies, where there was no test of between group differences or group by time interaction, this was categorised as a non-significant difference irrespective of a significant within group difference.

# 3. Results

The review findings are presented here to address each of the review objectives in turn. Firstly we describe study characteristics to gives an overview of studies that evaluate interventions for compassionate care. Secondly we present an assessment of the quality of reporting of the interventions in the included studies, including their theoretical foundations. Thirdly we present evidence of effectiveness of the interventions in the included studies and analysis of the quality of that evidence.

1. *Study characteristics*

The final data set comprised 24 studies reporting 25 interventions (see Figure 1). Twenty two studies were published in journals and a further two were doctoral theses. Three types of intervention were identified. Staff training interventions (n=10, summarised in Table 2a) focused on the development of new skills and knowledge in nursing staff such as a training course in empathic skills communication. Care model interventions (n=9, Table 2b) focused on the introduction of a new care model to a service such as person-centred care. Nurse support interventions (n=6, Table 2c) focused on improving nursing staff support and wellbeing through, for instance, the provision of clinical supervision.

\*\*Insert Figure 1 and Tables 2a-2c about here\*\*

Tables 2a-c illustrate study characteristics, study design features including outcomes measured and a summary of findings. They reflect a range of study settings including hospital (n=14), care/nursing homes (n=6), other community settings (n=3) and one study that used a range of health and social care settings (n=1). All but one of the staff training studies was conducted in hospital settings, and six out of eight care model interventions were conducted in care home settings. Nurse support intervention studies were conducted in hospital settings (n=3), district nursing services (n=1), hospice at home (n=1) and outpatient oncology service (n=1). Eleven studies were conducted in USA, with the other studies conducted in a range of other countries mostly in Europe but also including Australia, Canada, China and Turkey.

Study participants included nurses, nurse managers, patients and relatives. To evaluate the effect of the interventions a range of measurements were used, mainly self-reported instruments, but the effect was also proxy rated by researchers and using instruments based on researcher assessments of verbal communication and interaction. The outcomes measured in the studies varied widely, but could be classified into three types: nurse-based outcomes, quality of care, and patient-based outcomes.

1. *Quality of intervention reporting*

Three types of intervention were identified: staff training, care model and nurse support. Interventions varied considerably in the extent to which they drew on an explicit theoretical foundation. Staff training interventions comprised training on verbal interactions, communication, communicating about spirituality and spiritual care, and empathy. Only four staff training interventions in included studies had an explicit theoretical base. These were Solution-Focused Brief Therapy (Boscart 2009), relationship-based care model/caring theories (Glembocki and Dunn 2010), reminiscence theory and adult learning theory (Puentes 1995), and the Tibetan Buddhist tradition (Wasner et al. 2005). Some interventions drew on definitions of particular concepts, such as empathy (Ançel 2006, La Monica et al. 1987, Searcy 1990) and caring behaviours (Yeakel et al. 2003). Other studies lacked an explicit theoretical foundation, referring only to results from previous research studies.

By contrast, all interventions introducing and testing a new care model were underpinned by an explicit framework. Most used theories or models developed in caring and nursing, except for one study using the International Classification of Functioning, Disability and Health (ICF) as the basis for an intervention to promote patient-centred communication with those living with aphasia/communication impairments (McGilton et al. 2010). Frameworks emphasised the person-centred care/environment/nursing (Chenoweth et al. 2014, McCance et al. 2009, Pipe et al. 2010), relationship between nurse and patients (Brown Wilson et al. 2013, Finnema et al. 2001, McGilton et al. 2003) or dignity in care (Ho et al. 2015).

Nurse support interventions were based on reducing compassion fatigue, burnout, and/or secondary traumatic stress (Flarity et al. 2013, Potter et al. 2013); and/or bolstering personal resources such as compassion satisfaction, resiliency, empathy (Flarity et al. 2013, Potter et al. 2013) or sense of coherence (Pålsson et al. 1996a). Three were based on mindfulness theory (Gauthier et al. 2015, Horner et al. 2014, Palmer 2010).

Reviewer ratings of the quality of intervention reporting in each study against each item in the Borek et al. (2015) framework for description of group-based behaviour change interventions are displayed in Table Three. As is evident, the reporting of the interventions varied across all intervention types but was generally weak, with no intervention reports meeting all of the criteria deemed necessary for full intervention reporting. The design and the content of the interventions tended to be better described than details of the participants and the facilitators of the interventions. Overall compliance for intervention design reporting was 52% of criteria (shown in Table 3 row labelled “average % compliance by aspect of reporting”). The intervention design item with highest compliance, (inclusion of details of the length of training sessions) was included in 73% (n=16) of the 24 studies. The lowest was a specification of venue characteristics (n=4, 17%).

For intervention content, highest compliance was reported for session content (n=20, 87%) and lowest for participants’ materials (n=8, 33%). Overall compliance for this aspect of intervention reporting was 50% of criteria. For reporting of participants, highest compliance was for description of group composition (n=21, 88%) and lowest for continuity of participants’ group membership (n=3, 14%). Overall compliance for this aspect of intervention reporting was 37% of criteria. For reporting of facilitators, highest compliance was for reporting facilitators’ professional background (n=12, 55%) and lowest was for facilitators’ personal characteristics and training in-group facilitation (both n=1, 5%). Overall compliance for this aspect of intervention reporting was 25% of criteria. On average, individual study compliance with the criteria was 42%, ranging from 8% to 65%. Of intervention types, care model interventions tended to be less well described than other types (average of 33% compliance).

*\*\*Please insert Table 3 about here\*\**

1. *Evidence of effectiveness*

This section presents findings on the quality of evidence of effectiveness of the interventions in the included studies. Overall, methodological quality was low. Most studies either did not randomise to the groups and/or did not demonstrate equivalence between groups, weakening confidence in the findings. Only two studies were assessed as high quality and two as medium. The remaining 18 studies were assessed as low quality. Most studies (n=16) were uncontrolled before and after studies. Four studies were before and after studies with separate intervention and control groups (Horner et al. 2014, Searcy 1990) (McGilton et al. 2003, Pålsson et al. 1996b). Four studies used a randomised controlled design. Three used a cluster RCT design, with clustering at unit or institutional level (La Monica et al. 1987, Chenoweth et al. 2014, Finnema et al. 2001). A further study was controlled but only included a post-test measure (Puentes 1995).

Of the 24 studies, only eight studies included more than 100 participants. The largest sample included 115 nurses and 656 patients in an evaluation of an empathy-training program (La Monica et al. 1987). The smallest sample included nine nurses in an evaluation of mindfulness based cognitive therapy for district nurses working with women with newly diagnosed breast cancer (Palmer 2010). The number of clusters in controlled studies ranged from two to 38. Table Four provides an overview of results from the individual studies against the range of outcomes used. Eighteen different types of outcomes were reported. For simplicity and brevity results for multiple measures using the same instrument or different instruments measuring same phenomena have been grouped together and treated as one. Across all studies and all outcome types results for 67 outcomes are reported.

\*\**Insert Table 4 about here\*\**

Studies of similar intervention types tended to use similar outcome types. Nurse support intervention studies primarily measured nurse-based outcomes. No nurse support studies used quality of care outcomes and just one study used patient-based outcomes. In contrast, care model intervention studies primarily used outcomes related to quality of care and patient-based outcomes, but use of nurse outcomes was less common. Training intervention studies used the widest range of outcome type. Although the majority used nurse-based outcomes a small number drew on quality of care and patient outcomes.

Nineteen studies (79%) reported a significant positive difference in one or more outcomes (i.e. a beneficial effect of the compassionate care intervention). Only five (21%) of the 24 studies reported no significant difference in any of the outcomes types measured. Of the 67 outcome types assessed across all studies, 32 (48%) showed significant positive effects for the intervention, with a further 18 (27%) showing positive but non-significant results. There were no significant negative differences and only three non-significant negative results.

Patient outcomes were less likely to show significant differences, with only 5/17 (29%) showing statistically significant differences. Studies of low methodological quality were more likely to report outcomes in favour of the intervention, with low methodological quality studies reporting a mean of 92% of outcomes in favour of the intervention (significant + non-significant positives) whereas higher quality (medium, high) studies report 55% of outcomes in favour of the intervention. While on average 76% of outcomes reported in studies of training interventions showed a statistically significant benefit, only 21% of outcomes for nurse support interventions were significant. Crucially no intervention has been evaluated more than once.

*Effects on patient-based outcomes*

Six care model intervention studies reported patient-based outcomes. Of these, three of showed statistically significant effects on a patient-based outcome. Of these, one was rated as high quality. In their cluster RCT with 38 nursing homes, Chenoweth et al. (2014) reported that the person-centred care intervention had a significant positive effect on reducing patient agitation, but the combined intervention (person-centred care plus person-centred environment) reported in the same study showed a non-significant effect of increasing patient agitation. This study fared poorly in terms of reporting of intervention description, meeting only 27% of criteria.

Three training intervention studies reported patient-based outcomes and of these, two showed a significant positive effect. One medium quality study reported significant positive effects on patient anxiety (LaMonica 1987) and one low quality study reported a non-significant positive difference to patient satisfaction (Yeakel 2003). A low quality nurse support intervention study reported a non-significant improvement to patient satisfaction (Horner 2014).

*Effects on quality of care outcomes*

Four training intervention and six care model intervention studies examined effect on quality of care outcomes. Of these, eight reported a statistically significant improvement in one or more outcomes. The combined person-centred care model intervention reported by Chenoweth et al (2014) was associated with a significant improvement in quality of interactions, but although this finding is from a high quality study, conclusions are tempered by the lack of intervention description noted above. In a cluster RCT rated as high quality, Finnema et al. (2001) reported a significant change in one dimension of quality of care following implementation of emotion-oriented care in nursing home settings, but the intervention description only met 35% of the criteria. In a medium quality evaluation of a relationship-enhancing programme of care in nursing homes, McGilton et al (2003) reported significant improvements in relational care, care providers’ relational behaviour and continuity of care. A medium quality evaluation of empathy training for hospital nurses found no difference in interpersonal support (Searcy 1989). Other improvements in quality of care outcomes were reported by a range of low quality studies (Boscart 2009, Langewitz et al. 2010, McCance et al. 2009, McGilton et al. 2010, Yeakel et al. 2003).

*Effects on nurse-based outcomes*

Seven training, six nurse support and three care model intervention studies examined effects on nurse-based outcomes and, of these, ten reported a significant improvement associated with the intervention. All of these ten studies were rated as low quality. Three medium quality studies investigated nurse-based outcomes but none showed significant differences (LaMonica 1987, Palsson 1996, Searcy 1989). No high quality studies reported on nurse-based outcomes.

# 4. Discussion

This systematic review aimed to provide an overview of the evidence base on the effectiveness of interventions for compassionate nursing care, including an assessment of descriptions of the interventions for compassionate care, and an evaluation of the nature and strength of evidence of effectiveness.

Findings reflect a wide range of intervention studies where compassion has been addressed in a variety of ways including through staff training, staff support or introducing a new care model. Overall we identified 25 interventions reported in 24 studies. These findings present a unique overview of the type of interventions being developed to address perceived deficiencies in nursing care, indicating an overwhelming lack of consensus in the field as to the best way to improve practice. The most common type of intervention focused on training nursing staff, in spite of evidence that deficits in relational care are not clearly linked to knowledge deficits, but instead to organisational barriers and that more multi-faceted educational interventions may yield greater benefits to nursing practice (Bridges et al. 2013, Kuske et al. 2007, Spector et al. 2013). Many interventions lacked an explicit theoretical foundation and the mechanisms for change were unclear in most studies reviewed. No study reported sufficient detail of its intervention to enable replication and further evaluation. This state of play limits the capacity of nurses and others to include effective strategies in their own practice, but also limits the construction of a coherent evidence base to guide managers and practitioners in improving services (Hoffmann et al. 2014, Möhler et al. 2012, Craig et al. 2013).

In relation to the nature and strength of the existing evidence base, most interventions were associated with improvements on one or more outcomes with positive effects shown on nurse, patient and quality of care outcomes. However, overall quality of the evidence was low and it appears that the few higher quality studies are less likely to report positive results. No intervention has been tested more than once and the majority of studies use before and after designs that are intrinsically weak. Patient-based outcomes were not routinely included, especially in relation to the evaluation of training interventions and nurse support interventions.

Consequently, while there appears to be some evidence for benefit in terms of patient and quality of care outcomes from strong studies for three different care model interventions, the importance of these results and the implications for practice are far from clear. Given the priority given to ‘compassion’ in the policy discourse on contemporary nursing this is a disconcerting finding, especially given that our conclusion is not the result of an overall lack of research. However, the research has not been programmatic, and so there has been no accumulation of evidence around clearly defined (and described) interventions. This state of affairs has been noted in nursing research more generally, with few studies of interventions using randomised controlled trials and little evidence of a programmatic approach noted in an analysis of research reported in leading nursing journals in 2010 (Richards et al. 2014). While the person centred care / environment (Chenoweth et al. 2014) and emotion oriented care / model care plan (Finemma et al. 2001) showed potential for improving quality of care and patient outcomes in care homes using strong study designs, such results require further investigation. We found no equivalent evidence of any quality for interventions in acute settings.

Any of the interventions we investigated might be deemed worthy of further investigation based on their positive outcomes but none could be recommended for routine implementation. However, the extent to which this evidence motivates further investigation is limited, given the lack of theoretical basis and description for many interventions, the pervasive positive bias that is associated with weak study designs, and the lack of evidence for impact on patient outcomes in most studies. While there is little evidence that observational studies *per se* yield systematically more favourable estimates of effect to randomised controlled trials (Anglemyer et al. 2014), specific design weaknesses are known to yield positively biased estimates of benefits (Pildal et al. 2007, Moher et al. 1998) and such problems are easier to control in randomised studies. Furthermore, the uniformly positive picture of benefit associated with these interventions may result, in part, from selective reporting of positive results. While just under half of all outcomes assessed showed positive statistically significant results, evidence from analyses of outcomes from trials suggests that unreported outcomes are much more likely to be non-significant (Chan and Altman 2005). Other studies suggest that studies with non-significant results are less likely to be published (Dwan et al. 2013). Furthermore, even if replication was justified by the results, replicating the interventions reviewed here would be difficult, if not impossible, because compliance with guidance for reporting the interventions was poor.

These limitations need to be addressed in future research. Adherence to recognised and emerging standards for developing and evaluating complex interventions, such as the UK Medical Research Council framework (Craig et al 2013), and fuller reporting of interventions and outcomes would address many of the issues noted here. It seems clear that many researchers in this field have been unable or unwilling to use randomised designs. Randomised controlled trials can be challenging to implement and resource intensive. They are not the only potentially robust design for complex service interventions. However, randomised trials or other robust designs are feasible for these and similar interventions and the value of simple before and after designs as anything other than feasibility / pilot studies must be questioned. Certainly a clearer picture, more helpful for practitioners, could have emerged from fewer more rigorous studies.

While systematic methods were used to identify studies for this review, a lack of agreed terminology in the field and a focus on searching for published studies may have led to some relevant studies being inadvertently excluded. However, unless we missed a large number of high quality studies including multiple studies of a single intervention, which seems unlikely, our overall conclusions would remain unchanged. Our method of assessment of methodological quality was simple and focused on making relative rather than absolute judgements about the potential for causal inference from the designs used. A study we classified as high quality may still be flawed in a number of ways. Our chosen method, however, enabled the descriptive analysis required across a diverse range of studies and provides a broad indication of the potential strength of evidence.

# 5. Conclusions

While there have been many published studies that appear to offer potential solutions to deficits in compassionate care, this is a body of literature that seems to have little useful to say to nurses in practice. This is especially challenging in a context in which the need for more compassion in health care is professed from national government to frontline practitioners. Greater conceptual clarity, better designed and reported interventions and evaluations using stronger research designs are urgently required.

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