

Encouraging diabetes educators to do research

Trisha Dunning

Introduction

Research is a core component of the diabetes nurse educator (DNE) role and is clearly articulated in the professional documents of the Australian Diabetes Educators Association (ADEA). However, research presents challenges for many DNEs and few are actively involved in research activities. A survey of DNEs identified the barriers to DNE research and some methods of reducing the barriers, including mentoring. Consequently, a research advisory scheme (RAS) was developed. The RAS is a mentoring programme and consists of research workshops and ongoing mentoring. Evaluation was undertaken after the initial workshops and participants were followed up after 6 months and again 4 years later. This paper reports the 4-year outcomes after the initial workshop.

Nursing research is integral to the delivery of effective, efficient nursing care. Patients who receive evidence based care have better outcomes (Heater et al, 1988), yet many nurses are ambivalent about research and the role of evidence-based care (Bryar et al, 2002) and often feel they lack the autonomy to implement changes. In addition, nurses often become frustrated when many nursing research methods are not regarded as valuable or rigorous as controlled trials when the evidence for practice is evaluated and applied. Although the value of evidence-based care is acknowledged, not every aspect of patient care can or will be delivered according to evidence.

Research represents a challenge for all nurses. Although research subjects are included in undergraduate and postgraduate nurse education nurse programmes, nurses have a range of beliefs and attitudes to research, and most do not actively engage in research. In addition, nursing research is underfunded in comparison with medical research. Seventy three percent of published nursing research is not funded, which is inequitable compared with the size of the workforce (Rafferty and Traynor, 2003), especially given that nurses are more likely to engage in research if funds are available (Carroll et al, 1997).

Research is a core aspect of the diabetes

nurse educator (DNE; equivalent to diabetes specialist nurse in the UK) role and is clearly articulated in the Australian Diabetes Educators Association (ADEA) professional documents (ADEA, 1996; ADEA, 2000; ADEA, 2001; ADEA, 2002). The Royal College of Nursing, Australia (RCNA) also views research as being essential for the nursing profession (RCNA, 1998).

The importance of evidence-based practice, and using research evidence as the basis for diabetes education, is increasing in line with the general trend towards evidence-based care. More recently, the emerging recognition of the nurse practitioner role, and diabetes educators as a category of nurse practitioner (Nurses Board of Victoria, 2002), highlights the importance of research to diabetes education practice. Despite the clear focus on research in nursing generally and by the ADEA, few Australian diabetes educators appear to engage in research other than programme evaluation, based on presentations at diabetes conferences and publications.

It is a propitious time to be undertaking research in diabetes education, not only because of the general focus on nursing research, but also the high priority given to diabetes in the health system (5th National Health Priority) and increasing media attention to diabetes, especially prevention, largely because of its increasing incidence and

ARTICLE POINTS

1 'Research' involves more than 'doing research'.

2 The barriers to diabetes nurse educators doing research are not significantly different from the barriers in any other kind of nursing.

3 Research mentoring schemes can improve knowledge and competence, offer support, and influence the research output of individuals.

4 Research mentoring schemes present challenges to the organisation and mentors and have cost implications.

KEY WORDS

- Diabetes educator
- Research
- Mentoring
- Barriers
- Advice

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1 Many DNEs do not understand the research process and do not actively participate in research – that is, they lack research awareness.

2 Some of the research challenges for DNEs include negative attitudes towards research, knowledge deficits, lack of support and time.

3 The limited availability of mentor and peer support, resources and time, are barriers to DNE research, particularly in isolated rural areas.

4 Questionnaire responses suggested DNEs have a narrow view of research as ‘doing’ rather than as a continuum of related activities that incorporates reading, evaluating, using, monitoring the outcomes and doing.

prevalence. In addition, recent research successes have visibly changed the way diabetes care and education is delivered, and treatment targets such as HbA_{1c}, lipids and blood pressure (DCCT, 1993; UKPDS, 1997). These studies not only increased the focus on good metabolic control, but made it important for DNEs to be able to interpret the findings in order to incorporate them in their practices, present them to colleagues, explain them to people with diabetes and help them develop appropriate health plans informed by evidence. In addition, there are a growing number of research grant opportunities specifically targeting diabetes education. These grants are small, but obtaining small grants allows DNEs to build their research experience and increases their chances of obtaining larger grants.

Despite these research positives, many DNEs do not understand the research process and do not actively participate in research – that is, they lack research awareness. Some of the research challenges for DNEs include negative attitudes towards research, knowledge deficits, lack of support and time (Michael, 1996). These challenges are no different from other areas of nursing. In addition, many DNEs find it difficult to see how research and clinical practice can be integrated, despite research being a core component of the DNE role, competencies and credentialing process. Few DNEs realise that the problem-solving approach they apply to clinical practice can be applied to the research process (Michael, 1996), or that using research (evidence-based care) contributes to better patient outcomes (Heater et al, 1988).

DNEs attitudes to research have not been widely studied, however, health professionals with a positive attitude to research are more likely to use research findings, even if they do not actually undertake research themselves (Wells and Baggs, 1994). The limited availability of mentor and peer support, resources and time, are barriers to DNE research, particularly in isolated rural areas (Dunning, 1994).

Coordinating the abstract review process for the ADEA National Conference during 1995–1997 and again in 2001–2003 highlighted some of these issues to the author. There were a number of telephone calls from

ADEA members informally seeking advice about how to undertake research and write an abstract. In some cases, abstracts were sent to the researcher to critique prior to their being submitted to the formal abstract review process. It also emerged that the majority of abstracts dealt with programme development, few used established evaluation processes, other than before and after comparisons, and most lacked rigour. It became apparent that a way to develop the research capacity of DNEs was needed.

ADEA members were surveyed using anonymous questionnaires in 1999 to ascertain the issues and barriers to DNEs participating in research and elicit some suggestions for ways to increase research awareness among DNEs and encourage them to participate in research. The barriers and suggested solutions are shown in *Table 1*. The identified barriers are similar to other areas of nursing (Yallop, 1998; Yates et al, 2002), with the exception of identifying research as the responsibility of academics.

The ADEA, the professional body of DNEs, clearly views research as a core component of diabetes educators (clinicians), as articulated in the relevant professional documents already cited. Responses to the open questions also suggested DNEs have a narrow view of research as ‘doing’ rather than as a continuum of related activities that incorporates reading, evaluating, using, monitoring the outcomes and doing. This narrow view is probably similar to that of other categories of nurse.

The role of mentoring

Mentoring emerged as an important way to help DNEs develop research knowledge and skills. Mentoring has been widely used in professional development activities and to foster careers. Other researchers have demonstrated the value of mentoring programmes in nursing (Lo and Brown, 2000) and the benefits to both the mentor and mentee (Galicia et al, 1997). In a good mentoring partnership, the mentee develops confidence and knowledge and their independence increases, that is, they progress from acquiring information to being able to apply the information (Morton-Cooper and Palmer, 1993). The mentor gains job satisfaction, increases their professional and leadership image and

often acquires knowledge (Lo and Brown, 2000). 'Mentor' in this sense refers to a role model, guide, or active advisor who promotes the mentee and empowers them to make a contribution (Vance, 1982). Cooper (1990), described mentoring as the 'key to the future of nursing professionalism'.

Various mentoring models have been developed. They reflect a shift from mentoring for primary leadership roles to the current emphasis on the mentor as a teacher, clinician and researcher. Research mentoring received less attention than education and career mentoring until recently, but as the need for research productivity and capability emerge, mentoring is being considered as one method of enhancing the quality and quantity of nursing research output (Byrne and Keefe, 2002). On the basis of the mentoring literature, and based on the results of the DNE survey, a research advisory scheme (RAS) was developed for the ADEA.

The research advisory scheme

The aims of the scheme are to:

- Increase the research awareness of ADEA members
- Demonstrate how research can be integrated into clinical activities and is not limited to academic settings
- Promote evidence-based care as a core aspect of diabetes education and care and an important guide to clinical decision-making
- Assist ADEA members to understand research to enable them to locate, evaluate and apply research findings to clinical practice, i.e. to link research to clinical practice
- Assist members to undertake research.

Methods

The RAS consists of interactive workshops and ongoing mentoring. It relies on volunteer mentors and does not have a formal operating budget. DNEs seeking a research mentor under the RAS contact the RAS coordinator who matches them with a mentor. Both parties are sent documentation that outlines the RAS, sets out their various responsibilities, and defines the process for changing mentors if the designated mentor is not proficient in the methodology most suited to the

proposed project or the relationship does not 'gel'. The RAS was promoted through the ADEA professional journal and at state branch meetings and the workshops were advertised in brochures circulated with the ADEA national conference information.

The initial and ongoing impact of the workshop was determined by participants completing questionnaires at the end of the workshop to determine the initial impact and perceived usefulness of the workshop; 6 months after the workshop to estimate the ongoing effects of the workshop, including changes in research practices; and 6 months and 4 years later to estimate the long term effects and research output of participants.

The workshops consisted of a combination of lecture, discussion, writing and guided critiquing of research papers. The workshops contribute continuing

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Table 1. Barriers to diabetes educators undertaking research

Barriers	Strategies to overcome
Inadequate knowledge about research and confusion between research and quality assurance processes.	Education programme specifically about research.
Isolation and difficulty accessing research advice.	Education programme linked with other meetings, such as the ADEA national and state conferences. A research mentor scheme. Form and ADEA Research Network.
Do not know how to critique research papers properly or how to assess if they are relevant to own practice.	Education programme that includes critiquing papers and 'hands on' information and some practical ideas about how to use the information in practice.
Lack of time and resources.	More money available for diabetes education research. Promote need to structure specific time for research into the workload to employers. Publicise research funding opportunities in ADEA publications.
Research is the responsibility of academics.	Demystify research and make it fun.

Table 2. Aspects of the workshop valued by research participants (n=17)*

- Made the research process easy to understand (16)
- Broke research into manageable chunks (15)
- Stimulated research ideas (11)
- Identified the scope and value of research and how it relates to DNEs in our day-to-day jobs (10)
- Being tied to the conference allowed immediate application of the information presented in the workshop to be applied to papers in the scientific sessions (10)
- How to critique research papers and assess if they are relevant to individual's workplace (10)
- Showed that research could be fun (9)
- Explained research terminology (9)
- Important part of professional development (6)
- Increased confidence to undertake research (5)
- Improved understanding of statistics (3)

*Raw numbers are shown in brackets. Some participants gave more than one response.

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1 A detailed workbook was used as the basis of the workshop teaching and served as an ongoing reference after the completion of the session.

2 Twenty-five people participated in the first workshop. Evaluation was carried out at the end of the workshop to obtain direct feedback using the 'Field of Words'

3 All respondents valued the group discussion and interactive nature of the workshop.

4 They particularly welcomed the broad focus on 'being involved in research' evident in the workshop.

professional development (CPD) points towards ADEA credentialled status and the recredentialing process. A detailed workbook based on interactive self-learning using a stepwise approach to research, was provided to each participant. The workbook was used as the basis of the workshop teaching and served as an ongoing reference after the completion of the workshop. Pharmaceutical sponsorship has enabled workshops to be conducted in conjunction with the annual ADEA national conferences for the past 4 years. Four workshops have been held to date. The results of the initial workshop and the 6-month and 4 year follow-up questionnaires after the initial workshop are presented in this paper.

Results

The workshop was planned to accommodate between six and twelve participants. However, interest was high and 32 people applied to attend. A decision was taken to accept as many participants as space would allow, ensuring motivation and interest in research was not lost. Consequently, 25 people attended. The remaining seven attended a subsequent workshop.

1. Initial workshop evaluation

Twenty-five people participated in the first workshop. Evaluation was carried out at the

end of the workshop to obtain direct feedback using the 'Field of Words' (Szirom and Dyson, 1987). This little-known evaluation tool was used to address the need to 'make research fun' as identified in the DNE survey. Seventeen of the 25 participants completed the evaluation.

The Field of Words consists of a large square containing various words and pictures. Participants circle the word or picture that best describes their evaluation of the workshop. Both negative and positive words occur in the field. Participants are encouraged to add their own word(s) if existing words do not adequately reflect their response. The Field of Words was used to give an idea of the impact of the workshop, but is not a measure of long-term usefulness.

Table 2 shows the workshop information participants found most valuable and Table 3 outlines the information participants said would be most useful in applying research to their work. Ten participants attended the workshop with an idea for a research project in mind. Fifteen participants attended for professional development reasons, to achieve CPD points and to understand the research process. They indicated they did not want to undertake research themselves. All respondents valued the group discussion and interactive nature of the workshop, which they stated improved their confidence and reassured them that other people were at the same stage with respect to understanding research. They particularly welcomed the broad focus on 'being involved in research' evident in the workshop. Four participants indicated the time allowed to cover the amount of information (7 h), was too short.

2. Six month follow up

An anonymous questionnaire was sent to all workshop participants 6 months after the workshop to assess the extent of utilisation of the information provided in the workshop (n=20). Five of the original 25 had moved jobs and were lost to follow up. Ten of the remaining twenty participants returned the questionnaire and ten did not respond and were not followed up further. Of the ten responders:

- Four had written a research proposal but had not implemented the project at the

time of the survey. Of these, two were at various stages of obtaining ethics approval for their projects.

- Six stated they felt more competent to systematically and critically assess research articles using the process indicated during the research workshop and the workbook.
- Two had joined journal clubs and felt comfortable to actively join in the discussion.
- All ten respondents used the workshop workbook as an ongoing resource and found the information 'easier to read, follow and understand than many research textbooks'.

Some respondents indicated they participated in two or more of these activities. Respondents who joined in research activities felt they offered better diabetes care and were more up-to-date with the information they provided to their patients and colleagues.

3. Four year evaluation

Continued sponsorship enabled the workshop to be repeated in 2001, 2002 and 2003 before each annual ADEA conference. Places were limited to 30 in each workshop. Workshops continued to be oversubscribed and two additional workshops were held in remote and rural areas and one Australian state to cater for the demand. The RAS coordinator receives 0.5–1 requests for advice or critical comment about research-related projects per week on average. This number increases when the call for abstracts for the ADEA national conference is published.

Two of the participants in the original workshop were enrolled in coursework Masters programmes; one in a research Masters and one had completed a Masters by coursework at the time of the survey.

Participation in journal clubs had continued. One rural DNE had instituted a journal club in her region and secured funding to hold meetings four times per year. This DNE is also developing a regional collaborative research project under the guidance of her RAS mentor.

The number and quality of abstracts submitted by DNEs for consideration for presentation at national and state ADEA conferences has increased. The average score

has improved from roughly six in 1999 to >eight out of ten in 2003. However, most abstracts still describe quality improvement projects and programme evaluation.

The workshop content was adapted as a research unit for the ADEA accredited diabetes education certificate courses offered by two education providers in Victoria in 2000. These units gradually evolved according to student needs and now mainly focus on providing an overview of the research process and how to critically appraise research papers. The assessment task consists of a critical appraisal and is more appropriate to the weight of the assessment and duration of the course. In addition it is directly related to clinical practice.

Discussion

Changing the focus on research from 'doing' to 'using', linking it to clinical practice and demystifying research terminology improved the participants' confidence in their ability to participate in research activities and has the capacity to improve the uptake and understanding of evidence-based practice. It has also enabled the aim of the RAS, to increase research awareness in ADEA members to be met in a sequential way, starting at the competence level of the majority of DNEs. The majority of DNEs who participated have continued to use the information 4 years after they attended the initial workshop. Some have undertaken tertiary studies. Although the number of ADEA members actively engaged in research activities is still small, it is increasing. In addition, the quality of abstracts presented to

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1 Changing the focus on research from 'doing' to 'using', linking it to clinical practice and demystifying research terminology improved the participants' confidence in their ability to participate in research activities

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Table 3. Aspects of the workshop that participants felt would be most useful to the research component of their work (n=17)*

- The workbook – a practical way to approach research and an easy-to-use resource (11)
- Improve skills at critiquing research articles and be able to decide how they apply to own situation (10)
- Concrete examples of how to apply research in practice (9)
- Understand the meaning of statistics when reading journal articles (5)
- Understand research terms when doctors talk about research at clinical case meetings, journal clubs and conferences (4)
- Confidence to implement a research project (2)

*Raw numbers are shown in brackets. Some participants gave more than one reason.

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1 Participants reported a high level of research activity after 6 months that was still evident 4 years later.

2 Schemes such as the RAS are resource-intensive and identifying, attracting and maintaining a suitable mentor pool has been difficult.

3 Identifying what DNEs wanted in a mentor was an important consideration when developing the RAS.

4 Whilst the RAS was developed for a specific category of specialist nurses, it is similar to other nurse mentoring processes.

the ADEA annual conference has improved. One participant described herself as now using 'research thinking' more often.

An important aspect of the success of the scheme is that it was developed in response to ADEA members' identified needs and incorporating the methods they identified as ways to overcome some of their perceived barriers. Participants exhibit a high commitment to professional development, which is a requirement of the ADEA Credentialling and Recredentialling programme. Attendance at the workshop accrues points towards credentialling and this may have influenced people to attend. However, participants reported a high level of research activity after 6 months that was still evident 4 years later, which suggests there were ongoing effects of the workshop for some participants.

The RAS is essentially a mentoring process. Mentoring is one of the most effective ways to help people develop professionally (Lewis, 1996) and can enhance other methods of learning. Byrne and Keefe (2002) stated that limited mentoring efforts have limited effects, and stressed the importance of intense long-term involvement in research projects with an expert. The value of such 'apprenticeship' systems is acknowledged, however, they train people to 'do' research and the number of people who can participate is limited, including by funding. In addition, they do not take account of the fact that the majority of people need to develop expertise in how to assess and apply research findings effectively in clinical practice rather than 'actually doing research'.

The RAS scheme is administered and mentors serve in a voluntary capacity. There is no doubt that adequate resources to support the RAS coordinator and mentors could enhance the effectiveness of the RAS, but this does not necessarily mean mentors should be paid. Lewis (1996) suggests volunteers make the best mentors as long as they have the necessary expertise. Mentors need to be acknowledged and supported so they too benefit from being the role and continue to act as mentors (Dibert and Goldenberg, 1995). Schemes such as the RAS are resource-intensive and identifying, attracting and maintaining a suitable mentor pool has been difficult. A large ongoing mentor load and giving ad hoc advice falls to the RAS

coordinator, often to the detriment of her own research programme.

Almost anybody can be a mentor but a number of attributes have been identified and include:

- Management experience and knowledge of how the specific organisation functions. This attribute is particularly relevant to business and education mentors where the mentor can help the mentee negotiate the system and advance their careers.
- Professional standing and credibility. This is particularly important in areas such as research mentoring, especially if the aim is to apply for prestigious research grants.
- Being accessible and having time to perform the role. Having the ability to inspire others and encourage them to contribute, which is often achieved by establishing the mentee's learning style and working with it.
- An open mind and the ability to suggest different way to solve problems.
- The ability to actively listen, communicate, and put people at their ease.

Identifying what DNEs wanted in a mentor was an important consideration when developing the RAS. Personal and sensitive issues often arise in mentoring relationships and mentees need to be assured that their confidences and intellectual property will be respected. Respect for intellectual property and how to negotiate authorship of any publications is addressed in the RAS documentation sent to both parties at the beginning of the mentoring relationship.

Not surprisingly, DNEs want the mentor to be 'very available'. While it is important that the mentor is able to meet this need, they also need to put parameters around their time. Mentors identified mentee's unrealistic expectations of receiving feedback on the same day as being an issue. In addition, mentors indicated they contributed a great deal of their own intellectual property to any research project and subsequent presentations and publications and expected to be identified as authors in most instances, or at least acknowledged, depending on the extent of their contribution.

While the RAS was developed for a specific category of specialist nurses it is similar to other nursing mentoring processes (Pelletier

and Duffield 1994; Lo and Brown 2000). Although these early results are positive other unidentified factors besides the RAS might have contributed to the increased research output of the DNEs who participated in the scheme.

Challenges for RAS

The scheme relies on volunteer mentors. Identifying mentors with appropriate skills and the time to support and advise their colleagues remains a difficulty. Having adequate funds to support the scheme would partly address this issue. As yet there are few DNEs with the skills and capacity to act as mentors and other potential mentors, for example in universities, are already heavily committed with student supervision and academic roles and there may be no benefit to the university if they participate in the ADEA RAS. These difficulties highlight the need for succession planning to maintain and grow the mentor pool and emphasises the need to prepare leaders in diabetes evidence-based nursing who can help DNEs translate theory into practice and make appropriate policy decisions (Standing and Kramer, 2003).

The major challenges for DNEs who participate in the RAS, and want to undertake research projects, remains having the opportunity and support in their workplaces to integrate research into their clinical load, that is, designated research time, and obtaining funding to carry out research.

Conclusions

The RAS was successful in improving the research awareness and output of the ADEA members who participated but many projects remain centred on quality improvement and programme evaluation and the number of publications is still small and largely not peer-reviewed.

The interactive workshop was effective in explaining research as a logical process, linked to practice, and the ongoing mentoring aspect of the RAS encourages DNEs to participate in research activities in various capacities according to their capabilities.

Holding workshops in conjunction with national conferences increased the opportunity for members to attend and enabled participants to immediately use the information they learned.

The barriers to research for DNEs are not different from other areas of nursing. In both cases, lack of knowledge, resources, time and funds are the most important issues.

The RAS could be applied in other areas of nursing practice including undergraduate and postgraduate education programmes. The workshop information was reorganised into a series of seminars held monthly for 9 months where key aspects of the research process were presented at each seminar and implemented in St. Vincent's Hospital, Melbourne. Participants worked on the relevant aspect of the workshop between seminars and had an outline of a research project at the end of the series.

The sample is small and the results and the particular mentoring process may not be applicable in other settings. However, whilst the focus of this paper is Australian DNEs, encouraging clinical nurses to participate in research is a global issue. Schemes such as the one outlined in this article could be adapted to other settings. ■

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