A bright future for dietitians—where is the evidence?

Lynne A. Daniels

Abstract  This paper was first presented as the Lecture in Honour of Ms Una Venn-Brown, Dietitians Association of Australia Oration for 2001, at the 20th National Dietitians Association of Australia (DAA) Conference in May 2001 to pay tribute to the outstanding career of Ms Una Venn-Brown. The aims are to consider why dietitians need to build research capacity and participation, to review current attitudes to, and levels and scope of, dietetic research activities, to explore potential gains and barriers, and to suggest strategies for progress. Dietetic research is an ongoing process, rather than a discrete activity. It encompasses a state of mind, an approach to practice that is about constantly asking questions, evaluating what is already being done and looking for better ways to operate. It ranges from using a scientific approach to practice and implementing current research findings in practice, through to leadership in the development and implementation of research studies. Building research capacity and participation is a professional obligation of ethical and quality practice. Evidence of effectiveness and capacity to make a difference is critical in the face of budgetary constraints. Limited evidence suggests that although many dietitians perceive professional and personal gains from research and would like to participate, participation rates are low, publication and presentation rates are even lower and research has not been widely integrated into practice. There is a range of environmental obstacles and internal barriers to participation of dietitians in research including resources (time and funding), knowledge and skills, confidence and the perfectionist streak. An active, visible and growing research profile is essential if dietetics is to be a credible, viable and competitive discipline. Other potential gains include better quality practice, more confident and proactive practitioners, enhanced professional vitality and satisfaction, a stake in the knowledge that guides current and future practice, additional resources, improved accountability to service providers and our clients and the public and new and rewarding collaborations. The future for dietetics depends on the evidence. (Nutr Diet 2002;59:29–37)

Key words: practice-based research, strategies, barriers, evidence-based practice

Introduction

This paper was presented as the Lecture in Honour, Dietitians Association of Australia Oration for 2001, at the 20th National Dietitians Association of Australia (DAA) Conference in May 2001 to pay tribute to the outstanding career of Ms Una Venn-Brown. The conference theme was ‘Reflections and New Horizons’. If dietetics is to seek and face the challenges of new horizons there is an imperative to build the capacity and participation of dietitians in research. The intention of this paper is to be provocative, a stance with which Ms Una Venn-Brown was clearly familiar. Una Venn-Brown, throughout her 50-year career, determinedly sought to change the opinion and practice of both the profession and the public on the basis of the evidence. Her contribution to metrification in Australia and her success in changing the public and professional image of bread are examples. Ms Venn-Brown was one of the first Australian dietitians to work in the food industry and in the 1950s made a television advertisement for the controversial new product, table margarine (1,2). In her retrospective article (3) she recounts how this resulted in her being threatened with expulsion from the Dietetic Association. Clearly a woman who can just avoid expulsion from an organisation and then progress to a four-year term as national president and be awarded life membership merits the recognition of the 2001 Lecture in Honour.

The aims of this paper are to consider why dietitians need to build research capacity and participation, to review current attitudes to, and levels and scope of, dietetic research activities, to explore potential gains and barriers and to suggest strategies for progress.

What does dietetic research encompass?

Dietitians’ research activities have been described (4,5) as a continuum with four stages:

• using a scientific approach to practice;
• collaborating to translate research finding into practice and/or to publish;
• conducting and assessing research studies; and,
• taking a leadership role in developing and implementing research.

Thus research encompasses a range of activities. Research includes reading and understanding the literature (clinical guidelines and standards of care, Cochrane systematic reviews, meta-analysis and clinical trials, and major reviews), thinking about the validity and strength of the evidence, talking to colleagues about what the evidence means to practice and how practice might be evaluated in the light of the evidence. Research includes systematic collection and documentation of information and problem-solving in everyday practice, but goes beyond quality management activities. Research means reflecting on and documenting effectiveness and, just as importantly, ineffectiveness, then modifying practice according to the evidence. Dissemination through presentations, posters and formal publication is an important but frequently neglected aspect of the research process.

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Correspondence: L. Daniels, Department Public Health, Flinders Medical Centre, Bedford Park, South Australia, 5042. Email: lynne.daniels@flinders.edu.au

Although not all practitioners will be active at all levels of the continuum, it is important to understand that activities at the first two levels underpin not only research at the upper levels of the continuum, but also quality practice. The important issue is that most practitioners are at some point on the continuum and integrating practice and research in a way that simultaneously moves them along the research continuum and strengthens their practice. Research embraces a state of mind; an approach to practice that is about constantly asking questions, evaluating what is already being done and looking for better ways to operate. It is an ongoing process rather than a discrete activity.

**Why must dietitians build research capacity and participation?**

**Our mission: to lead, and to be nutrition experts**

The mission of DAA (6) highlights our leadership aspirations to be experts in nutrition and dietetics. Dietitians lay claim to this role on a foundation of evidence-based practice. However, without credible research to support and justify our practice we are defenseless to the sceptics (7) and no better than charlatans. Without research, dietitians are doomed to follow rather than lead (8).

**Our professional obligation: Code of Professional Conduct**

Dietitians are bound by a Code of Professional Conduct (9), which obliges us to:

- continually evaluate and refine our service based on outcomes;
- support the applications of research findings to professional practice;
- participate in or generate research to enhance knowledge; and,
- evaluate the professional standards and contribute to the advancement of the dietetic profession.

The new constitution (10) lists as a specific objective to ‘foster evidence-based practice for nutrition and dietetics’. The DAA entry-level competency statements (11) also highlight research skills as important for new graduates. These skills do not become less important with practice experience, although there is no doubt they become less accessible without practice. Research is a non-negotiable component of ethical and quality practice.

**What are the current attitudes to, and scope of, dietetic research activities?**

Generally, research has not been widely integrated into dietetic practice, particularly in the clinical setting. There are no published Australian data describing dietitians’ attitudes to, and participation in, research and the surprisingly few North American studies (12–15), mostly refer to clinical dietitians. Two well designed Canadian studies (4,16) with relatively large samples, published a decade apart (1990 and 2000) are relevant to the Australian setting.

A 1990 study (16) reports a mailed questionnaire survey investigating attitudes to research of all non-retired members of the British Columbian Dietetic Association. The large, representative sample (90% response rate, 426 respondents), use of a well designed and validated questionnaire, and a sophisticated and thorough analysis of the data all lend credibility to the results. The more recent study (4) explored attitudes and self-perceived competence to participate in research of 122 clinical dietitians (75% response rate) using a questionnaire administered during scheduled dietetic department meetings. Given that the participants were employed in teaching hospitals, selection bias towards more professionally active practitioners with more research opportunities is likely to over estimate the overall level of research interest and activity.

**What do dietitians think about research?**

The more recent study (4) reports overall broad agreement (> 80%) that:

- nutrition and dietetic research is necessary to increase credibility;
- current practice needs questioning;
- research is an important activity; and
- standards of care should be based on research findings.

Although the majority (84%) of respondents saw research as an opportunity for professional and personal growth and development, only two-thirds (64%) indicated that research was a challenge they would like to pursue and only half (52%) of the participants were interested in conducting their own research projects.

The 1990 study (16) reports that at least three-quarters of respondents ‘agreed’ or ‘strongly agreed’ that research increases credibility (78%), has direct impact on patient care (88%) and contributes to individual professional performance (75%). Two-thirds perceived research as interesting and challenging and wanted to be involved, but only 38% indicated they were willing to spend their own time in research activities. The authors concluded that respondents were more positive about the value of research to the profession than to themselves as individual practitioners. They also commented that the figure of 38% of dietitians willing to spend personal time on research was a more reasonable estimate of real interest and desire to participate in research.

**What research are dietitians doing?**

The 2000 study (4) reported that the most common research activities were taking a statistics course (79%) and evaluating a program, service or practice in the workplace (66%). While 53% of dietitians had assisted in a research project led by others, only 36% had presented at a professional meeting and 11% had published a paper. Thirty per cent had ‘provided advice for but not participated in others’ projects, in contrast to 21% and 13% who reported they had conducted their own project and/or had applied for funding, respectively. Based on the number of activities in which subjects reported they had participated, the mean activity score was 4.7 from a possible maximum of 14 (4). These data suggest that although Canadian clinical dietitians are apparently evaluating their practice, and to some degree helping others with their research, they are not presently or publishing this work and not taking a leadership role in study design or funding proposals. A 1996 review (13) of authorship of research papers in the...
Journal of The American Dietetic Association and the Journal of Parenteral and Enteral Nutrition, reported that less than 11% and 2% respectively, of first authors were clinical dietitians. Even in the Journal of The American Dietetic Association, 68% of co-authors were non-dietitians and in the Journal of Parenteral and Enteral Nutrition this figure was 94%. Less than 15% of papers described practice-based outcome studies.

In summary, although many dietitians perceive professional and personal gains from research and would like to participate, participation rates are low, publication and presentation rates are even lower and dietitians who are participating are more likely to be ‘helpers’ than leaders. Research has not been widely integrated into practice and for many it remains an optional extra rather than central to the dietitian’s role.

What are the barriers to participation in research?

Even though dietitians believe research is important and can perhaps see the benefits, why are participation rates low? There is a range of potential barriers including environmental obstacles such as time and funding and, perhaps even more importantly, internal barriers such as confidence and skills.

Resources—time and funding

It is no surprise that the majority of respondents (82%) identified the demands of patient care as a barrier to participation in research. However, only 35% of participants agreed that lack of funding, which can potentially buy time, prevented their participation (4). Other studies (12,13) confirm lack of time within a busy workload as an obstacle.

Knowledge and skills

The discussion above indicates that the research experience of many dietitians, particularly at the third and fourth stages of the continuum is limited, and this is likely to impact on knowledge and skills. Approximately 80% of Canadian dietitians agreed that they could develop a relevant research question that would be of interest to others (79%) and were confident about asking for help (81%) and having others critique their work (83%). On the other hand, about half indicated they were not confident in their research skills (46%) or capacity to write a paper for publication (48%) and a similar proportion felt they did not know where to start (40%). With respect to knowledge, only a third felt they knew enough about study design and could write a proposal (31%), while half (46%) indicated they did not know where to get assistance (4).

Confidence and self-esteem

It is possible that many of the negative responses to the research agenda stem from limited confidence. Evidence suggests that dietitians have a low comfort level with initiating and undertaking research (12). There is no doubt that the learning curve is formidable. Research is, by definition, about unknowns and is intensely applied. The research process can effectively be learnt only through experience. The confidence that is gained through experience stems, not from knowing how to do the next project, but more from being able to apply previous know-how in a new context. The Canadian study (4) concluded that the most powerful barriers to research participation were internal—lack of self-confidence and worthiness.

The perfectionist streak

The perfectionist streak is alive and well in dietetics and in some respects it serves the profession well. However, it becomes a barrier if individuals avoid participation out of fear of imperfection, failure or potential criticism (12). The fundamental basis of research is that ideas are challenged, current approaches contested and questions asked. Research is a process, not a product, and no research study is perfect. It is not necessary to answer all the questions; just one good one is sufficient. All good research raises more questions than it answers.

That is not to say that the quality of the research is unimportant. As in all areas of dietetics, best practice involves constantly reflecting on, and seeking feedback on, performance and modifying practice accordingly. However, rigour does not require perfection and research, by its very nature, is uncertain, full of unknowns and controversial.

What are the potential gains for dietitians participating in research?

Credible and competitive individuals and discipline

Dietetics must have an active, visible and growing research base in order to be credible, viable and competitive as a discipline (17). This has become critically important under the current evidenced-based practice paradigm. Active and rigorous research is, in turn, an important pathway to gaining respect and status. This is increasingly important with growing specialisation and technological progress (17). There is no doubt that dietetic research raises the profile of dietetic care and that the frequency, depth and scope of our contribution is increased.

Confidence and self-esteem

Once of the necessities of research is getting to know the literature. Being familiar with, and able to cite, the literature boosts confidence and facilitates assertive participation in team decisions about care or programs. Access to data and evidence from the literature empowers practitioners to become more proactive and effective in advocating for dietetic care. It is not necessary to have read everything on the subject, rather focus on a few key and recent papers. It is important to develop search skills and invest in journal clubs and other strategies to share the challenge of keeping abreast of literature. It quickly becomes apparent that the quality of published papers is highly variable and that a simple idea with surprisingly little data can get published. From increased confidence flows increased willingness and capacity to reflect on personal and collective performance, to consider and embrace change, to take risks and to move out of the comfort zone.

Professional fulfilment and vitality

Research has the capacity to sustain our intellectual curiosity and vitality (7). It is my contention that there is a
pervasive malaise amongst some dietitians that arises from boredom. It is possible to be at once very busy and fundamentally bored. Dietitians with great potential are being lost to the profession, either physically or metaphorically, as they become bored, frustrated and disillusioned with the routine reality of everyday practice (7). Within a few short years new graduates have generally mastered the basic skills of everyday practice. The dietetic career structure is limited, particularly for those with little interest in management. It can be argued that there is a level of personal complacency and work place comfort that prevents individuals reaching their potential. This may engender an insidious, vicious cycle of boredom, malaise, martyrdom, negativity and sub-optimal performance. The outcomes may be a sense of being overwhelmed and helpless, acceptance of the status quo and an inability to initiate or participate in change. These problems frequently masquerade under ‘cover-all’ excuses such as ‘there is no time’, ‘I am too busy’, or ‘we simply don’t have the resources’. The power of these mantras is their element of truth, but the real irony is that the resource issues are unlikely to improve and may indeed worsen if we just continue doing what we are doing.

Judith Dodd (1999) in a paper in the Journal of The American Dietetic Association ‘Look before you leap—but do leap’ (18) urges dietitians to ‘refresh, retire or die’. She asserts that begrudgingly accepting the status quo is death both professionally and personally. Research is an ideal way to refresh. Research can provide the challenge and intellectual stimulus to keep nutrition and dietetics alive and dynamic within the context of everyday practice. It is potentially a powerful antidote to boredom and a route to enhanced job satisfaction. With research there is the potential to have excitement, enthusiasm and hard work, instead of just hard work (19). Building research capacity of dietitians is an important strategy for energising and enhancing professional fulfilment and performance, both individually and collectively.

Influence over the direction of our practice and profession

It has been said that research is the backbone of the dietetic profession (20). If dietetics aspires to be a discipline, a body of knowledge unique to dietetics that defines our role and future direction is required. Without an adequate research base dietetics is not a legitimate discipline and there is no foundation for present and future practice (16). Dietitians must have the skills and confidence to define and defend the science that underpins dietetic knowledge and practice.

Dietetic care is rarely provided in isolation of other health care. Clinical guidelines for care of a range of conditions that are the core of dietetic practice are constantly being developed and revised. If dietitians do not participate actively, confidently and credibly in this process, supported by sound discipline-based evidence, the dietetic aspects of care will be neglected (8). If dietitians are not able to argue for and justify dietetic care it simply will not be included.

Only dietitians know the real issues in implementing nutritional care in the practice setting that are central to tangible, client-focused outcomes (12,13). Dietitians have the capacity to ask and answer the questions that translate biochemistry and physiology into the actualities of food and nutrition (8) and that are so central and unique to dietetic practice. However, practising dietitians are not taking or making opportunities to be involved in research and have limited input into much of the current nutrition research. Dietitians must develop the research methodologies and evidence and, hence, influence and control the knowledge that is guiding current and future dietetic practice (4). Not only are there no others who have the training and experience to do this for us, they are all too busy doing it for themselves.

Better practice—research enhances the acceptance of new knowledge

Research heightens critical faculties and enhances the uptake of new knowledge and, hence, is fundamental to quality nutrition care and practice (17). Typically, practitioners are reluctant and slow to accept and apply new knowledge. Outcomes-based research strengthens the vital practice-research link, reduces the time lag in the application of new knowledge, and improves the quality of practice (8).

To ensure best practice practitioners must do more that simply keep up-to-date. They must exercise critical judgement to ensure that practice is based on quality evidence. It is necessary to do more than simply rely on the research work of others, which will rarely have quite the right focus and emphasis. It is a long established and fundamental tenet of high quality health care that teaching, research and practice are inextricably linked.

Additional sources of funding

Research funding is one of the very few opportunities for additional resources available in the current health care environment. Service demands in the more under resourced and under serviced areas can potentially be packaged into funding applications and research opportunities.

Accountability to the service providers and our clients and public

Dietitians, like all other health professionals, are under continuing pressure to demonstrate effectiveness and efficiency. Application of research to practice at an individual service level has become critical. Questions of effectiveness must be asked and answered in the political and organisational context in which they occur. The requirement for most clinical dietetic care is generally ancillary and secondary to another condition. In these times, when the predominant political and organisational driving themes are cost-cutting guised in terms of cost-effectiveness, it is the secondary support modalities that will be primary targets for reduction, if not elimination (21). Health economists (22) have identified three criteria to critically assess proposed treatments or interventions:

- convincing evidence that compared with no treatment, the treatment is effective in improving health outcomes;
- any beneficial effects should outweigh any negative impact on health outcomes; and,
- compared with the next best alternative, the treatment should represent good use of resources.
Eddy (1994) (22) also asserts that the ‘burden of proof’ lies with those who promote the treatment. Interventions should be guilty until proven innocent. For too few areas of dietetic practice is there convincing evidence that the dietetic intervention is both effective and efficient in improving health outcomes. Motherhood statements and enthusiastic, earnest assertions about the importance of nutrition are not enough. In a six-point rating system to evaluate the strength of evidence, meta-analysis of randomised controlled trials and at least one such trial are the top two levels, while expert opinion is valued least (22). Expert dietetic opinion is not enough and the ‘burden of proof’ for dietetic care lies with dietitians themselves.

New collaborations

Good research relies on collaboration and teamwork, which are in turn some of the rewards. Productive collaborations can grow from very humble beginnings. In early 1999, the Nutrition Unit at Flinders University initiated an opportunity to ‘value add’ to an existing prospective audit of a 12-month, consecutive sample of patients with hip fracture admitted to Flinders Medical Centre. This involved a case note review of 183 patients to document pre-operative serum albumin concentrations, total lymphocyte count, referral for dietetic care, calcium supplementation, vitamin D status and bone density. These straightforward frequency data (23) provided simple but clear evidence that current practice did not meet established clinical guidelines and, most importantly, it gained the attention of the clinicians. From this simple and imperfect audit data, an ongoing productive and growing collaboration has developed.

Strategies

Even if there is clear consensus on the value of research and the belief that it must be integrated into practice, how can dietitians’ capacity for and participation in research be enhanced?

Get research on the agenda

In the Canadian study (4) discussed previously, only 21% of respondents reported that dietetic research was a common topic in the workplace. Traditionally, practice and research in dietetics have not been closely linked and, regardless of cultural resistance, this mind-set must be changed (24). Practice abounds with researchable trends and issues arising from personal experience with clients, staff meetings, professional development activities and team conferences (17). Practitioners must be willing to acknowledge and discuss the questions, uncertainties and problems of everyday practice (12). Collaboration and sharing of ideas begin within work groups and departments.

Make research a priority

Finding time for research in the context of a busy service delivery workload is not a new problem. Indeed, in 1939 Morgan (25) suggested that research should start with an analysis of the work routine to identify efficiencies to enable participation in research. It is essential to evaluate work practice very carefully, to establish priorities and perhaps to relinquish some current tasks or roles. It is challenging to even contemplate giving up tasks that are:

1. comfortable and well within the bounds of confidence;
2. that conform with the current culture and perceptions of dietetic practice;
3. that are well received and valued by medical and other staff, even if in part because they are consistent with the respective roles these staff envisage for dietitians and themselves;
4. that directly contribute to nurturing and feeding; and
5. that patients appear to value and appreciate. For many practitioners professional reputation makes a considerable contribution to self-esteem. Given the gender demographics of dietetics, socialisation to please and nurture may be particularly influential in the choice and maintenance of professional roles and relationships. The central question is whether all the everyday tasks of dietetic practice are essential and what broader professional outcomes or contribution the tasks or roles are fulfilling. It is challenging to reorientate practice to incorporate new activities that may be beyond the confines of current confidence and skills, that are likely to require considerable professional development, that may attract criticism from colleagues and that, at least to begin with, may be less intrinsically rewarding or enjoyable.

The potential gains of making research a priority require an investment of both professional and personal energy and time (12). A ‘nine-to-five’ mentality does not facilitate excellence in any area of practice, including research.

Build research knowledge and skills

Building research skills is a priority strategy for enhancing research participation by dietitians (12,13,24). The recent Canadian Study (4) suggests that knowledge of study design and writing proposals is important, but so is knowing where and how to access assistance.

Statistics knowledge and skills

It is interesting that, although 79% of the respondents had completed a statistics course, only a small minority (13%) indicated that they knew how to use statistics (4). Statistics is a ‘need to know and do’ activity and statistical knowledge in abstract is difficult to learn, impossible to retain and very difficult to apply in practice. The use of statistical packages and the wider availability of statistical advice have the potential to overcome this barrier. Statistical skills alone do not necessarily equate to research skills and do not ensure an integrated approach to research (17). Certainly, it is helpful to understand the broad approaches to and principles of data analyses, but fledgling researchers who wait until they are confident they can understand and do the all the statistics will not progress beyond the statistics course. Access to statisticians is relatively easy through teaching hospitals, universities including academic nutrition departments, and other affiliated organisations. Partnerships that will facilitate access to this expertise and a willingness to learn are imperative. In general, knowledge of statistics is much less important than knowledge and skills in research methods, such as critical literature review, generation of questions and hypotheses, study design and writing proposals. It is interesting that only 39% of those in the Canadian study (4) had completed a course in research methods. Yet, a sound understanding of research methods is essential for evaluating the literature and applying evidence to practice, and hence is important for all dietitians, regardless of their
current or desired position on the research continuum discussed earlier.

**Student education**

Clearly, student education is critical, but it is not the entire answer. Training students to value research and equipping them with entry-level skills only leads to frustration and disillusionment if the practice environment does not go on to support and facilitate research and provide opportunities for them to refine and extend their skills. Student research training requires a sustainable supply of suitable projects and experienced researchers to supervise them and hence, to some degree, it is determined by the overall level of research activity in the profession. Academic nutrition units can accommodate some, but not all, student requirements. Apart from the limitations of staff and space, students need 1. a wide range of research areas from which to choose according to their interests, 2. exposure to research within the context of practice rather than in the academic setting and 3. role models active in practice and research.

**Professional development**

Innovative and flexible ways to develop the research skills of current practitioners are a key issue. The innovations in the use of technology for education offer the means to provide research skill development through a range of delivery modes, including the Internet. However, development of web-based programs is resource intensive and often not viable for a very small market. DAA would require very significant uptake by members willing to commit time and money at both a personal and professional level to justify the investment in web-based research training.

**Research higher degrees**

Completing a research degree builds in-depth skills and confidence for recent graduates and experienced practitioners in a way that ad hoc participation can rarely do. Like any good research, a higher degree requires commitment, discipline and rigour. However, enrolment in a research degree also provides a structure, an incentive, supervision, support and feedback in a context in which it is acceptable to be undertaking research while at the same time developing content knowledge, research skills and confidence. It also provides the basis for a collaboration in which it is perfectly acceptable for a relatively inexperienced researcher to be a junior partner but with a clearly defined level of project ownership. There is also no doubt that a research degree adds to credibility and track record, both of which are critical in developing research collaborations and partnerships. The education system has undergone significant changes over the last decade and flexible enrolment arrangements are generally available. Another important change is the growing number of dietitians appropriately qualified and able to supervise and provide access to applied, practice-based and highly relevant research topic options.

**Management support**

The role of dietetic managers is critical in building research capacity. Despite the strong agreement that research is important to dietetic practice, only 31% of dietitians in the Canadian study (4) thought research should be part of the job description. Just as research is an expected and accepted role for medical practitioners and, increasingly, nurses, dietitians must include research in position descriptions, particularly for senior positions, and performance appraisal systems, strategic and business plans.

Dietetic managers have a responsibility to facilitate research within their departments. They need to begin with and nurture those who show potential and interest and find ways of rewarding members who are active in research with recognition both within and outside the Department. Outcome-based incentives such as quarantined time, conference attendance, professional development opportunities and refunding course fees on successful completion are important. Interesting specialist areas of practice could be allocated according to the quality of a relevant research proposal and demonstrated achievement of outcomes. Staff secondment to research projects should be actively encouraged. Experienced staff should be able to access research opportunities, even if the funding would only allow backfill of their position at lesser time fraction or with someone of lesser experience. It may be necessary to restructure and reorganise staff and even consider short-term reductions in service. Strategies to capitalise on and optimise a seconded staff member’s increased skill, experience and enthusiasm once they return to the department are essential. Most importantly dietetic managers need to provide leadership through personal involvement.

Dietetic managers must also ‘manage up’ and advocate with senior management and in broader organisational forums for research as a legitimate core activity for allied health staff. Typically, research funding within organisations is allocated competitively according to criteria that rest primarily on track record. A form of research affirmative action in the distribution of a proportion of research resources within organisations may be justified. The aim is to develop staff research skills and experience to an externally competitive level. It is important to publicise departmental research achievements and activities. Senior management, including the director of allied health is unlikely to be reading the dietetic literature. Dietitians cannot afford to patiently hope and wait for recognition and an invitation to participate.

**Become collaborators rather than helpers**

Good research is fundamentally a collaborative activity and there are a range of organisational, administrative and funding structures that encourage, and indeed force, anyone interested in seriously participating in quality, funded research to collaborate. Unfortunately, the research experience of many dietitians is limited to providing ad hoc advice at the grant writing stage or seeing a few study participants during a research project.

**What dietitians bring to research**

Dietitians are generally good collaborators. Even an inexperienced dietitian has developed skills in gaining cooperation from nursing, medical and food service staff in the interest of nutritional care for their patients. Dwyer (1997) (8) has described a number of unique things that dietitians bring to research. These include:

- extensive knowledge of food;
• understanding of the complexity and inter-relatedness of dietary components;
• experience in the practicalities of what people will and will not eat and getting people to eat;
• logistical knowledge of getting safe, hygienic and tasty food to groups of people;
• reality checks for studies that involve experimental diets;
• familiarity with the co-investigator role—good at sharing the limelight; and,
• understanding of behavioural and social sciences.

Dietitians must be assertive and stake a claim in research activities. Issues around investigator status and authorship exist at all levels and can be unpleasant, but dietitians must discuss these matters openly, assertively and confidently. Most investigators will use free labour if it is able. Dietitians must trade time and contributions for a share of the funding and/or authorship. The value of clinical skills and access to patients or clients to nutrition science colleagues should not be underestimated and must be marketed with confidence. It may be helpful to discuss these issues with experienced colleagues and seek their support and suggestions for tactics and approaches. It is vital we overcome any gender-based tendency to wait patiently for recognition and an invitation to contribute.

The potential of ‘value-adding’

The potential to ‘value-add’ to larger studies, both in the design and data analysis phases, presents important research opportunities. Recruitment, consenting and access to subjects are a major part of the effort in implementing any study. It may be there are some additional data that can be collected and written up at small marginal cost and effort. Rarely are all the data from studies analysed and published. Often in larger studies there will be little interest in the dietary intake or nutrition status data beyond the relationship to the primary outcomes or role as an adherence measure. It may be possible to negotiate access to these data for alternative purposes. Even data that are being written up by the primary investigators for medical journals can be analysed and presented with a different emphasis, approach and level of detail that is relevant and interesting for a dietetic journal.

The nature of collaboration

The alternative side of productive collaboration is willingness to share one’s own ideas and research with others, including more junior dietetic colleagues. A novel idea or some good data do not of themselves make a successful research project. Good design, thoughtful analysis, insightful interpretation, clear and concise writing and peer review are all critical. Authorship and investigator status are the currency of research. There are clear guidelines on these issues but they are frequently fraught and complex. Dietitians must be assertive, fair, generous and very strategic in collaborative activities.

There are numerous options for collaborations—with fellow department members, dietitians in similar roles at other sites or in completely different roles, other health care team members, including medical and other allied health staff, nutrition scientists and researchers from other disciplines such as behavioural sciences or epidemiology. It is relatively simple to collaborate with like-minded people with whom it is possible to establish easy and comfortable personal relationships. However, it is important to take a strategic view. Differences in experience, perspective and approach and the capacity and willingness to engage in full and frank discussions support creative and strong research. Track record, complementary skills and the capacity to attract funding are crucial, as are conflict resolution skills, openness, reliability, flexibility, energy, enthusiasm and the ability and willingness to provide and accept honest and constructive feedback. Effective collaborators must not only seek but also provide similar attributes.

Partnerships between research and practising dietitians

There is an increasing number of dietitians with research qualifications and experience now employed in academic departments and/or research organisations. Collaboration and mentor relationships between academic and research dietitians and practitioners have been identified as important strategies to enhance research capacity and profile at both the individual and professional level (4,12,13,24,26).

In terms of outcomes-based research, practitioners offer 1. the practice-based questions, 2. the participants or the process or programs to be evaluated, 3. the site for data collection, 4. current practice skills and expertise and, most importantly, 5. the capacity to implement research findings to improve service delivery and demonstrate effectiveness.

Academic and research dietitians can assist with design, funding proposals and analysis and writing for publication. They work in a competitive research environment and have some insights into the research funding system. They generally have access to experienced grant writers, reviewers and researchers and professional development, and infrastructure to support applications for funding.

Academic dietitians also have responsibility for students. Strategic investment in student research projects can reap benefits for both parties. Even if the study does not merit publication, it can provide invaluable pilot data, experience with methods and approaches, important information on recruitment patterns and rates, a list of up-to-date references, including web sites and, almost always, some follow-up questions and refined ideas for the next round of students. Dietitians who have a research question but lack confidence and or expertise to supervise a student research project can share supervision with a more experienced researcher and simultaneously extend their own skills. Non-dietetic students may make a valuable contribution. For example, a psychology student may be able to provide help with questionnaire design and analysis or a secondary school work experience student might be able to help with case note audits or plate waste assessments. Dietetic students on summer scholarships can potentially make an enormous contribution and gain valuable experience.

Like dietitians in the health care system, most academic dietitians struggle to make time for research in the context of the demands of service delivery, that is, teaching. However, they do have the advantage that research is clearly part of their role, performance review and promotion structures. They need to teach, practitioners need to
deliver a service, and both need to do research. Surely this is the basis of a good partnership with considerable scope for trading expertise and time. For example, it may be much quicker and easier for an academic dietitian to write the first draft of the funding application or paper while the clinical dietitian likely will be more much efficient and effective at teaching the students about current clinical management of liver disease or nutrition support. With the steadily growing number and experience of dietitians in universities and research organisations, these partnerships become increasingly possible and productive.

Funding—building a track record

There is no doubt that building capacity to attract funding is central to improving the participation of dietitians in research. While 64% of respondents in the Canadian study agreed that external funding was necessary for all research projects, only 35% indicated that lack of funding prevented them from being involved in research (4). Access to computing facilities (79%) and a statistician (77%) were identified as important in facilitating research participation (4), but are essentially a funding issues.

The major factor in funding success is a track record in both funding and publications. Hence, collaborations and partnerships, as already discussed, are crucial. Academic status with an academic unit, in return for contributions to teaching and other academic activities will provide access to potential funds as well as training and assistance with writing grants. Writing and rewriting grants and accepting a low success rate is also necessary. Every grant application is a learning experience and the effort is rarely wasted. For example, an expanded and refined literature review may be suitable for publication.

Track records must be built over time with perseverance, commitment and energy. A strategic and creative approach to funding is required. For example, a smaller, perhaps internal, grant for service improvement may, with a change of emphasis, accommodate a quality improvement project that will provide publishable data. The concept of adding value to existing activities has been discussed and is very important in building a track record. Non-monetary support such as provision of feeding formula or dietary products and contributions from students, including non-dietetic students, can be particularly useful.

Publish

Research not published is research not done. Clearly research is only useful if it is published and the gains of integrating dietetic research and practice depend on publication. Peer-reviewed publication is a clear and relatively independent indicator of the quality of research activities. It also adds to research credentials and track record, which are the foundation of future funding and collaborations. In addition, the discipline, reflection and collaboration involved in writing and navigating a paper through the peer-review process are central to enhancing research skills and experience. Research is one of the few areas of practice where there is an established mechanism for reflection and peer review on performance and output. Publication provides important feedback and learning.

Participate in reviewing

Reviewing is a professional obligation of all those who publish. It is critical that there is a pool of dietitians with appropriate credentials and experience to review dietetic research. There are potential problems when researchers from other disciplines judge the merits or otherwise of dietetic research. Inexperienced reviewers must take up invitations to review and if necessary seek guidance from more experienced colleagues. It is also important that dietetic reviewers are not overly critical and are realistic in acknowledging the difficulties of dietetic methodologies and research. Reviewing also potentially provides a learning opportunity, including some recent references.

Summary and conclusions

Practice-based research underpins a credible, competitive and viable discipline and is fundamental to ethical and quality practice. Certainly there are barriers to building dietitians’ research capacity and participation. The demands of service delivery in a context of insufficient and diminishing resources are daunting. Limited research knowledge and skills and the perfectionist streak undermine confidence and self-esteem. However, overcoming these challenges has many potential gains. Research can stimulate and sustain intellectual curiosity, and revitalise professional lives. It strengthens the quality of service, builds confidence and enables dietitians to influence the direction of practice and the profession. It provides potential sources of funding and supports our case for maintaining or growing resources.

There are numerous strategies to foster dietitians’ research capacity and participation. They all require professional and personal investment of time and energy. Research must be on workplace agendas. Current practice must be examined carefully to ask the difficult questions about broader professional priorities and outcomes. We may need to relinquish familiar and comfortable tasks. Skills and confidence must be built so that dietetic-led research becomes much more common. Opportunities must be made and taken to participate in research as collaborators not handmaidens. Practice is enhanced by research and research drives practice. The distinction between researchers and practitioners must be blurred; we can and should be both. Strategic collaboration is critical, including partnerships between academic dietetic departments, experienced research dietitians and practitioners. Publishing and reviewing are key strategies to enhance skills and develop a track record.

As dietitians, both individually and as a profession, we must seize opportunities and take up the challenges. We must form partnerships and learn as we go, stimulated by what we do not know; it is by far the most interesting and effective way to learn. We need to get back in touch with our love of learning and intellectual curiosity. We must be philosophical, patient and persistent. Fundamentally research is about unanswered questions and uncertainty. We must have the courage to seek new horizons.

A bright future for dietitians—it depends on the evidence.
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