

# Research and diabetes nursing. Part 1: Terms of engagement

Trisha Dunning

This article is the first in a six-part series addressing research and the DSN. The aim of the series is to assist DSNs in understanding research from a broad perspective, to help them critically read and understand research publications and develop research protocols, and assist potential authors to write well-constructed research articles. The article defines research, outlines the broad types of research engagement applicable to DSNs and the contribution the main types of research – quantitative, qualitative, audit and evaluation studies – make to evidence-based diabetes care. Some commonly cited barriers to DSNs participating in research are discussed. In addition, an holistic model of research that depicts the interrelated nature of the main types of research is presented.

*“A good scientist has freed himself of concepts and keeps his mind open to what is.”*  
(Lao Tzu)

Research plays an important role at all levels of modern clinical practice because of the focus on evidence-based health care; thus, all healthcare professionals have a responsibility to engage in research. Research is exciting and full of promise, but it is also frustrating and challenging. But what is research and how does it relate to the DSN’s clinical role? This article is the first in a six-part series designed to help DSNs understand “research” and how it relates to their role and scope of practice.

## Defining research

There are many definitions of research. Essentially, research involves seeking “the

truth” by trying to find answers to questions. Smith (1929 p24) stated:

*“Research involves continual re-examination of the doctrines and axioms upon which current thought and action are based. It is therefore critical of existing practices.”*

Although this is an old reference, it still applies today. It encompasses key aspects of research, such as that research is a systematic process of investigating and reinvestigating problems, and questioning existing practices that enable progress and innovation to occur (new truths to emerge). In the context of this series, “research” is used to refer to ways of knowing, practising in, and contributing to an environment of research awareness.

Research is not an optional extra for DSNs; it is a core component of their role, and might, in fact, be part of their duty of care. Therefore,

## Article points

1. Research is a systematic process of investigating and reinvestigating problems, and questioning existing practices that enable progress and innovation to occur.
2. Research occurs on an inclusive, interrelated cyclic continuum, rather than in a linear hierarchical structure that implies one method more valuable than another.
3. DSNs can demonstrate their role and the contribution they make to diabetes care through research (value-adding).
4. Research is more likely to occur in organisations that include research in their mission statements and in staff position descriptions.

## Key words

- Audit
- Evaluation
- Qualitative
- Quantitative
- Research

Trisha Dunning is Chair in Nursing, Deakin University and Barwon Health, The Geelong Hospital, Geelong, Victoria, Australia.

**Page points**

1. Research occurs on an inclusive, interrelated, cyclic continuum, rather than in a linear hierarchical structure that implies one method more valuable than another.
2. Research encompasses four broad categories of activities, which reflect levels of research competency and training.

to provide evidence-based care and be expert clinicians, DSNs need to understand and keep up-to-date with research findings – a daunting task in a rapidly changing field like diabetes.

In addition, research might contribute to the survival of many DSN positions. Hicks (2010) pointed out that research may be essential to “protect specialist nursing positions” in the face of budget cuts and not replacing staff who leave or retire – that is, to substantiate the value and benefit of DSNs. This might also apply in Australia where the Government is increasingly expecting general practitioners and practice nurses to provide diabetes care, and roles are changing rapidly. Likewise, evidence for the benefit of the role is relevant to all countries seeking to establish DSN positions.

Research occurs on an inclusive, interrelated, cyclic continuum, rather than in a linear hierarchical structure that implies one method

more valuable than another (Table 1, Figure 1). Research encompasses four broad categories of activities (Dunning, 2010), which reflect levels of research competency and training:

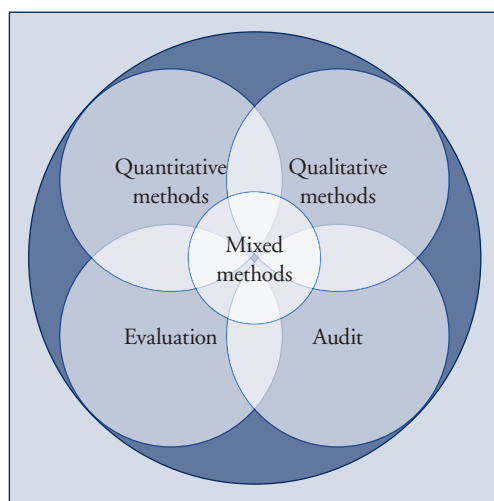
1. Being a discerning research consumer, which includes asking questions, reading research and understanding the research process and the contribution the different research methods make to clinical care to effectively critique research publications; that is, understanding what “good research” is (Table 2).
2. Applying relevant research findings in clinical care and education to achieve evidence-based care, including developing evidence-based policies and procedures and monitoring the outcome(s), which is part of the research cycle.
3. Participating in, responding to, or being a subject in research (depending on the data collection method).

**Table 1. The contribution that quantitative, qualitative, audit and evaluation research approaches make to clinical care\*.**

Quantitative	Qualitative	Audit and evaluation studies
Usually regarded as the highest level of evidence** (level 1), e.g. randomised controlled trial (RCT) and double blind RCT.	Usually regarded as the lowest form of evidence** (level 3 or 4), e.g. grounded theory, phenomenology.	Continuous process to determine the effectiveness of a service or programme** (level 3 or 4).
The “science” of practice.	The “art” of practice.	Benchmark to compare actual practice or care against a predetermined standard, other services, guidelines or previous performance.
<ul style="list-style-type: none"> <li>● Sets out to test an hypothesis or theory, identify causal relationships, demonstrate effectiveness, safety, and medicines dose, dose intervals and combination treatments.</li> <li>● Aims to generalise findings.</li> </ul>	<ul style="list-style-type: none"> <li>● Social inquiry that focuses on the way people interpret and make sense of their worlds and experiences.</li> <li>● May use information to generate theories that can be tested using other methods.</li> <li>● Aims to observe, explore, describe and understand.</li> <li>● Helps determine how/whether the person is likely use the treatment or product.</li> </ul>	<ul style="list-style-type: none"> <li>● Improves management and service delivery processes.</li> <li>● Can be used once qualitative and/or quantitative research findings are integrated into practice.</li> </ul>
Findings can usually be generalised outside the study population.	Findings may not apply outside the study population but may be transferable if the study is rigorous and has methodological integrity and demonstrates cumulative evidence.	<ul style="list-style-type: none"> <li>● Demonstrates the need for services.</li> <li>● Demonstrates performance.</li> <li>● Identifies care deficits or issues that enhance or are barriers to optimal care.</li> </ul>
Drives modern diabetes education and management and is the preferred basis for developing clinical practice guidelines.		Monitors research findings once they are implemented in clinical care, a key part of the research cycle.

\*Quantitative studies focus on control to achieve rigor. Qualitative studies seek to understand the individual’s lived experience and achieve rigor differently. Qualitative studies provide important information about how to provide personalised, holistic, person-centred care, and can illustrate the complexity involved in delivering health care. \*\*Levels of evidence derived from the National Health and Medical Research Council (1999).

*Figure 1. Holistic conceptual model of the research continuum. Each research method is complete in itself, but often overlaps with other methods. The overlapping circles demonstrate the interrelated nature of the various research methods and signify that research is a continuous process. They also indicate that all research is valuable, but contributes different information to clinical care (see Table 1). Thus, there is not a research hierarchy. Some studies use a combination of methods; these studies are known as triangulated methods or mixed method studies.*



4. Leading research teams to undertake and/ or collaborate in research to generate data that can be applied in care, or to evaluate the outcome of, or impact on, care. This level encompasses training and mentoring beginning researchers.

These activities suggest that various levels of knowledge and competency are required to engage in the various research activities. DSNs can use this framework to determine their current level of research engagement and plan professional development activities to enhance their research skills, which will ultimately enhance their clinical practice.

### Research and the DSN

DSNs can demonstrate their role and the contribution they make to diabetes care through research (value-adding). However, many DSNs view themselves as clinicians rather than

researchers, may have a narrow view of research, and find it difficult to balance the competing requirements – such as balancing employer expectations that they deliver care and education, with engaging in research activities. Significantly, many DSNs (like other healthcare professionals) do not consider themselves to be researchers and face common barriers to participating in research. Such “barriers to research” are well documented and have been demonstrated in all healthcare professional groups (Funk et al, 1991; Happell et al, 2003; Dunning, 2006; Table 3). However, most of these barriers appear to concern “doing research” rather than encompassing the broader perspective of research outlined in this article.

DSNs are often required to explain research findings to people with diabetes and their significant others, as well as their healthcare professional colleagues. Thus, research, like the DSN, is a change agent. DSNs are the interface between diabetes research and clinical practice. The DSN–research partnership represents a powerful change agent. In addition, people with diabetes are becoming active and discerning research consumers. They expect their care to be evidence-based, ask questions about research reported in the media and what the findings mean to them. They like regular research updates and to have the opportunity to participate in research trials (Diabetes Australia Victoria, 2004).

Employers and other organisations value research because it can help them reduce the likelihood of litigation, market their organisation, meet accreditation standards, benchmark care, justify costs, and develop policies and procedures as part of organisational risk management strategies. On that basis, organisations have a responsibility to provide support and infrastructure that enables healthcare professionals to engage in research. Significantly, research is more likely to occur in organisations that include research in their mission statements and in staff position descriptions (Happell et al, 2003).

Employing organisations could help address some of the barriers to research by actively supporting clinicians’ research endeavour, for

Table 2. Core components of “good research”. These components are relevant to all types of methodologies.
<ul style="list-style-type: none"> <li>● Gives information about the context of the study (background, literature review, contextual framework).</li> <li>● Clearly articulates the research question/study aims/hypothesis. There may be more than one.</li> <li>● Uses an appropriate method or methods to answer the question or questions.</li> <li>● Ensures rigor by appropriately controlling bias. Methods of controlling bias need to be relevant to the method or methods.</li> <li>● Accurately reports the findings and makes conclusions relevant to the research question or questions.</li> <li>● Is conducted according to ethical principles.</li> <li>● Is accurately reported.</li> </ul>

***“Different research methods contribute different information to clinical practice. The methods are complete in themselves but are part of an interrelated “research continuum” rather than a hierarchical structure.”***

example enabling clinicians to allocate specific time to undertake research activities and recognising and rewarding research efforts. That is, provide the infrastructure to engender research awareness and develop a workforce that actively engages in research to ensure care is delivered in a proactive, dynamic, evidence-based environment.

In turn, DSNs have a responsibility to:

- Participate in research at the level of their knowledge and competency.
- View themselves as being engaged research consumers and include developing their research capacity as part of their continuing professional development (CPD) programme.
- Consider research from a broad perspective that encompasses reading, using, and participating in other people’s research as well as developing and managing their own research programmes.
- Be able to critically review research publications and understand the different contributions that quantitative, qualitative, and audit and evaluation studies make to clinical care (Table 1).
- Understand how marketing forces use research findings to promote and sell products.
- Be able to explain research to individuals with diabetes and their families, which is a key aspect of person-centred, evidence-based care.

- Use appropriate and valid methods and tools to audit and/or evaluate the services they provide.
- Find ways to participate in research within their capacity to change practice rather than focusing on the barriers. Barriers such as lack of knowledge and competency can be changed through CPD activities.
- Current diabetes educator researchers have a responsibility to promote and mentor future researchers to build research capacity and sustainability.

### Conclusion

Reflection is essential to good clinical practice; it is also part of research engagement and is vital to learning. Different research methods contribute different information to clinical practice. The methods are complete in themselves but are part of an interrelated “research continuum” rather than a hierarchical structure. This article, and the series of articles that follow in future issues of the journal, will focus on the critical appraisal process and will help readers reflect on their role in and contribution to research. ■

**Table 3. Some barriers to diabetes educators undertaking research\*.**

- Insufficient time due to clinical load.
- Insufficient resources such as funding, infrastructure and access to a statistician.
- Insufficient knowledge and skills.
- Ethics processes.
- Difficulty accessing research mentors.
- “Silo” mentality and narrow view of research as “doing” research.
- Lack of organisational and/or employer support.
- Short-term contracts to collect data in other people’s research projects and often do not feel part of the team.
- Research efforts not recognised or rewarded.

\* These barriers are not specific to diabetes educators. Some are difficult for individual clinicians to change; others can be overcome if clinicians adopt a proactive approach to seeking research opportunities and developing the relevant skills.

Diabetes Australia Victoria (2004) National Diabetes Supply Scheme survey. *Conquest* (Autumn)

Dunning T (2006) Diabetes educators’ self-reported experiences, skills and attitudes towards research. *Journal of Diabetes Nursing* **10**: 309–16

Dunning T (2010) Research and the diabetes educator: A critical component of evidence-based care. Presented at: *8th IDF Western Pacific Region Conference*, Busan, Korea, October 17–20

Funk G, Champagne M, Weiss R, Tornquist E (1991) Barriers to using research in findings in practice: the clinician’s perspective. *Appl Nurs Res* **4**: 90–5

Happell B, Johnston L, Pinikahana J (2003) Nursing research in Victoria: A snapshot of current policy. *Aust J Adv Nurs* **20**: 8–14

Hicks D (2010) Proving our worth in specialist nursing. *Journal of Diabetes Nursing* **14**: 164

Lao Tzu (1999) *Tao Te Ching: An Illustrated Journey*. Translated by Stephen Mitchell. Frances Lincoln Ltd, London

National Health and Medical Research Council (1999) *A Guide to the Development, Evaluation and Implementation of Clinical Practice Guidelines*; NHMRC, Canberra, Australia

Smith T (1929) The influence of research in bringing into closer relationship the practice of medicine and public health activities. *Am J Med Sci* **178**: 741