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Measurement of empathy in nursing research: systematic review

ABSTRACT

Aim
This paper is a report of a systematic review to identify, critique, and synthesize nursing studies of the measurement of empathy in nursing research.
Background
The profound impact of empathy on quality nursing care has been recognised. Reported empathy levels among nurses range from low to well-developed and there is clearly debate about what constitutes empathy and how it can be measured and improved.
Data sources
Searches were made of the CINAHL, MEDLINE, and PsycINFO databases, using the terms 'empathy', 'tool', 'scale', 'measure', 'nurse', and 'nursing', singly or in combination to identify literature published in the English language between 1987 and 2007.
Methods A systematic review was carried out. The included papers were critically reviewed, relevant data were extracted, and a narrative synthesis was conducted.
Results
Thirty papers representing 29 studies met the inclusion criteria. Three types of studies were identified: descriptive studies (n=12), studies of empathy and patient outcomes (n=6), and evaluational studies (n=11). Twenty scales were used, more than one tool being applied in some studies, suggesting the need for a systematic review of empathy measures in nursing research. A range of settings have been studied but some, such as genetic healthcare, have been neglected.
Conclusion
Despite numerous tools being used in nursing research to assess empathy, there appears to be no consistency, suggesting the need to evaluate the rigour of empathy tools appropriately, either to inform education or for application in clinical settings.

SUMMARY

What is already known about this topic

- Empathy is a complex, multi-dimensional phenomenon with diverse elements.
- Empathy is an essential component of any form of helping relationship, and is especially critical to quality nursing care.
- Reported empathy levels among nurses range from low to well-developed.

What this paper adds

- There are inconsistencies between studies measuring empathy in nursing research, indicating the need for a rigorous evaluation of the tools used.
- Twenty measures have been used to assess empathy levels of nurses and nursing students.
- Empathy could be measured to assess the quality of nursing care and the effectiveness of education programmes designed to enhance empathy.

KEYWORDS

Empathy; systematic review; nursing; patient care; measurement

INTRODUCTION

Empathy is a complex, multidimensional phenomenon (Morse *et al.* 1992, Alligood 2005). Rogers (1957, p.99) defined empathy as an ability "to sense the client's private world as if it were your own, but without ever losing the 'as if' quality". A concept analysis of empathy as described in the nursing literature between 1992 and 2000 revealed five conceptualizations of empathy as: a human trait; a professional state; a communication process; caring; a special relationship (Kunyk & Olson 2001). These conceptualizations reflect both the intrinsic and acquired aspects of empathy, as described by Alligood (1992) and Spiro (1992), and the key elements of empathy (moral, emotive, cognitive, and behavioural components) summarized by Morse *et al.* (1992). The ability to offer empathy may vary from one individual to another as some people are by nature more empathic than others; however, acquired empathy can be taught as a skill and developed with practice and experience (Alligood 1992, Spiro 1992).

Over the last few decades there has been growing interest in the relevance of empathy to patient care. Empathy is regarded as an essential component of any form of caring relationship, and is especially critical to quality nursing care (Reynolds *et al.* 1999). Its value in a therapeutic relationship has been emphasized, in which healthcare professionals understand the feelings of patients as if they themselves were the patients (Reynolds *et al.* 1999, Alligood 2005). However, studies have shown that healthcare professionals often ignore patients' direct and indirect emotional expressions and miss opportunities to express empathy (Suchman *et al.*1997, Levinson *et al.* 2000). There also appear to be inconsistencies in the literature, with some researchers reporting low levels of empathy in nurses (Daniels *et al.* 1988, Reid-Ponte, 1992) and moderately well-developed empathy being noted in others (Bailey 1996, Watt-Watson *et al.* 2000). This may reflect the inherent complexity of measuring what might be considered a subjective, multi-faceted and even intangible component of caring, and calls into question the rigour of tools used for its assessment.

There is clearly debate in the literature about what may contribute to empathy and how it can be assessed, improved and sustained. Nurses' empathic ability is important for good quality care, but without valid and reliable measurement tools it cannot be measured accurately, and it is difficult to assess the effectiveness of educational programmes aimed at develoing empathy. If such a tool exists it needs to be identified and evaluated, and this literature review represents a first step in that process.

THE REVIEW

Aim

The aim of the review was to identify, critique, and synthesize nursing studies where empathy has been measured.

Design

A systematic literature review was conducted, following the Centre of Reviews and Dissemination guidelines on undertaking systematic reviews (CRD 2001).

Search Methods

Searches were made of the CINAHL, MEDLINE, and PsycINFO databases using the terms 'empathy', 'tool', 'scale', 'measure', 'nurse', and 'nursing', singly or in

combination to identify literature from 1987 to 2007. The following inclusion and exclusion criteria were used:

Inclusion criteria

- Journal articles reporting primary research
- Studies applying a scale to measure empathy levels
- The participants included nurses or nursing students
- Published in English between 1987 and 2007.

Exclusion criteria

Some papers were considered not relevant to the review and therefore were excluded:

- Review articles
- Participants did not include nurses or nursing students
- Doctoral theses (because of the impracticalities of retrieving and reviewing them)
- Studies focusing on empathy, where no tools were applied to assess its level, such as qualitative studies.

Search outcome

This process initially identified 557 papers, whose titles and abstracts were read to identify those relevant to the area of enquiry. Although review articles were excluded, their reference lists were scrutinized and any appropriate literature that had not been found by electronic searches was followed up. Thirty papers were identified as being appropriate and these are summarised in Table 1, Table 2 and Table 3.

Quality appraisal

The relevance of retrieved papers was assessed by the first author and then checked by the second author. Ambivalence and disagreement were handled by checking the full contents of the papers and further discussion. Both authors agreed which papers should be included for review. Formal quality scores were not calculated due to the wide range of study designs of the literature considered, and because the focus of this review was on the scope of nursing research on measuring empathy. Therefore, all papers that met the inclusion criteria were included irrespective of their quality.

Data extraction

The data extracted are presented in Table 1, Table 2 and Table 3. These comprised: bibliographic details; study aims; settings; country of origin; participants; sample size; study design; measures used to assess empathy; methods of the assessment; key findings related to empathy.

Synthesis

The papers were grouped by study type for the purposes of synthesising their findings. Quantitative meta-analysis was not feasible due to the heterogeneity of these studies in terms of the samples, designs, quality, and measures applied. A narrative synthesis of the extracted data was undertaken and organised according to the study type: descriptive studies (n=12, Table 1), studies of empathy and patient outcomes (n=6, Table 2), and evaluational studies (n=11, Table 3).

RESULTS

In total 30 papers were included, representing 29 studies, as one study resulted in more than one paper. Most research was undertaken in university and hospital settings in North America, of which the majority were carried out in the United States (US).

Descriptive studies

Twelve studies focused on empathy levels, variation in empathy between health professionals, or the relationship between empathy and a variety of variables of participants (Table 1).

Empathy levels of nurses or nursing students

Nine studies were conducted to explore the empathy levels of nurses or nursing students. The levels ranged from low to moderately well-developed. There were seven reports of relatively high levels of self-reported empathy (Astrom *et al.* 1990, 1991, Warner 1992, Kuremyr *et al.* 1994, Bailey 1996, Palsson *et al.* 1996, Watt-Watson *et al.* 2000). In six of these the Empathy Construct Rating Scale of La Monica (1981) was used. These comprised a Swedish study of staff (n=20) caring for older people in community settings (Kuremyr *et al.* 1994); two Swedish studies of nurses and nursing aides caring for patients with dementia (Astrom *et al.* 1990, 1991); an Australian study of nurses (n=183) working in critical care units (Bailey 1996); a US study of nurses (n=20) in medical-surgical units (Warner 1992); and a Swedish study of nurses (n=30) attending an empathy training course (Palsson *et al.* 1996). Similar findings were found when empathy was measured by using third-party-rating on the Staff-Patient Interaction Response Scale (Watt-Watson *et al.* 2000).

However, two studies challenged these findings (Daniels *et al.* 1988, Reid-Ponte 1992). Reid-Ponte (1992) used the La Monica Empathy Profile (La Monica 1983), a revised Empathy Construct Rating Scale (La Monica 1981), and found low empathy levels among nurses (n=65) working in surgical care units. In the other study the Carkhuff Index of Communication (Carkhuff 1969) was used to assess empathy, and low levels were reported among most respondents in both intervention and control groups prior to attending an empathy training course (Daniels *et al.* 1988).

Several factors may contribute to these inconsistencies. First, most researchers used a convenience sample and no reports gave any information about statistical power. The sample sizes ranged from as small as 20 (Warner 1992, Kuremyr *et al.* 1994) to 358 (Astrom *et al.* 1990). Second, some important confounding factors were not considered. Some evidence suggests that there is a correlation between empathy and demographic variables such as age, gender, clinical experience, and level of education (Nardi 1990, Murphy *et al.* 1992, Reid-Ponte 1992, Watt-Watson *et al.* 2000, Ancel 2006). However, some reports of studies assessing empathy levels provided no or limited demographic information about respondents (Kuremyr *et al.* 1994, Palsson *et al.* 1996, Reid-Ponte 1992). Furthermore, the variety of measures applied in these studies can make direct comparison difficult, as different tools may assess dissimilar dimensions of empathy.

Variation in empathy between healthcare professionals

In three studies researchers compared empathy levels between nurses and other healthcare professionals. Kliszcz *et al.* (2006) assessed empathy among physicians, nurses, medical students, midwifery students, and nursing students, using a Polish version of the Jefferson Scale of Physician Empathy (Hojat *et al.* 2001). The study

showed that physicians obtained the highest mean empathy score, while the lowest mean was found in nurses, although no statistically significant differences were revealed among the five groups of respondents (F=0.72, df=4, p=0.58). In a US study of female nurses (n=56) and physicians (n=42) no statistically significant differences were reported in total empathy scores ($t_{(96)}$=0.53, p>0.05), but statistically significant differences were found between the two groups on five out of 20 items on the scale (p<0.05) (Fields *et al.* 2004). Nurses were more likely than physicians to be able to view things from patients' perspectives, to stand in patients' shoes, and to believe in the therapeutic value of empathy. Hojat *et al.* (2003) studied empathy levels among three groups of female healthcare professionals, reporting that nurses (n=32) and paediatricians (n=37) scored statistically significantly higher than the hospital-based physicians (n=33) ($F_{(2, 99)}$=2.98, p=0.05).

Although the same tool (the Jefferson Scale of Physician Empathy) was used in all three studies, sample size calculations were not conducted and two studies had small sample sizes (Hojat *et al.* 2003, Fields *et al.* 2004). The researchers also did not consider demographic factors such as age and education levels, which could be a source of bias. In addition this scale, developed for doctors and medical students, may not be reliable in assessing empathy among nurses, although the authors argued that the scale can be used among various healthcare professional groups including nurses (Hojat *et al.* 2003, Fields *et al.* 2004).

Empathy and other variables
In 11 studies empathy was explored in relation to other variables, including age, experience, education, gender, attitudes, work place settings, cohorts of nursing students, and leadership style. These studies showed some consistencies and some contradictions.

The relationship between empathy and age was examined in five studies. In three it was reported that increased age was associated with decreased empathy levels (Reid-Ponte 1992, r=-0.24 to -0.27, p<0.01 to 0.03, Watt-Wastson *et al.* 2000, r=-0.29, p<0.005, Ancel 2006, p<0.05). Nardi (1990) did not find any differences between the two variables; however, Becker and Sands (1988) indicated that the impact of age depended on gender and certain aspects of empathy.

Five studies focused on the association between empathy and clinical experience. In three a correlation was not found (Astrom *et al.* 1991, Nardi 1990, Watt-Watson *et al.* 2000). However, Reid-Ponte (1992) reported that increased experience was related to lower empathy levels. Becker and Sands (1988) found that the effect of experience on empathy depended on respondents' gender and certain aspects of empathy.

The correlation between empathy and education was explored in four studies. In two a null correlation was found (Bailey 1996, Watt-Watson *et al.* 2000). However, Ancel (2006) reported a positive correlation and Reid-Ponte (1992) found a negative correlation. For the four studies exploring gender differences in empathy, in two it was found that female respondents had statistically significantly higher empathy scores than males (Becker & Sands 1988, Bailey 1996), and the other two had a null correlation (Astrom *et al.* 1991, Kliszcz *et al.* 2006).

In three studies researchers examined the relationship between empathy and attitudes to patients (Louie 1990, Astrom *et al.* 1990, 1991). Louie (1990) reported a null correlation, although two of the five empathy subscale scores were related to students' attitudes towards patients from minority ethnic groups ($p<0.05$). In another two studies it was found that higher empathy was associated with more positive attitudes towards patients with dementia and less burnout ($r=-0.19$ to -0.32) (Astrom *et al.* 1990, 1991). However, in the two studies contradictory correlation coefficient values were reported between empathy and attitudes. The value was -0.29 in Astrom *et al.* (1990), but 0.30 in Astrom *et al.* (1991). According to recent email correspondence with the first author, the correlation should be positive and there might be a publishing error in their 1990 paper (Personal correspondence 2008).

The relationship between empathy and workplace setting was examined in two studies. In one a relationship was not found between the two variables by comparing nurses and nursing assistants caring for patients with dementia in community settings, psychogeriatric clinics, and long-term care clinics (Astrom *et al.* 1991). The other author reported similar findings, comparing empathy levels of nurses working in surgery, internal medicine, and other areas (Ancel 2006).

Lauder *et al.* (2002) examined empathy levels of three cohorts of UK nursing students ($n=185$), indicating no statistically significant differences among the groups ($F=0.955$, $df=2$, $p=0.387$). Gunther *et al.* (2007) reported a weak positive correlation between transformational leadership style and empathy levels in students ($p\leq0.05$).

It is uncertain whether there was a causal correlation between empathy and these variables. The variety of tools used and differences in characteristics of the participants across the studies may have also caused these inconsistencies.

Studies of empathy and patient outcomes

Empathy is considered a useful skill for nurses (Kristjansdottir 1992, Alligood 2005). Its impact on patient care has been examined in six studies (Table 2) in relation to patient distress, anxiety, satisfaction, perceived needs, and how patients experience pain (Murphy *et al.* 1992, Reid-Ponte 1992, Warner 1992, Olson 1995, Wheeler *et al.* 1996, Olson & Hanchett 1997, Watt-Watson *et al.* 2000).

In six studies, four concerned the impact of empathy on improved patient outcome (Murphy *et al.* 1992, Reid-Ponte 1992, Olson 1995, Olson & Hanchett 1997). Two studies focused on the correlation between empathy and patient distress (Reid-Ponte 1992, Olson 1995, Olson & Hanchett 1997). In a US study of 65 nurse-patient pairs in surgical care units Reid-Ponte (1992) found that the higher the levels of empathy showed by nurses, the less the distress presented by their cancer patients ($p=0.05$) Similarly, in a Canadian study of 70 nurse-patient pairs in hospital negative relationships were found between both nurse-expressed and patient-perceived empathy levels and patient distress ($r=-0.71$, $p<0.001$) (Olson 1995, Olson & Hanchett 1997). Wheeler *et al.* (1996) found that higher empathy levels of nursing students ($n=38$) were associated with decreases in patients' anxiety ($n=38$). Murphy *et al.* (1992) examined the relationship between empathy of nurses and perceived needs of patients' family members. The study was conducted among intensive care unit (ICU) nurses ($n=60$) and family members of ICU patients ($n=92$). It was found that higher empathy levels in

nurses were positively related to accurate assessments of three out of the 30 perceived needs of patients' family members.

However, in two studies a correlation was not found between empathy and improved patient outcomes (Warner 1992, Watt-Watson *et al.* 2000). Warner (1992) found a null correlation between self-reported empathy levels among nurses (n=20) and perceived satisfaction with nursing care of their patients (n=28). In the other study, of 80 nurse-patient pairs in cardiovascular units, nurses' empathy did not decrease patients' pain intensity or analgesic admission (Watt-Watson *et al.* 2000).

Some factors discussed earlier, such as small sample size, failure to control demographic variables, and different empathy tools used, may explain the inconsistent findings reported for these studies. This suggests the need for a further exploration on the concept of empathy and its effects on patient outcomes.

Empathy evaluation studies

It has been argued that empathy can be taught and learnt (La Monica 1981, Spiro 1992, Alligood 2005). Considering its importance in patient care, a number of programmes have been developed to enhance empathic performance in nurses and students. Eleven of the 29 studies cited were designed to evaluate such a programme (Table 3). Of these, six considered university-based education (Daniels *et al.* 1988, Reynolds & Presly 1988, Nardi 1990, Wilt *et al.* 1995, Cutcliffe & Cassedy 1999, Beddoe & Murphy 2004), four focused on hospital-based training (La Monica *et al.* 1987, Yates *et al.* 1998, Oz 2001, Ancel 2006), and one (Palsson *et al.* 1996) studied community-based training.

The length of programmes ranged from as little as three hours (Nardi 1990) to 12 study days (Cutcliffe and Cassedy 1999). Researchers in two studies reported education for nursing students over a number of academic terms (Reynolds & Presly 1988, Evans *et al.* 1998). The frequency of assessment varied. Of 11 studies, six measured empathy levels twice, once before and once after the courses (La Monica 1987, Palsson *et al.* 1996, Cutcliffe & Cassedy 1999, Oz 2001, Beddoe & Murphy 2004, Ancel 2006), two assessed empathy four times (Wilt *et al.* 1995, Yates *et al.* 1998), and the remainder measured empathy either five times (Reynolds and Presly 1988), three times (Daniels *et al.* 1988), or once only (Nardi 1990).

Of 11 evaluational studies, five did not have a control group (Reynolds & Presly 1988, Yates *et al.* 1998, Cutcliffe & Cassedy 1999, Beddoe & Murphy 2004, Ancel 2006), but six did (La Monica 1987, Daniels *et al.* 1988, Nardi 1990, Wilt *et al.* 1995, Palsson *et al.* 1996, Oz 2001), in four of which a randomised experimental design was applied (Daniels *et al.* 1988, Nardi 1990, Wilt *et al.* 1995, Oz 2001).

In eight evaluation studies it was reported that courses did improve students' or nurses' empathy levels to some extent (Daniels *et al.* 1988, Nardi 1990, Wilt *et al.* 1995, Yates *et al.* 1998, Cuteliffe & Cassedy 1999, Oz 2001, Beddoe & Murphy 2004, Ancel 2006). It is unclear whether this improvement was sustained. In an Australian study of palliative care nurses (n=181) it was reported that increased empathy was sustained three months after the completion of the programme (Yates *et al.* 1998). However, Daniels *et al.* (1988) showed no statistically significant differences between the empathy levels of students in their experimental group in the 9-month follow-up test,

compared to those in the control group. Similarly, in a study of nursing students (n=106) empathy was measured on five occasions, with the final assessment one year after graduation; however, improvements did not appear to be maintained [$F(1, 29)=3.91$, $p<0.06$] (Evans *et al.* 1998). These findings suggest the need for longitudinal studies that follow participants for a reasonable period of time to explore how empathy can be enhanced and sustained.

However, three studies shed doubt on the effect of empathy training programmes (La Monica 1987, Reynolds and Presly 1988, Palsson *et al.* 1996). La Monica (1987) did not find any increase in either patient-rated or self-rated empathy scores, although patients cared for by nurses in the experimental groups showed statistically significantly less anxiety and hostility after their nurses had completed the programme. Similarly, Palsson *et al.* (1996) found no statistically significant differences in empathy, burnout, or sense of coherence in the intervention or control groups, or between the groups before or after the intervention (M=419 to 435, SD=30 to 35). Reynolds and Presly (1988) looked at empathy from two perspectives: innate and acquired. They reported that the trait of empathy in students was a very stable quality which was resistant to short-term education (M=20.7 to 22.6, SD=3.0 to 5.0), but trained empathy among students in some study settings was increased statistically significantly on some measures using self-rating or third-party-rating ($p<0.001$ to 0.05).

It is difficult to make direct comparison across the studies that evaluated the effectiveness of empathy training due to differing samples, research designs, diverse measurement tools, and variation in the components and length of teaching. Most evaluation studies reported some gains due to training. It is possible that studies that did not yield positive relationships are less likely to be published. The validity of the gains in some studies is also questionable due to the overall quality of these studies, such as the small sample size; failure to use a control group; lack of random allocation of participants to intervention or control group; and training providers, receivers and assessors not being blinded. Empathy training itself is important, but the demonstration of its effectiveness depends largely on research design and a reliable empathy tool. Future evaluation studies are needed to improve the quality of design and choice of effective measures, in addition to the empathy intervention itself.

DISCUSSION

Review limitations

This review provides a sound critical overview of the measurement of empathy in nursing research, and lays important groundwork for additional research in the field, but some limitations need to be acknowledged. The review only includes papers published in English which may have resulted in some work published in other languages in this area being omitted. In addition, no effort was made to search for grey literature. A main limitation to this review is its lack of a critique of the measures themselves. However, an in-depth evaluation of these tools in terms of their domains, validity, reliability and responsiveness is currently being carried out by the authors.

Wealth of measurement tools

This review included 20 different approaches used to assess empathy (Figure 1). Most measures were derived from Rogers' (1957) work on patient-centred therapy for psychiatric patients and have their origins in disciplines other than nursing. There has been little uniformity in the choice of tools, but perhaps this is not surprising for a

number of reasons. The complexity of empathy itself and the associated challenge to develop a single tool that can sufficiently capture its multi-faceted nature in a simple format is a major factor.

The most frequently-used measure was the Empathy Construct Rating Scale (La Monica 1981), which was cited in 10 studies. This tool assesses the cognitive and behavioural dimensions of empathy. Developed in the USA, it can be used for self-rating, patient-rating or peer-rating. High empathy levels in nurses or nursing students were found in six of the reviewed studies using this scale (Astrom *et al.* 1990, 1991, Warner 1992, Kuremyr *et al.* 1994, Bailey 1996, Palsson *et al.* 1996). However, in one study using a revised version of this scale low levels were reported (Reid-Ponte 1992). The contradiction may be due to variation in sample size and characteristics of the respondents in these studies, and because the revised scale is more rigorous in assessing certain aspects that are essential to empathy.

The Reynolds Empathy Scale is the only tool developed in the UK (Reynolds 2000). Reynolds drew on his own experience of studying nurse-client relationships, examined professionals' views of empathy, and sought clients' perceptions of effective and ineffective interpersonal behaviours in nurses. Audio-taped recordings of clinical interviews are assessed by a trained, independent rater to evaluate empathy levels against 12 items. This scale has not been widely used and was applied in only one study cited (Lauder *et al.* 2002).

The use of a mixture of assessment tools was common. In eight of the 29 studies more than one measure was applied (Daniels *et al.* 1988, Reynolds & Presly 1988, Olson 1995, Palsson *et al.* 1996, Wheeler *et al.* 1996, Evans *et al.* 1998, Oz 2001, Kliszcz *et al.* 2006, Gunther *et al.* 2007). Of these, different scales were used in three studies to evaluate various dimensions of empathy (Reynolds & Presly 1988, Evans *et al.* 1998, Gunther *et al.* 2007).

The multi-dimensional nature of empathy and the existence of so many tools to measure it reflect the difficulty of devising a single tool to capture all its dimensions and indicate the importance of understanding which elements a tool assesses. When designing an educational programme, a clear understanding of the specific aspects to be addressed is necessary, so that a relevant, valid and reliable assessment tool can be used. The major challenges to researchers in this area are in understanding what contributes to empathy and developing and validating a suitable instrument for its measurement. Until the constructs that comprise empathy have been identified, research findings will remain of doubtful value.

Methods of empathy assessment

Methods used to assess empathy across the studies varied, including self-reporting, patient-rating, and third-party-rating. Respondents in most studies (21/29) self-rated their empathy levels, whereas three methods of measurement were used in two studies (Reynolds & Presly 1988, Wheeler *et al.* 1996). Three studies involved two types of assessment methods, including third-party-rating and patient-rating (Olson 1995, Olson & Hanchett 1997), self-rating and third-party-rating (Oz 2001), or self-rating and patient-rating (La Monica *et al.* 1987). In two studies only third-party-rating was used (Yates *et al.* 1998, Watt-Watson *et al.* 2000).

Where both participants and patients were involved in assessment, the consistency between self-reporting and patient-reporting is questionable. In a study of 70 nurse-patient pairs, a moderate positive correlation was revealed ($r=0.37$ to 0.47, $p<0.05$) (Olson 1995, Olson & Hanchett 1997). However, some researchers indicated that self-reported empathy levels did not agree with those scored by patients (La Monica 1987, $r=0.12$ to 0.20, $p>0.05$, Wheeler *et al.* 1996).

Such inconsistent findings could have been caused by various factors previously discussed, such as variations in study quality, demographic variables, empathy measures used, and the way that tools were administered. This could, however, prove problematic if empathy is measured solely by nurses or students themselves, and not by patients. Reynolds (2000) has criticized the lack of empathy tools which reflect service users' perspectives. Although patient views were considered in developing his tool, patients were not involved in assessment. It is questionable how a tool can accurately reflect patient views if patients themselves are not involved in assessment. Research on empathy should encompass the perspectives of patients, and perhaps their families, in addition to those of healthcare professionals. Without taking into account their views and involving them in measurement, researchers and educators are unlikely to be fully informed about the essential empathic skills sets needed by nurses.

Recommendations for future research

The results of this review indicate several avenues for future research. First, there is the need to explore further the concept of empathy and identify attributes that can contribute to its development. It is important to evaluate and develop a tool or tools that can capture the multifaceted dimensions of empathy. The variety of empathy scales used in the studies reviewed may suggest a need for a systematic review of all empathy measures developed for and used in nursing. Scales need to be appraised in terms of their original development context, as well as their validity and reliability, before a tool is definitively chosen for a specific group and setting. An evaluation of the validity of empathy scales when applied outside their country of origin is particularly needed.

Second, the overall quality of the studies reviewed suggests that future researchers should address the quality of research design. The issue of sample representativeness is critical, and the sample size should be calculated appropriately to ensure sufficient statistical power. When conducting evaluation studies, randomised samples, use of a control group, and maintaining blindness are all necessary for minimising bias and generating good evidence. Empathy training programmes can be developed by reviewing the evidence on their effectiveness in term of content, duration of training, and the length of follow up. More longitudinal studies are also needed to understand the development and sustainability of empathy over time.

Lastly, research in some neglected settings would be needed. Previous studies have focused on a variety of nursing settings, including care of older people (Astrom *et al.* 1990, 1991, Kuremyr *et al.* 1994, Wheeler *et al.* 1996), palliative care (Yates *et al.* 1998), medical and surgical care (Warner 1992, Olson 1995, Watt-Watson *et al.* 2000, Oz 2001), cancer care (La Monica et al 1987, Reid-Ponte 1992, Palsson *et al.* 1996), critical care (Bailey 1996), and intensive care (Murphy *et al.* 1992). However, some areas, such as genetic nursing, have not yet been studied. Rogers' client-centred therapy is a central tenet of practice in relation to genetics (Weil 2000). Empathy could give clients with genetics concerns a sense of being understood and help them to feel more

hopeful and more capable of coping with their situations (Kessler 1999). This need for empathy is reflected in education initiatives being developed to support practice that incorporates genetics (Kirk *et al.* 2003, 2007, Jenkins & Calzone 2007). An appreciation of how nurses can systematically address genetic healthcare needs in an empathic way, therefore, is of particular importance.

CONCLUSION

This review raises many questions. Although numerous tools have been used in nursing research, there appears to be no consistency. The fact that so many tools have been developed and applied to the relatively narrow focus of empathy in nursing indicates both its complexity of measurement and the interest and importance attached to its assessment, either to inform education or training, or to apply within clinical settings. Evaluation of the validity and reliability of these tools is of particular importance for both nursing education and practice. Empathy places a focus on caring that goes beyond the acquisition of scientific knowledge and skills. A rigorous tool to demonstrate empathic skills could help to highlight the invisible work of nursing**.**

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Table 1: Summary of the descriptive studies (n=12)

Reference	Aim	Setting & Country	Design & Sample	Empathy measures & rating methods	Key results relating to empathy
Astrom *et al.* (1990)	To examine the relationships between burnout, empathy and attitudes towards patients with dementia	Community settings, psychogeriatric clinic and somatic long-term care clinic Sweden	Correlation 358 Registered Nurses, licensed practical nurses and nurse aides	Empathy Construct Rating Scale (La Monica 1981) Self-rating	Respondents from different care settings showed similar empathy scores. Empathy was associated with burnout (r= -0.19) and attitudes (r= -0.29). Nurses showed moderately well-developed empathy. Registered Nurses had significantly higher mean scores than nurses' aides (p=0.05).
Astrom *et al.* (1991)	To examine the relationships between burnout, empathy and attitudes towards patients with dementia	Community settings, psychogeriatric clinic and somatic long-term care clinic Sweden	Correlational study 60 Registered Nurses, licensed practical nurses and nurse aides	Empathy Construct Rating Scale (La Monica 1981) Self-rating	Respondents had moderately high empathy scores. Empathy was related to burnout (r= -0.32) and attitudes (r=0.30). There were no differences in empathy with respect to sex, staff category or place of work.
Bailey (1996)	To examine the relationships between empathy and variables: gender, years of practice in critical care, level of education and occupational position	Critical care, hospital Australia	Correlational, descriptive study 183 nurses	Empathy Construct Rating Scale (La Monica 1981) Self-rating	Moderately well-developed empathy among nurses was found. Females had slightly higher scores than males (F=1.30, p=0.25). There were no significant differences in empathy with respect to years of practice (F=0.80, p=0.44), educational levels (F=1.05, p=0.39), and current position (F=1.00,

					p=0.42).
Becker & Sands (1988)	To examine the relationship between empathy and clinical experience among nursing students	University USA	Descriptive study 35 nursing students Measured 4×	Interpersonal Reactivity Index (Davis 1980) Self-rating	High consistency for all Interpersonal Reactivity Index scales was reported (r=0.68 to 0.76). Male students scored significantly lower than female students on one subscale (p<0.05). The relationship between age, experience and Interpersonal Reactivity Index scores varied by gender.
Evans *et al.* (1998)	To examine the differences between two types of empathy (trained and basic) and the endurance of empathy levels	University USA	Repeated measures 5× 106 nursing students	Basic: Hogan Empathy Scale (Hogan 1969) Trained: Layton Empathy Test (Layton 1979) Self-rating	The phenomenon of two types of empathy was supported. Trained empathy did not appear to be sustained [F(1, 29)=3.91, p<0.06], and there were no significant differences in basic empathy over time [F(1, 53)=2.44, p<0.12].
Fields *et al.* (2004)	To compare nurses with physicians on their response to the Jefferson Scale of Physician Empathy	Hospital USA	Correlational study 56 nurses 62 physicians	Jefferson Scale of Physician Empathy (Hojat *et al.* 2001) Self-rating	Significant differences were not found between the two groups on total scores (t=0.53, P>0.05), but on 5 (of 20) items of the scale [effect size (-0.46 to +0.47), p<0.05].
Gunther *et al.* (2007)	To explore the relationships between leadership styles and empathy (cognitive and affective) levels	University USA	Exploratory, descriptive study 178 nursing students (92 junior students, 86 senior students)	Hogan Empathy Scale (Hogan 1969) Emotional Empathy Tendency Scale (Mehrabian & Epstein 1972)	The mean empathy scores between junior and senior students appeared to be similar (p>0.05). There were weak correlations between leadership styles and empathy levels on Hogan Empathy Scale for junior

				Self-rating	students and on both empathy scales for senior students ($p \leq 0.05$).
Hojat *et al.* (2003)	To compare the empathy scores of nurses, paediatricians and physicians	Hospital USA	Correlational study 32 nurses 37 paediatricians 33 physicians	Jefferson Scale of Physician Empathy (Hojat *et al.* 2001) Self-rating	Nurses and paediatricians obtained higher mean scores than physicians [F(2, 99)=2.98, p=0.05].
Kliszcz *et al.* (2006)	To validate Polish version of the Jefferson Scale of Empathy compared with Interpersonal Reactivity Index and Emotional Intelligence Scale	Hospital and university Poland	Validation study 405 participants (118 physicians 76 nurses 149 medical students 33 midwifery students 29 nursing students)	Jefferson Scale of Empathy (Hojat *et al.* 2001) Interpersonal Reactivity Index (Davis 1980) Emotional Intelligence Scale (Schutte *et al.* 1998) Self-rating	Significant differences on empathy scores were not found between genders (F=1.19, df=1, p=0.28), or among five groups of respondents on JSE (F=0.72, df=4, p=0.58). Physicians obtained the highest mean of empathy score (M=113.06), while the lowest was observed in nurses (M=110.12).
Kuremyr *et al.* (1994)	To describe the emotional experiences of staff when caring for elderly patients with dementia, experiences of burnout, and empathy	Community settings Sweden	Comparative study 10 staff in the collective living unit 10 staff in the nursing home including 1 Registered Nurse	Empathy Construct Rating Scale (La Monica 1981) Self-rating	All staff had the requisite attributes of empathy. No significant differences in empathy scores were found between staff working in two settings (Statistical analysis was not reported).
Lauder *et al.* (2002)	To examine the perceptions of students regarding their therapeutic commitment, role competence, role support and empathy towards working with	University UK	Comparative study Three cohorts of 185 students on mental health, adult and learning disability branches	Reynolds Empathy Scale (Reynolds 2000) Self-rating	There were no significant differences in perceptions of empathy among three cohorts of students (F=0.955, df=2, p=0.387).

	people who have mental health problems				
Louie (1990)	To explore the relationship between students' empathy levels and their attitudes towards minority ethnic patients	University USA	Descriptive study 122 nursing students	La Monica Empathy Profile (La Monica 1983) Self-rating	A relationship between empathy and attitudes to patients was not found, although two of the five empathy subscale scores were related to students' attitudes ($p<0.05$).

Table 2: Summary of the studies of empathy and patient outcomes (n=6)

Reference	Aim	Setting & Country	Design & Sample	Empathy measures & rating methods	Key results relating to empathy
Murphy *et al.* (1992)	To examine the relationship between nurses' empathy levels and their ability to assess family members' needs of Intensive Care Unit patients	Intensive care unit, hospital USA	Correlational study 60 nurses 92 family members	Empathy Construct Rating Scale (La Monica 1981) Self-rating	Nurses' empathy levels were positively related to assess 6 of the 30 needs accurately ($p<0.05$).
Olson (1995)	To examine relationships between nurse-expressed empathy and two patient outcomes: patient perceived empathy and patient distress	Medical and surgical units in acute care hospitals Canada	Correlational study 70 nurses 70 patients	Staff-Patient Interaction Response Scale (Gallop *et al.* 1989) Third-party-rating Behavioural Test of Interpersonal Skills (Gerrard & Buzzell 1980) Third-party-rating Barrett-Lennard Relationship Inventory (Barrett-Lennard 1962) Patient-rating	Negative relationships were found between empathy (nurse-expressed and patient-perceived) and patient distress. Nurse-expressed empathy and patient-perceived empathy were related.
Olson & Hanchett (1997)	To examine the relationships between nurse-expressed empathy and two patient	Hospital Canada	Correlational, descriptive study 70 nurses 70 patients	Staff-Patient Interaction Response Scale (Gallop *et al.* 1989)	Negative relationships were found between empathy (nurse-expressed and patient-perceived) and patient distress ($r=-0.71$, $p<0.001$). Nurse-

	outcomes: patient-perceived empathy and patient distress			Third-party-rating Behavioural Test of Interpersonal Skills (Gerrard & Buzzell 1980) Third-party-rating Barrett-Lennard Relationship Inventory (Barrett-Lennard 1962) Patient-rating	expressed empathy was moderately related to patient-perceived empathy ($r=0.35$ to 0.47, $p<0.05$).
Reid-Ponte (1992)	To explore the relationship between the empathy skills of nurses and patient distress	Surgical care units, hospital USA	Correlational, descriptive design 65 nurses 65 cancer patients	La Monica Empathy Profile (La Monica 1983) Self-rating	Nurses had low empathy scores. Such scores were negatively related to patient distress ($p=0.05$). Nurses' age, years of experience and education levels were negatively associated with some empathy subscale scores ($r=-0.29$ to -0.24, $p=0.01$ to 0.03).
Warner (1992)	To assess the relationship between nurses' self-reported empathy levels and patients' satisfaction with nursing care	Medical-surgical units, hospital USA	Correlational study 20 nurses 28 patients	Empathy Construct Rating Scale (La Monica 1981) Self-rating	Nurses had moderately well-developed empathy. Nurses' empathy levels were not related to patients' satisfaction, but no statistical analysis was reported.
Watt-Watson *et al.* (2000)	To examine the relationship between nurses' empathy levels and patients' pain intensity and analgesic	Cardiovascular units, hospital Canada	Correlational, descriptive study 80 patients 80 nurses	Staff-Patient Interaction Response Scale (Gallop *et al.* 1989) Third-party-rating	Nurses had moderate empathy levels, which did not significantly influence pain intensity of their patients or analgesia administered. Empathy only explained 3% the

	administration after surgery				variance in pain intensity (F=3.16, p<0.001), but it was related to nurses' knowledge and beliefs about pain assessment and managements (r=0.37, p<0.0001).
Wheeler *et al.* (1996)	To compare empathy levels of students rated by themselves, patients and instructors; to examine the relationship between empathy and patient anxiety	Community settings USA	Correlational study 38 senior nursing students 38 nursing home residents	Students: Layton's Empathy Test (Layton 1979) Instructor: Visual Analogue Scale (Wheeler *et al.* 1996) Clients: Perception of Empathy Inventory (Wheeler 1990)	Self-reported empathy levels were significantly related to those rated by instructors (r=0.26, p=0.05), but the levels rated by clients did not correlate with either. High empathy scores, measured by instructors (r=-0.49, p=0.01) or patients (r=-0.47, p=0.05), were associated with decreases in patient anxiety.

Table 3: Summary of the evaluational studies (n=11)

Reference	Aim	Setting & Country	Design & Sample	Empathy measures & rating methods	Key results relating to empathy
Ancel (2006)	To evaluate whether a 5-day, 20-hour communication training programme enhanced nurses' empathic skills	Hospital Turkey	Pre/post test design No control group Measured 2 × 263 nurses	Empathic Communication Skill B (Dokmen 1988) Self-rating	The training enhanced nurses' empathy levels ($p<0.05$). A significant difference was found for the increase in empathy scores between nurses in different age groups ($F=3.568$, $p=0.03$) and education groups ($F=38.193$, $p=0.001$).
Beddoe & Murphy (2004)	To explore the effects of an 8-week mindfulness-based stress reduction course on stress and empathy	University USA	Pre/post test design No control group Measured 2 × 18 nursing students	Interpersonal Reactivity Index (Davis 1980) Self-rating	Mean scores on two empathy sub-scales (Fantasy Scale and Personal Distress Scale) changed, but the levels were not statistically significant.
Cutcliffe & Cassedy (1999)	To measure the development of empathy among nurses on a training course	University UK	Pre/post test design No control group Measured 2× 38 nurses	Empathy Rating Scale (Ivey *et al.* 1980) Self-rating	Empathy levels of nurses increased after training ($p=0.001$).
Daniels *et al.* (1988)	To assess the effect of a training programme on skills of therapeutic communication	University Canada	Randomised experimental design 1 control group Measured 3× 53 nursing students	Carkhuff Indices (Carkhuff 1969) Empathy Construct Rating Scale (La Monica 1981) Self-rating	The pre-tests found low empathy levels of most students. Empathy of students in the experimental group increased after training [$F(1, 46)=3.50$, $p<0.001$], but the 9-month follow-up tests showed no significant differences between the two groups [$F(1, 17)=0.47$, $p<0.05$].

La Monica *et al.* (1987)	To investigate the effects of empathy training on patient outcomes: anxiety, depression, hostility and satisfaction	Hospital USA	Experimental design 1 control groups Measured 2× 56 nurses in the training group 53 nurses in the control group 656 cancer patients	Empathy Construct Rating Scale (La Monica 1981) Self-rating Patient-rating	Self-reported and patient-reported empathy scores were not related (r=0.12 to 0.20, P>0.05). The training did not increase empathy scores. No statistical values regarding this finding were reported.
Nardi (1990)	To evaluate a 3-hour empathy training course	University USA	Randomised experimental design 1 control group Measured 1 × 35 nursing students	Empathy Scale (Gazda 1977) Self-rating	The course significantly improved students' empathy scores (t=2.43, p=0.05).
Oz (2001)	To access the effectiveness of a training programme on nurses' empathic communication skills and empathic tendency	Medical and surgical units, hospital Turkey	Randomised, quasi-experimental design 1 control group Measured 2 × 43 nurses in the intervention group 70 nurses in the control group	Scale of Empathic Skills (Dokmen 1989, 1990) Third-party-rating Empathic Tendency Scale (Dokmen 1989, 1990) Self-rating	Empathic communication skills were developed in the intervention group (p<0.05), but the difference between empathic tendency scores of nurses in two groups was not statistically significant (p>0.5).
Palsson *et al.* (1996)	To explore the relationships between burnout, empathy, and sense of coherence; their correlations with personality traits; the effectiveness of	Community settings Sweden	Quasi-experimental design 33 district oncology nurses 21 in the intervention group 12 in the control	Empathy Construct Rating Scale (La Monica 1981) Self-rating	The empathy scores at baseline were high. There were no significant differences in empathy levels over time within or between the groups (M=419 to 435, SD=30 to 35, p value was not reported). The empathy scores correlated with

	systematic clinical supervision		group Measured 2×		burnout (r=-0.69, p<0.001) and sense of coherence (r=0.76, p<0.001).
Reynolds & Presly (1988)	To describe students' empathy levels before and after their theoretical and clinical experience; the relationship between empathy and their personality traits; the nature of empathy education	3 colleges of nursing UK	Non-experimental design No control group Measured 5× 79 students in 3 colleges	Hogan Empathy Scale (Hogan 1969) Self-rating Empathy Construct Rating Scale (La Monica 1981) Self-rating Charge Nurse rating Patient-rating	The increase in state empathy was statistically significant for self-reports (p<0.05), Charge Nurse ratings (p<0.01) and patient ratings (p<0.001). Trait empathy was an extremely stable quality (M=20.7 to 22.6, SD=3.0 to 5.0).
Wilt *et al.* (1995)	To evaluate the effectiveness of two motion pictures with mental health themes as tools in facilitating the development of empathy in nursing students	University USA	Randomised experimental design 1 control group Measured 4× 106 students in a mental health nursing course	Modified Layton Empathy Test (Layton 1979) Self-rating	After the intervention, the mean of only one intervention group (Film/Guide) was significantly higher than that of the control group (p<0.05), but it dropped back on the post-test [F(3, 74)=0.48, p<0.70].
Yates *et al.* (1998)	To assess empathy levels of nurses on a professional development programme, using a modified version of the Staff-Patient Interaction Response Scale	Palliative care, hospital Australia	Pre/post test design Measured 4 × 3 groups No control group 181 palliative care nurses	Staff-Patient Interaction Response Scale (Gallop *et al.* 1989) Third-party-rating	Nurses' empathy levels improved over time [F(2, 168)=7.84, p<0.001] and this improvement was sustained 3 months after completion of the programme (t=-3.54, df=85, p<0.001).

Figure 1: List of empathy tools used in the studies reviewed with original references*

Barrett-Lennard Relationship Inventory (Barrett-Lennard 1962)
Behavioural Test of Interpersonal Skills (Gerrard & Buzzell 1980)
Carkhuff Indices of Discrimination & Communication (Carkhuff 1969)
Emotional Empathy Tendency Scale (Mehrabian & Epstein 1972)
Emotional Intelligence Scale (Schutte *et al.* 1998)
Empathic Communication Skill B (Dokmen 1988)
Empathic Tendency Scale (Dokmen 1989, 1990)
Empathy Construct Rating Scale (La Monica 1981)
Empathy Rating Scale (Ivey *et al.* 1980)
Empathy Scale (Gazda 1977)
Hogan Empathy Scale (Hogan 1969)
Interpersonal Reactivity Index (Davis 1980)
Jefferson Scale of Physician Empathy (Hojat *et al.* 2001)
La Monica Empathy Profile (La Monica 1983)
Layton Empathy Test (Layton 1979)
Perception of Empathy Inventory (Wheeler 1990)
Reynolds Empathy Scale (Reynolds 2000)
Scale of Empathic Skills (Dokmen 1989, 1990)
Staff-Patient Interaction Response Scale (Gallop *et al.* 1989)
Visual Analogue Scale (Wheeler *et al.* 1996)

* The authors have not reviewed these original references for the development of the empathy tools or referred to all of them within this paper.