

A model for Internet-based training to support rural and remote Practice Nurses in providing sexual and reproductive health education

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Abstract

In rural and remote settings in Australia, Practice Nurses (PNs) are a primary source, and sometimes the only source, of sexual and reproductive health (S&RH) education for patients and communities. There has been limited attention paid to the needs for maintenance and enhancement of competency of PNs in providing S&RH education following initial formal preparation for these roles. A 2003 needs analysis conducted by the Wide Bay (Australia) Division of General Practice (WBDGP, 2003) identified that across the 732 GP practices in Queensland there are 586 Practice Nurses. Only two of these nurses have qualifications in women's health. Nationally in Australia there are 5091 GP practices employing 2349 Practice Nurses and only twelve of these have qualifications in women's health. In the Wide Bay Division of General Practice there are no nurses with women's health qualifications in general practice (WDGP, 2003, p.420).

This paper reports on research-in-progress that aims to identify needs, analyse issues and propose a new model for Internet-based training and support to assist these health workers in that role. This will be accomplished by studying behavioural aspects that might guide further research on effective internet-based training and support in order to address the needs of PNs for training in S&RH and factors that impede PNs in their ability to provide effective S&RH services. It will then design and test a model for training delivery. The outcomes of the research will also enable PNs to meet legislated needs for continued demonstration by nurses of recency of practice and ongoing professional development.

Introduction

Time constraints of GP (community-based General Practitioner physician) consultations and the limited availability of women GPs in rural and remote areas suggests that PNs may be better suited to providing S&RH education and support. Practice nurses work collaboratively with General Practitioners (GPs) providing a range of services including patient counseling, education and support. In the short time of a GP consultation there is often not the opportunity for detailed explanations or for patients to ask multiple questions, or to ask more sensitive questions that patients might only ask after a period of time and once they felt comfortable. It has been identified that lack of exploration into patients' concerns and their awareness of choices leads to poor contraceptive compliance (Family Planning 2003). PNs provide a less-rushed consultation

allowing patients to more fully share their concerns. In addition, PNs are mostly women and may be preferred providers of services in rural and remote settings and for Aboriginal women, especially in localities where there are no women GPs or where there is less access to women GPs than in metropolitan areas.

In 2003/04, FPQ specialist training courses in S&RH services were attended by 476 nurses (Family Planning Queensland, 2004). These courses included face-to-face training workshops followed by placement in clinical settings or update seminars. The training equipped nurses as specialists in S&RH services. To compliment these training programs there is a need for a mechanism for the on-going development, maintenance and enhancement of skills and knowledge for both specialist S&RH nurses as well as for general practice nurses who are likely to be called upon to provide effective and culturally appropriate S&RH in primary health care settings. Consequently there is a large gap in adequately preparing practice nurses to manage women's S&RH health needs (Gore, 2005).

In 1998 the then Australian Minister for Health and Aged Care noted that 'the delivery of public health strategies depends on primary health care infrastructure as such are usually the first points of contact in rural and remote Australia' (Wooldridge 1998). This is especially the case in sensitive issues such as sexual and reproductive healthcare and information services in rural and remote Australia where the primary health care infrastructure is poor compared with metropolitan Australia (ADGP Practice Nurse Survey, 2003). Analysis of FPQ (Family Planning Queensland) data comparing clinics in Brisbane and Toowoomba (Australia) indicates that the ratio of planned to unplanned pregnancies as diagnosis was almost 4.8:1 for Brisbane and 2.6:1 for Toowoomba; almost twice the ratio of unplanned to planned pregnancies in rural compared to the metropolitan region. The data shows a wide variation in the use of contraceptive methods suggesting there may be inequalities in access to contraceptive advice and methods for rural women in comparison to metropolitan women.

The need for improved educational opportunities for practice nurses has been recognised; this is especially the case in remote areas (Newsome et al., 2001). Research indicates that consumers are receptive to practice nurses having a significant role to play in providing support and health information, and a need has been recognised for practice nurses to adopt a more active and advocative role in patient education (Deitsch, Gibb & Francis). Brender (1997) and Soar (2005) suggest that to be effective, the development and implementation of information management services must allow for the involvement of users. No research has been conducted to date to establish how training can be provided to support rural and remote nursing in providing S&RH services including patient education.

The challenge of remoteness is an issue for both patients and clinicians in regional areas including rural Southern Queensland. This research will identify needs and models of solutions that are expected to enable the provision of online professional development and information access for practice nurses in rural and remote settings. In rural Southern Queensland, there is limited opportunity for nurses to obtain this education via Distance Education Delivery (DED). Telecommunication technologies such as satellite communications, distribution of training videos, video-link, tele-health and teleconference education services are available in some rural and remote centres. These are mostly to hospitals and there is a lower penetration and adoption of technology-based information services in GP practices thus limiting the options for practice nurses to obtain needed education in their own workplaces. Further, it is not yet clear as to the

behavioural issues that might influence the adoption of online education models by practice nurses.

Significance

This study is significant to rural and remote Australia in that it will address a gap. There are no comparable programs available for practice nurses or for nurses who might provide S&RH services in hospital settings. An issue raised by women visiting GP services is that they have not always been well informed following consultation. Particular gaps in patient knowledge that are not always adequately addressed in GP consultations include some of the timing issues related to contraception, such as information about inserting devices at a time in a cycle when pregnancy can be excluded with total confidence (Harvey, 2005). With women GPs visiting either weekly, monthly or less frequently, tailored accurate advice prior to the visit of the GP could be provided by educated practice nurses to streamline and enhance the GP services. It would also assist patients in preparing to optimise the value of the GP consultation through preparing questions and ensuring patients understood the comments of the GP.

The research will contribute to and be guided by the vision, objectives and architecture of the national strategy for health information (BCG, 2004) and the Australian national health information integration project, *HealthConnect* (HealthConnect Office, 2004). The research will identify means of delivering timely and accurate information to practice nurses in their workplaces. In doing so the educational and professional disadvantage of remoteness will be reduced as will the costs and inconvenience of staff having to travel to undertake relevant study for their contexts of practice. Behaviourally, it is anticipated that practice nurses will provide better S&RH provision to consumers leading to improved healthcare seeking behaviours by consumers, reduced complications of unwanted pregnancies and levels of post-natal complications in this geographical area. To date, the Australian Government has focused a number of policy statements relating to healthcare that indicate the necessity for accurate, up to date health care information provision. The outcomes of this study will facilitate provision of healthcare information to Australians in rural areas who currently do not seek or have adequate access to such information from GPs but may be more likely seek it from informed practice nurses.

Approach

The research question driving this study asks: *What are the needs, and what is an effective delivery model, for appropriate, ongoing professional development to support rural and remote practice nurses in providing sexual and reproductive health education to patients?*

To answer the research question, this study will adopt a four-phase process. The first phase will research the needs of practice nurses for S&RH training. It will also involve a comprehensive literature review to identify suitable strategies to deliver training to practice nurses in rural and remote areas. The second phase involves the development of a model for delivery of training. The third phase involves research into the integration into practice nurses' work-practices. The fourth phase will evaluate the effectiveness of the overall model including design issues.

These four stages will test the hypothesis: *There is a need for ongoing professional development to support rural and remote practice nurses in providing sexual and reproductive health education to patients; this need can be addressed through an Internet delivery system based on a model derived from research* (i) Hypothesis testing (Confirmatory)

The hypothesis testing will utilise **Action Research** in a Triangular format. This represents a form of collective, developmental, self-reflective inquiry undertaken by participants in order to bring together practical solutions to issues of pressing concern to people (Stringer, 2004). As such, researchers require skills in engaging in face-to-face work with others to address issues of mutual concern and to create a wider community of enquiry involving whole organisations (Stringer 2004, p4).

Key concepts of Action Research relevant to this research include the need for change, reflection, participation, inclusion, communication, practice, community, evaluation (reflection). Investigation of specific issues such as in this research often reveal multiple dimensions of the situation requiring attention revealing further possibilities for action (Stringer 2004, p10). A particular strength of Action Research is that participants and stakeholders can be involved in one or more levels of the research and implementation of findings enhancing relevance of outcomes (Street 2004, p227). This also enhances the validity of findings of the research. Street suggests that findings of action research are context specific and may not be easily transferable; however, she also reports that others argue that sustainability and transferability are high. It is anticipated that results will be easily transferable. This will be the first phase of the project. Intensive exploratory investigations will be carried out to understand the various aspects influencing educational products specific to practice nurses. Literature covering instructional strategies, online education, multimedia development and learning approaches will be studied in detail to understand the pros and cons of providing Internet-based education to a specific cohort in health. In essence, this phase of the project is aimed at understanding the needs of GP practice nurses in training for S&RH.

Once this is accomplished, a survey tool will be administered to PNs in the designated geographical area. The administration includes both mail and phone techniques. The specific objective of this exercise is to explore perceived gaps in knowledge, needs for the delivery styles of training and information about S&RH and preferred delivery modes. The instrument will focus on educational aspects of contraceptive methods for PNs in rural Southern Queensland.

The deliverable of this phase will be a detailed user-needs analysis and a literature review

(ii) Determinants of the training model (Exploratory)

This is a major phase of the research and is exploratory in nature. This stage will involve the investigation of the determinants of the training model, in order to realise a framework for development and adoption of electronic-based training models and associated resources in appropriate delivery modalities. For example, this stage will explore issues raised by participants about the Internet, videoconference, teleconference; e-newsletters; searchable information databases and clearinghouses, forums and newsgroups to ensure sustainability of the training tool. This stage will also seek to identify determinants that dictate the direct delivery of training to the GP Practices where the nurses are employed. The delivery methods selected will be determined by the needs identified by participants in the previous phase. Behavioural outcomes to be explored during this phase include willingness of Practice Nurses to access learning, the opportunity to access the same in the workplace, recognition by GPs of the value of this service to their practices, teaching sessions provided by Practice Nurses and willingness to seek out health information from Practice nurses by consumers.

Rogers' (1995) innovation diffusion theory will be used to structure the determinants using five perceived attributes of an innovation, namely relative advantage, compatibility, complexity, trial-ability, and observability. Relative advantage is "the degree to which an innovation is perceived as better" (Rogers, 1995, p15) and measures both explicit and implicit advantages. Compatibility is defined as "the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters" (Rogers 1995, p15) and measures how compatible an innovation is with the existing culture, structure, infrastructure, and previously adopted ideas. Complexity is defined as "the degree to which an innovation is perceived as difficult" (Rogers 1995, p16) and measures how difficult an innovation is to understand, learn, and use. Trial-ability is "the degree to which an innovation may be experimented with on a limited basis" (Rogers 1995, p16) and describes how easy an innovation is to try out or test. Observability is "the degree to which the results of an innovation are visible to others" (Rogers 1995, p16) and reflects how explicit are the results and outcomes of an innovation. Besides the five perceived attributes of an innovation, other variables also affect its rate of adoption, such as: (1) the type of innovation-decision, (2) the nature of communication channels diffusing the innovation at various stages in the innovation-decision process, (3) the nature of the social system, and (4) the extent of change agents' effort in diffusing the innovation.

In investigating the "determinants" of the adoption of an onsite training model in healthcare, the above factors/variables will be used as the basis to explore further. Literature will be studied in detail to come up with a range of other factors/variables.

Deliverable of this stage of the project is a comprehensive set of "determinants" of the adoption of an onsite training model as obtained from the literature and the practice nurses.

(iii) 'User acceptance' evaluation (confirmatory)

This phase involves the development and installation of a pilot training program based on the factors of phases one and two. While the development includes the choice of appropriate instructional strategies and learning approaches, the installation involves consideration of technical capabilities at practices. Once the onsite model is installed, users will be provided with access to test the appropriateness of the model. The evaluation of user acceptance will be conducted as follows:

This phase of the research deals with developing an adoption model of the onsite education tool based on the determinants of phase (ii) and is confirmatory in nature. "Theory of Reasoned Action (TRA)" will be used for this purpose. Ajzen and Fishbein's (1980) theory of reasoned action (TRA) is "an especially well-researched intention model that has proven successful in predicting and explaining behaviour across a wide variety of domains" (Davis, Bagozzi & Warshaw 1989). TRA is "designed to explain virtually any human behaviour" (Ajzen & Fishbein 1980). Therefore, it should be appropriate to model the adoption of an onsite education solution. The TRA has broad applicability in diverse disciplines and has gone through rigorous testing that has proved its robustness in predicting intentions and behaviour (Davis, Bagozzi & Warshaw, 1989; Manstead, Proffitt & Smart, 1983; Bagozzi, 1981, Bagozzi, Baumgartner and Youjae, 1992; Sheppard, Hartwick & Warshaw, 1988).

People consider the implications of their actions before they decide to engage or not to engage in a given behaviour (Ajzen & Fishbein 1980). The TRA is built on the basis of the assumption that human beings are usually quite rational and make systematic use of the information available to

them (Ajzen & Fishbein, 1980). The theory views a person's intention to perform (or not to perform) a behaviour (for example the intention to adopt an onsite model) as the immediate determinant of the actual action. Further, a person's beliefs or perceptions about the characteristics of the target system such as the onsite education model are antecedents to behaviour intent to adopt and use the system (Agarwal & Prasad, 1997). Even though it is possible that intention can change with the passage of time, the previous research has shown that they are good predictors of actual future use (Davis, Bagozzi & Warshaw, 1989).

Based on the theory of reasoned action, a person's intention is a function of two basic determinants, one "personal" in nature and the other reflecting "social influence". The personal factor is the individual's positive or negative evaluation of performing the behaviour, which is called "attitude toward the behaviour" and refers to attitudinal factors. The second determinant of intention is the person's perception of the social pressure put on him/her to perform or not perform the behaviour in question. This factor is termed "subjective norm" – which deals with perceived prescriptions and relates to the normative considerations (Ajzen & Fishbein, 1980).

The relative weight of the two determinants of intention is the solution for the situation of conflict between the attitude toward the behaviour and the subjective norm. As a result, it is possible to predict and gain some understanding of a person's intention by measuring his/her attitude toward performing the behaviour, his/her subjective norm, and the relative weights. Under the theory, attitudes and subjective norms are a function of beliefs. A person's attitude toward behaviour is determined by his/her salient beliefs that performing the behaviour leads to certain outcomes and by his/her evaluations of those outcomes. In the same way, a person's subjective norms are determined by his/her beliefs that specific salient referents think he/she should (or should not) perform a given behaviour and by his/her motivations to comply with those referents. In other words, the individual's decision of adoption is influenced by the surrounding social systems. Attitude toward a behaviour and subjective norm are both considered to be functions of the weighted sum of the appropriate beliefs (Ajzen & Fishbein, 1980). The weights will be estimated by first generation regression models.

Based on the determinants of phase (ii) we shall develop the onsite education tool adoption model in line with the material presented in this section (phase (iii)). While basic structure of the model will remain similar (that is, behavioural, attitudinal and belief variables), we expect to see some new factors in the model, primarily some variables related to health service culture.

The Deliverable of this stage of the project is a reliable, valid and confirmed (by the end users) onsite educational product adoption model, where significant "determinants" are expected to show clearly. Special attention must be paid to these significant determinants for any further application development and policy development with respect to promoting onsite educational products in healthcare services.

(iv) Evaluation of effectiveness of the onsite tool (confirmatory)

This phase will evaluate the effectiveness and sustainability of onsite educational program for practice nurses through focus groups followed by in-depth interviews to ascertain relevance, user-friendliness and transferability of learning by patients (consumers). As identified earlier this forms one of the important stages of this research as it enables all participants to own the outcomes of the research whilst ensuring that such outcomes are valid and relevant to their needs.

Scope & Limitation

The regional, rural and remote areas of rural Southern Queensland will be the main focus of this study. The potential exists for this to be transferable to most rural and remote areas of Australia to Aboriginal Health Workers as well as registered nurses. The project focuses on provision of educational services to registered nurses (RNs) working in General Practice Surgeries as well as primary health Care nurses who do not have sexual reproductive health educational qualifications.

Discussion

Currently no programs exist to provide real-time sexual and reproductive health information services to assist community-based rural and remote health workers in Queensland, Australia. The project addresses the Australian National Health Priority 2 (specifically: “*a healthy start to life, Preventative health care and Strengthening Australia’s social and economic fabric*”). Provision of an accredited educational qualification in S&RH for Practice Nurses in their workplaces will assist them to provide appropriate contraceptive information for consumers in rural South Eastern Queensland.

Rural and remote consumers and practice nurses are disadvantaged in regard to access to appropriate educational support. This project will investigate the needs of practice nurses for training in S&RH. These determinants will be grounded in data from phase one of the study and integrated with the findings from the literature. These will be extremely useful for policy makers as well as the target population. For the first time the policy makers, Queensland Department of Health, FPQ and other stakeholders will have enhanced understanding of the behavioural feelings of the practice nurses regarding the disadvantages they currently experience and how it limits their ability to provide appropriate nursing care for their clients in these settings.

Using state of the art software development, this project will come up with a valid and reliable model for provision of educational materials directly to GP surgeries accessible to practice nurses and other clinicians such as GPs. Significant needs will be identified and addressed. The results will enhance the quality of education provided to consumers with respect to reproductive health concerns and provide an alternate source of support for women who do not feel comfortable asking male GPs for such information.

Summary

In rural and remote settings, Practice Nurses (PNs) are a primary source, and sometimes the only source, of sexual and reproductive health (S&RH) education for patients and communities. This research will be a significant contribution to theory and practice of nursing and health education for registered nurses throughout Australia. The likely beneficiaries from this research include rural and remote communities, Indigenous peoples, and the communities in developing countries particularly those coping with the HIV/AIDS pandemic and other sexually transmitted infections. It will also benefit communities in their family planning efforts. This is seen as the first building block to an ongoing program of research to enhance the quality and delivery of S&RH services across Australia and extending out to the Asia-Pacific region.

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