Special Article

A Critical Review of Preceptor Development for Nurses Working with Undergraduate Nursing Students

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Abstract

Background: Preceptorship is a clinical teaching model through which undergraduate nursing students are facilitated to acquire beginning competencies that enable them to function effectively in the complex workplace environment upon graduation. Central to this model are preceptors who, although they may be expert clinicians, require specific educational support in order to carry out their student supervision role effectively.
Objectives: The aim of this study was to explore the outcomes of preceptor development activities for preceptors of undergraduate nursing students.
Methods: A comprehensive literature search was undertaken. Thirty-five studies of qualitative, quantitative and mixed method design were retrieved for analysis. Findings were analysed using a modified version of Kirkpatrick's model for educational interventions.
Results: Following development interventions, changes in knowledge, skills and attitudes in precepting were the most commonly reported outcomes.
Conclusion: Preceptor development programs appear to have positive impact. Implications for education and practice include the need for better preceptor support, especially with regard to workload management, to enable preceptors apply acquired knowledge and skills acquired in order to benefit undergraduate nursing students. More robust research is needed to build an evidence base in support of developing preceptors.

Key words: Preceptor, Preceptee, Preceptor Development, Faculty

Introduction and Background

Experiential learning occurring in clinical practice is undoubtedly an integral component of undergraduate nursing education. Through this type of experience, nursing students are able to integrate theory acquired through classroom instruction and skills initially developed in laboratories to actual practice within a real life environment (Broadbent et al. 2014; Gaberson, Oermann & Shellenbarger 2014). Students are expected to develop and apply cognitive skills, for example, clinical reasoning, critical thinking and problem-solving, as well as to refine their psychomotor skills. Lastly, experiential learning is expected to develop student's affective skills so that they can display appropriate attitudes when interacting with patients or clients, families, other nurses and members of the inter-professional team (Gaberson, Oermann & Shellenbarger 2014). The intended outcome is work-ready nurses who are able to provide safe and high quality patient care.

In most countries, undergraduate nursing students are expected to complete a minimum amount of clinical practice hours before they can be registered as nurses (Australian Nursing and

Midwifery Accreditation Council (ANMAC) 2012). To facilitate this, students may be attached to varied placement sites including acute, mental health, aged care and community settings (Health Workforce Australia 2014a). Within these placement sites various models are used to provide experiential education for undergraduate nursing students; however, their effectiveness in meeting learning objectives is poorly understood, or infrequently reported (Franklin 2013). Some of these models include clinical facilitator supervised practicum, dedicated education units and preceptorship (Budgen & Gamroth 2008; Franklin 2013). In many countries, the preceptorship method is increasingly being used in clinical education (Franklin 2013; Health Workforce Australia 2012). The need for socialisation of the student nurse to the 'reality of nursing', faculty shortages, as well as high costs associated with other traditional models such as the clinical facilitator model, have been associated with the increased uptake of the preceptor model of clinical teaching (Croxon & Maginnis 2009; Franklin 2013; Henderson et al. 2006; Billay & Myrick 2008; Omansky 2010; Rose 2008).

Preceptorship typically consists of a student being assigned to work on a one-on-one basis with a qualified nurse, a health facility employee, who takes on the role of teacher, evaluator, role model and socialiser for a specified period of time and with predetermined goals (Budgen & Gamroth 2008; Happell 2009). This method has been advanced as a key strategy to both expose and socialize undergraduate nursing students to the realities of nursing practice and, consequently, decrease the 'reality shock' that has resulted in new graduates becoming disillusioned with nursing and reportedly leaving the profession (Happell 2009; Kaviani & Stillwell 2000).

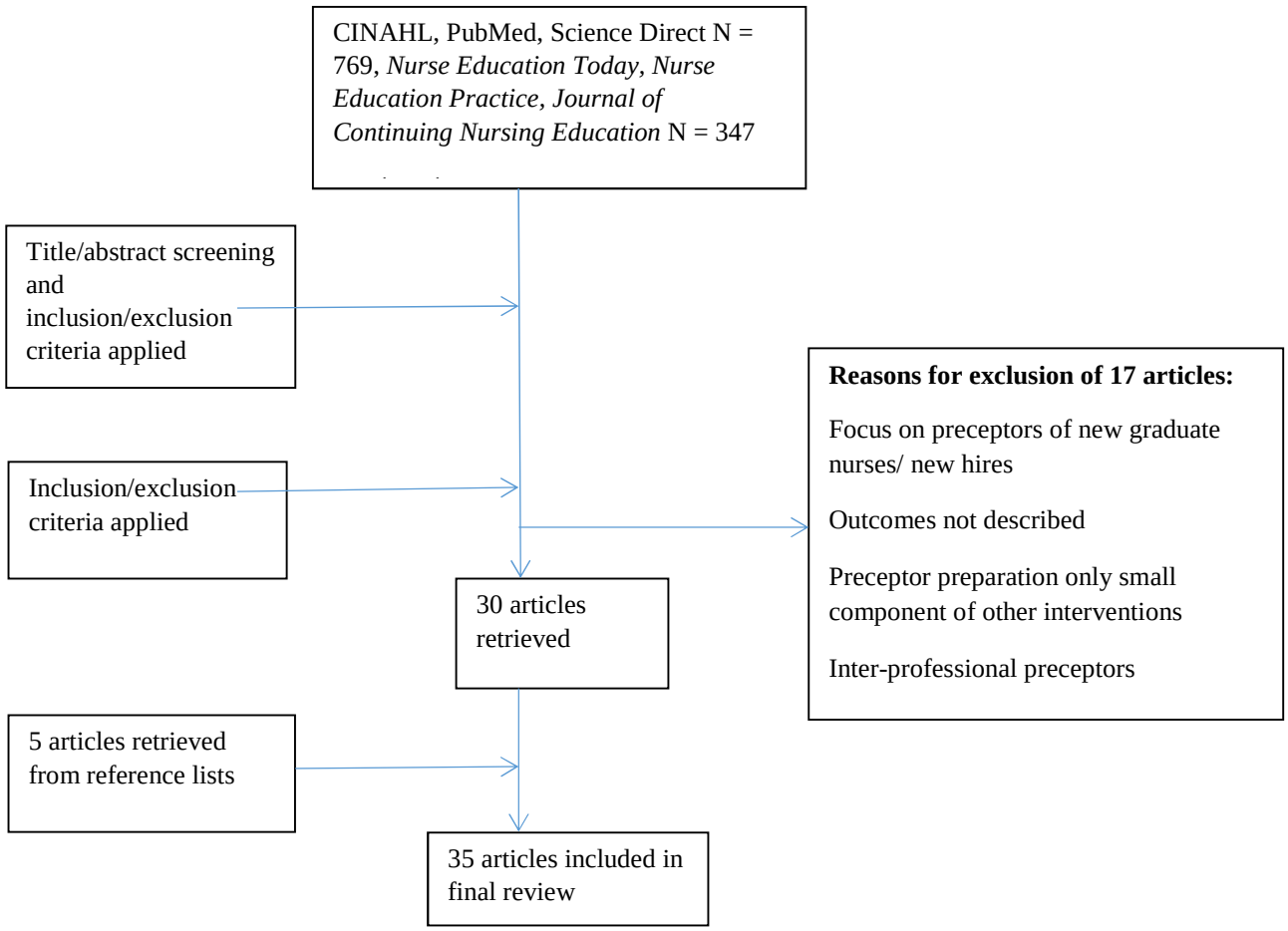

Figure 1. Flow diagram illustrating search process

Several benefits of preceptorship have been identified in literature. For students, increased confidence in performance of clinical skills, better communication and team collaboration has been reported as positive outcomes of preceptorship (Kim 2007; Hickey 2010) while personal satisfaction in participating in teaching and increased motivation to learn has been reported among preceptors (Hyrkäs & Shoemaker 2007; Usher et al. 1999; DeWolfe, Laschinger & Perkin 2010).

Despite these benefits, various challenges have been highlighted, among them being inadequate training for preceptors (McClure & Black 2013; Haggerty, Holloway & Wilson 2012; Duffy 2009; Varley, MacNamara & Mannix-McNamara 2012).

The success of the preceptor model has often been hinged on adequate preparation of nurses for their role as preceptors. This is based on the assumption that good clinicians are not necessarily good teachers and hence there is a need to equip preceptors with key knowledge and skills and to develop appropriate attitudes in order to carry out the preceptor role effectively (Kaviani & Stillwell 2000). However, literature continues to show that preceptors are not well prepared for student supervision (Health Workforce Australia 2010; Kaviani & Stillwell 2000; Rogan 2009).

The lack of formal standards for preceptor education programs (Ockerby et al. 2009; Zilembo & Monterosso 2008a) means that preceptor preparation may be taking place inconsistently. Moreover, effectiveness of the preparatory programs with regard to skills gained, knowledge acquired, and the impact on each preceptor's self-efficacy and student learning are not widely reported (Warren & Denham 2010). There is a dearth of information regarding the effectiveness of various preceptor development strategies, as well as other program design elements such as length of the training, frequency and content taught (Warren & Denham 2010) and their associated impact on the preceptor learning or behaviour.

The aim of this study was therefore to critically explore and analyse relevant studies on preceptor development programs for nurses working with undergraduate nursing students with regard to type of programs, delivery strategies and outcomes.

Methods

A comprehensive search was conducted for peer-reviewed, English-language studies published in the period January 1995 to May 2015 from several electronic databases including CINAHL, PubMed and Science Direct. Key nursing education journals such as *Nurse Education Today* and *Journal of Continuing Education in Nursing* were also searched for relevant studies. Lastly, reference lists of relevant studies were hand searched to identify studies missed during the initial database search. Search terms included 'preceptor', 'nurse preceptor' and 'preceptor development/preparation /education/training/orientation' and 'undergraduate nursing education'.

An initial screening of study title and abstracts was conducted to determine if studies met the inclusion criteria and to facilitate removal of duplicates. To be considered for inclusion, studies had to have some description of any form of training or education intervention for preceptors of undergraduate nursing students and report an outcome following the training initiative.

Studies in which nurses were trained as part of an inter-professional learning initiative were included as long as outcomes specific to nurse preceptors were reported. Studies describing nurse preceptor preparatory programs for individuals working with graduate nurses, postgraduate nursing students or newly employed nurses were excluded. Full text articles were then obtained for studies that met the inclusion criteria. A flow chart of the study selection process is outlined in Fig (1).

A modified version of Kirkpatrick's levels of evaluation of educational interventions (Steinert et al. 2006) was adopted for use as a framework to facilitate organisation and analysis of outcomes in the study. This model describes four levels of outcomes following educational interventions namely; Reactions of learners to educational experience, changes in attitudes, knowledge and skills in learners, application of practice to learning; and changes at the organisational level.

The study was considered as having negligible risk as there was no direct involvement of human subjects and hence exempt from the University's ethical review.

Results

Overview of findings

A total of 1,116 potential articles were retrieved using the search strategy described. Following application of specified inclusion criteria and exclusion criteria, only 35 studies were included in the final review. All but one study were published after the year 2000, with majority of the studies (81%) being published between the years 2005–2015.

Nearly seventy five percent of the studies were conducted in the United States of America (USA) and Australia. Findings revealed that most studies were quantitative in nature, with a significant number employing before/after designs. Only one randomised controlled trial was reported. Data collection tools most commonly used were questionnaires.

Participants in the studies were mainly nurses working in hospitals across metropolitan areas, had considerable years of nursing experience, were older and had varied levels of experience in precepting undergraduate nursing students. Outcomes reported within the studies were mainly positive with those most frequently evaluated being level 2b outcomes dealing with change in participants knowledge and skill as presented below.

General themes emerged from the synthesis; Enhancing preceptor knowledge, skills and attitude; and getting results. These themes are discussed below narratively.

Table 1: Table showing outcomes of preceptor development initiatives

Level	Outcome	Frequency	Percentage (%)
1	Reaction to learning experience	24	68.5%
2a	Attitudes and Perceptions changed due to learning experience	17	48.5%
2b	Knowledge and Skills acquired from educational intervention	26	74%
3	Behaviour change/application of knowledge, skills and attitude acquired at work place	15	42.8%
4a	Organisational impact attributed to educational intervention	7	20%
4b	Impact on student learning/performance attributed to education intervention	6	17.1%

Enhancing preceptor knowledge, skills and attitude

Outcomes with regard to acquisition of cognitive, motor or social skills, as well as improved understanding of concepts related to the preceptorship role were reported in 74% of reviewed studies. Positive gains were reported in a majority of these studies. This seemed to be intrinsically linked to preceptor development content, which appeared to mainly focus on fostering knowledge and skills on teaching strategies, evaluation of learning and managing challenges in the clinical area. Above-average self-rated mean scores regarding knowledge of the preceptor role were reported in two studies where participants ranged from 150 (Charleston & Happell 2004) to 191 nurses (Heffernan et al. 2009). In another study, a significant increase in knowledge of preceptor role was reported among 93 nurses attending a one-day workshop (Ford, Courtney-Pratt & Fitzgerald 2013) while results of a mixed method study, where the intervention consisted of a computer-assisted preceptorship module showed significant improvement with regard to understanding student learning objectives (Browning & Pront 2015). In contrast, there was no significant increase in preceptors' scores on a knowledge test in an American study where instructional CD-ROMs were given to preceptors (Parker, Lazenby & Brown 2012) with reseachers attributing this to a low response rate.

Three studies using print resources in developing the preceptors reported mixed findings. While improved role clarity was reported in Riley-Doucet (2008) and Trevitt, Grealish & Reaby (2001) studies', 22 participants in a qualitative study did not reach consensus on whether a preceptor manual helped clarify or improve understanding of their role (Luhanga, Dickieson and Mossey's 2010). It was noted that 40% of participants had not used the manual, while its length was considered a hindrance to completing it. However, for participants who had used the manual, there was a perception that it helped them understand their role in student evaluation.

Improved knowledge of teaching strategies was reported in two Jordanian studies. Al-Hussami et al. (2011) conducted a randomised control trial with 68 nurses in four hospitals. The intervention consisted of four-hour daily workshops over a one-week period for the intervention group. Post-test knowledge scores at one-week following the intervention indicated significant increase from pre-test scores within the group ($p<0.000$, $n = 30$) as well as significant difference between intervention and control group ($p<0.000$). None of the demographic variables in this study were thought to influence the change in post-intervention scores. In the second study using a mixed method approach, interviews with twelve participants who had attended several workshops over a one-year period revealed an increase in understanding of ways to enhance experiential learning in students (Halabi et al. 2012).

Participants ranging from 12 to 48 in number were evaluated for the level of knowledge on a variety of learning objectives including preceptor role, teaching and learning, evaluation and managing challenging situations (Larsen & Zahner 2011; Parsons 2007; Zahner et al. 2009). Evaluation was conducted before and after completion of online modules at varied follow-up times. Findings in all three studies revealed a significant improvement in participants' knowledge level post intervention.

Other studies reported improved knowledge on other elements of preceptorship including evaluation of student learning (Ford, Courtney-Pratt and Fitzgerald 2013; Yonge, Myrick & Ferguson 2012), nursing program requirements (Heffernan et al. 2009; Mackay et al. 2014), critical thinking and reflection (Myrick et al. 2012; Rose 2008) as well as managing conflict (Halabi et al. 2012; Rose 2008).

With regard to attitude, seventeen studies reported some form of change of perception of the preceptor role following preceptor development interventions. The most commonly reported change in perception among preceptors was improved confidence in supervising student learning (Browning & Pront 2015; Charleston & Goodwin 2004; Ford, Courtney-Pratt & Fitzgerald 2013; Parker, Lazenby & Brown 2012; Zahner 2006), with self-efficacy also being notably mentioned (Larsen & Zahner 2011; Smedley, Morey & Race 2010; Zahner et al. 2009).

Mental health nurses attending preceptor development workshops in two studies perceived that their confidence in precepting students had increased (Charleston & Goodwin 2004; Charleston & Happell 2004; Heffernan et al. 2009). In Halabi et al. (2012) study, participants stated that their self-confidence had increased following learning about experiential teaching

strategies. Similarly, an increase in participants' confidence to provide feedback and in general precepting abilities were improved following development interventions that consisted of workshop, online modules and CD-ROM, respectively (Ford, Courtney-Pratt and Fitzgerald 2013; Zahner 2006; Parker, Lazenby and Brown's 2012)

Self-efficacy was evaluated in three studies which involved online modules as the preceptor development intervention. In Parsons (2007) and Larsen and Zahner's (2011) studies, significant increase in self-efficacy was reported immediately following the intervention, as well as on follow-up at one month (Parsons 2007) and at three months (Larsen & Zahner 2011). Participant's characteristics such as nursing qualification and previous experience in precepting (Larsen & Zahner 2011), as well as previous preceptor training (Parsons 2007) was positively correlated with self-efficacy. In contrast, findings from the third study revealed that there was no significant change in self-efficacy between pre-test and follow-up at 6 months (Zahner 2009). Attitudinal changes were also reported in other studies in which preceptor development interventions consisted of workshops (Hagler et al. 2012; Löfmark & Thorell-Ekstrand 2010) and a formal course (Smedley, Morey & Race 2010).

Getting Results

The impact of development interventions on preceptor behavior, the employing institution, education institution and undergraduate nursing student performance was reported in several studies. Change in preceptor behavior was reported in 15 studies. In two Australian studies, both preceptors and students took part in a development initiative. In the first study, preceptors were able to utilise a learning plan within a self-directed print resource to discuss students' learning objectives with them (Trevitt, Grealish & Reaby 2001).

Participants in the second study adopted a more collaborative approach when inducting students to the clinical environment and facilitated learning based on learning objectives and student interests (Robinson et al. 1998). Better planning for student learning among was also reported elsewhere (Myrick et al. 2011; Myrick et al. 2012)

Better teaching strategies adopted by participants following development intervention have also been reported. In one study, preceptors planned and used student-centered teaching methods (Halabi et al. 2012); while in a phenomenological study, participants reported using 'creative teaching strategies' (Smedley 2008, p. 189), however these were not described. Similarly, another study reported that participants rated their mean demonstration of knowledge and skills such as reflection, communication, teaching nursing, challenging critical thinking and providing feedback as above-average, following an intervention (Heffernan et al. 2009).

Adoption of new student evaluation methods and feedback provision was reported in three studies where development strategies ranged from online modules to workshops (Yonge, Myrick & Ferguson 2012; Robinson et al. 1998; Sharpnack, Moon and Waite 2014). In two other studies, preceptors reported increased interaction with students and eagerness to take on preceptorship roles with differences between preceptors based in rural and metropolitan areas being noted (Charleston & Goodwin 2004; Charleston & Happell 2005). Increased preceptor interaction with students was also reported by Eaton, Henderson & Winch (2007).

Few studies reported outcomes related to organisational change with regard to preceptorship following development interventions. For example, an increased in the numbers of preceptors available to supervise students (Charleston & Happell 2004; Rose 2008), as well as cost savings resulting from adopting technology in training preceptors (Krampe, L'Ecuyer & Palmer 2013). Anecdotal reports of development of a learning culture and improved quality of clinical placements was noted by Ford, Courtney-Pratt and Fitzgerald (2013).

Additionally, increased request by learning institutions for the hospital to be used as a placement site for students had been noted, and was also reported elsewhere (Charleston & Goodwin 2004; Charleston & Happell 2005). In a rural health facility, it was reported that graduating student nurses had been recruited as a result of changes in staff nurses occurring due to a preceptor development initiative. The inability to recruit younger graduates had been previously

noted as a challenge (Charleston & Goodwin 2004).

The effect of staff training on preceptorship policy in mental health facilities was also reported (Charleston & Goodwin 2004; Charleston & Happell 2005). In the latter study, preceptors reported adoption of new processes by the organisation with regard to preceptorship, although these were not elaborated. A preceptorship guideline had been developed and was perceived to be a direct result of preceptor development workshops held (Charleston & Goodwin 2004). The guideline was reportedly being utilised by other health facilities as a basis for developing their own guidelines on preceptorship. Knowledge and skills acquired in preceptor development programs were also extended to provide support for students from other disciplines (Charleston & Goodwin 2004) as well as new staff and other colleagues (Yonge, Myrick & Ferguson 2012).

Lastly, closer collaborative ties between academia and clinical areas were reported as an outcome of preceptor development programs, including better relationships between preceptors and faculty (Halabi et al. 2012; Mackay et al. 2014; Robinson et al. 1998). Faculty attendance of preceptor development workshops was perceived by preceptors as a sign of support to these nurses (Yonge, Myrick & Ferguson 2012). Through such collaboration, opportunities for training in areas other than preceptorship were made available to employees of health facilities (Charleston & Goodwin 2004).

The effect of preceptor development interventions on students was scarcely evaluated. Clinical placement evaluations indicated that students were satisfied with their overall preceptorship experience, including continuous availability of preceptors to supervise them during their placements (Charleston & Goodwin 2004; Charleston & Happell 2005). However, these evaluations were not well described and were based on anecdotal reports from participants in these studies. Active participation and increased satisfaction with new teaching techniques employed by preceptors was also reported (Halabi et al. 2012). In another study, the difference in self-rating of student involvement in clinical activities using the Clinical Learning Environment Inventory was significant for students who were supervised by nurses who had been supported to develop their preceptorship skills, as compared to those in the control group (Henderson et al. 2010). Students supervised by nurses who had participate in a training initiative offered through an online platform had better communication and clinical decision-making skills (Sharpnack, Moon and Waite 2014). Increased confidence in providing care for patients and more efficient use of time by students was noted as an outcome as well (Robinson et al. 1998).

Discussion

Knowledge, skills and attitudes of preceptors

Change in knowledge, skills and attitudes of preceptors following preceptor development programs was the most reported outcome in the reviewed studies. Generally, there was an indication that development initiatives were successful in improving these key elements among preceptors. With regard to attitude, preceptors perceived that their confidence in facilitating student learning had improved.

This was also confirmed in studies reporting significant improvement in self-efficacy. Self-efficacy has been noted as having the potential to greatly influence a person's behavior (Zulkosky 2009). Furthermore, it has been suggested that self-efficacy may develop through observing other people's behaviour and receiving feedback on performance (Zulkosky 2009). It is therefore not surprising that in this review, studies in which the development intervention consisted of video presentation modelling interactions between students and preceptors, self-efficacy was reported as a key outcome.

It is also worth noting that previous preceptor training, academic qualification and experience in precepting were positively correlated with self-efficacy within some studies. This suggests that preceptor development may have a long-term effect on self-efficacy, while also indicating the need to have preceptors with higher academic qualifications precepting. In view of findings in this study, it would seem that academic qualifications such as having a nursing degree should be considered as an important criterion when choosing preceptors of undergraduate nursing students, especially where this is not the current practice.

Improvement of knowledge and skills in areas such as understanding the preceptor role, teaching and learning strategies, effective evaluation and feedback was another important

outcome of a majority of the development initiatives. While evaluation of learning was in most cases reported immediately post intervention, few studies reported considerably long-term evaluation which showed significant improvement of knowledge. Findings from the literature suggest that preceptor development impacts understanding and builds confidence in the preceptor's ability to carry out various functions within the preceptor role (Sandau et al. 2011; Wilson et al. 2013).

Results of a mixed method study, where 131 preceptors attended a one-day workshop, revealed a significant increase in confidence regarding general facilitation of learning, as well as providing feedback, enhancing critical thinking and engaging with diverse learners between three and six months following the intervention (Sandau et al. 2011). Notably, there was no significant difference in knowledge reported between preceptors who had attended the course and those who had not. Researchers attributed this to possible previous training among some of the preceptors in this group (Sandau & Halm 2011).

This suggests that preceptor preparation may have a sustainable effect on confidence and knowledge in precepting. However, in the present review, changes in participants' knowledge and skills were mainly based on self-reports. In addition, the psychometric properties of some of the tools used to assess knowledge were not reported. In some studies, only post-intervention testing was conducted, hence incremental change in precepting knowledge that may have been directly attributed to the preceptor development intervention could not be ascertained.

It is also important to note the role of context that may have contributed to success in the acquisition of knowledge and skills by preceptors. Preceptor development programs, including the content, appeared to have been tailor-made for specific audiences, hence it is possible that replication of programs in different settings may not necessarily result in positive gains as reported in this review. It is worth noting that the length and type of preceptor development programs did not appear to influence acquisition of knowledge and precepting skills. This further reinforces the view that no single method may be superior to others. Additionally, development programs that require less release time from the workplace or from preceptor's personal time may be preferred due to cost implication.

Transfer of learning

Findings from this review indicated that there had been changes in preceptors' practice following involvement in development programs. Notable changes among preceptors included increased interaction with students, use of appropriate teaching strategies and evaluation of performance. These findings, although based on participant's self-reports are important as lack of meaningful involvement of preceptors with students in clinical areas may be a barrier to effective learning within the preceptorship model (Croxon & Maginnis 2009).

Barriers to application of knowledge and skills to practice may play a role in hindering successful transfer of learning. For example, lack of time to undertake precepting responsibilities as well as lack of regular follow-up in continuous education was cited in studies, as possible factors hindering implementation of knowledge and skills by preceptors following development interventions.

This is consistent with findings in the literature. Sandau and Halm (2011) reported that although preceptors perceived themselves as having confidence to facilitate learning after completing a development workshop, they felt that they had little time to apply their skills due to heavy workloads. In a systematic review on preceptor support, 17 out of 20 studies reported lack of time and busy schedules as major inhibiting factors influencing the preceptors' ability to precept (Goss 2015).

It has been suggested that preceptors need time to implement skills acquired during development activities as well as regular follow-up by faculty in order to manage any needs that may arise with regard to the precepting role (Henderson & Eaton 2013). It would seem illogical that much time and resources are spent developing the preceptor for student supervision, yet preceptors are not enabled to apply their knowledge and skills to support students.

The impact of preceptor development programs on organisations such as improvement in academic–service collaboration, increased numbers of preceptors, cost savings, as well a recruitment of new graduates by health facilities were some of the outcomes cited at this level.

Such findings however call for cautious interpretation as it may be difficult to attribute the positive outcomes solely to preceptor training.

Many preceptorship programs reporting outcomes at this level are also likely to include preparation of preceptees, as well as other initiatives such as reward and recognition of preceptors (Murray et al. 2010). It is possible that the combined effect of these factors may be the driving force behind this positive change rather than preceptor training solely.

Improvement of students' knowledge, skills and attitudes following preceptor development was the least reported outcome. There was an indication among studies reviewed that students were satisfied with their learning experiences during preceptorship while their confidence in undertaking clinical tasks had increased. In one study, students involved in a preceptorship program where preceptors had been trained had a high graduation rate, while the pass rate for nurse registration examination for this group was higher compared to the national mean (Stewart, Pope & Hansen 2010).

In contrast, Sandau et al. (2011) found that there was no significant difference with regard to 'satisfaction' and 'confidence' in performing clinical assignments, among nurses who were new hires or recent graduates supported by trained preceptors, compared to those who had not. Their qualitative findings suggested that the lack of change among orientees was due to a perceived lack of continuous support by the same preceptors during the course of their orientation (Sandau & Halm 2011).

Ineffective workload management resulting in work overload among participants appeared to be the major hindrance to effective preceptorship (Omansky 2010), indicating the need for more workplace support for preceptors in order to enable them effectively carry out their role.

Cognisant of the importance of providing adequate time for the preceptor and the orientee, the study by Neumann et al. (2004) reported that patients were assigned progressively to the pair as the confidence of orientee grew. Although this model is likely to have cost implications, it seems a worthy investment considering the possible benefits of preceptorship to health service organisations.

Study limitations

An appraisal tool developed by Caldwell, Henshaw and Taylor (2005) was used to evaluate each study and determine its relevance to the review. However, no overall numerical criterion for judging study quality was applied and studies were therefore not excluded, as long as eligibility criteria were met. It was also noted that validity and reliability of tools used for data collection were not always reported, while in mixed method studies, analysis of the qualitative component was not explicitly described by some researchers.

Outcomes with regard to acquisition of new knowledge, skills and attitude following development interventions were based on self-reports rather than observation hence providing potential for bias. The search was confined to the term 'preceptor' which could have resulted in exclusion of other relevant studies.

Recommendations and Conclusions

There is need to conduct systematic reviews on the effect of preceptor development using more robust procedures whose results could provide stronger evidence for use by policy makers. Equally, more rigorous individual primary studies of quantitative, qualitative or mixed method nature ought to be conducted. In this review, only one study employed an experimental design. More experimental designs that control for variables that may influence outcomes development interventions are needed. Use of more objective knowledge tests, as well as observation of preceptor's skills and attitudes by facilitators during simulation activities, may be additional and more objective ways of determining acquisition of these key attributes.

Findings of this review indicate that preceptor development does have an impact on preceptors' attitude, knowledge and skills and as a result student outcomes. The of multi-pronged preceptor development strategies need further investigation by nursing education and practice policy makers, considering that no single method may be entirely effective or satisfactory on its own. As lack of time appears to be a major hindrance in the transfer of learning by preceptors, there is a need for practice areas, to re-evaluate their commitment to preceptor development and their role in supporting student learning.

It is also apparent that other support measures, such as rewards for preceptors, need to continue to be considered as training alone may not be sufficient to sustain preceptors' commitment to the preceptor role.

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