

## **The Broken Hill distance education trial in nursing education**

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With Australia's ageing population, gerontology and geriatric nursing are likely to be growth areas in the medical and para-medical fields. This has considerable implications for pre-service nursing courses and for the in-service education and refresher courses. Data from the National Survey of Nursing Personnel, prepared by the Nursing Advisory (Standing) Committee of the National and Medical Research Council, showed only three per cent of registered nurses in geriatric nursing in 1979 held a qualification. The Executive Director of the College of Nursing, Australia felt that there was a need for a range of gerontological nursing programs.

The College is a national nursing organisation with a membership of 3000 nurses who have completed higher education programs at basic and/or post-registration level in Australia and overseas. It is concerned primarily with the ongoing development of quality nursing practice through education and research. Its Continuing Education Sub-Committee has sought to develop learning packages to overcome shortcomings in such areas as geriatric nursing.

A further concern is the remoteness of some of Australia's nurses from the larger metropolitan centres and the feeling of isolation this engenders. Attendance at in-service education courses requires travelling a considerable distance and paying accommodation expenses.

### **The Broken Hill Project**

The Continuing Education Sub-Committee of the College of Nursing sought to develop a learning package which would:

- provide nurses with a knowledge of the physiology, diagnosis and treatment of incontinence in the elderly;
- change nurses' attitudes and make them more aware and sympathetic to elderly people suffering incontinence;

- make nurses feel they could do something positive to alleviate the condition.

There were two further aims for this pilot project. One was to assess the suitability of the seminar package structure together with the effectiveness of its media content. Another was to determine the ease of administering a self-contained learning package in an isolated rural hospital.

### **The content and design of the learning package**

The package was to be self-contained for distribution to hospitals throughout Australia. It was to be capable of use by groups varying in size from three to five to 30 participants.

To reduce costs, existing media materials were used. These consisted of a 40 minute film and two videos of lectures delivered by a consultant geriatrician and a Nurse Educator. Some overlap of information was provided by each media.

A leader's manual and participants study guide were designed and printed. The study guide was divided into three sections - the physiology, the diagnosis and tests, and treatment of incontinence. It combined data and questions to be answered after viewing the media materials. Key diagrams and some stills from the film were reproduced to guide the participants in recall of the content.

The Broken Hill program consisted of the following sequence of activities:

- Overview of the activities.
- Administration of the pre-test.
- Screening of the film - discussion and completion of relevant questions in study guide.
- Viewing Russell videotape, discussion and completion of relevant questions in study guide.
- Viewing O'Brien videotape, discussion and completion of the relevant questions in the study guide.
- Group work discussing case studies.
- Teleconference session.
- Administration of the post-test.
- Evaluation.

The program was designed to be completed in two, three-hour sessions.

### **Teleconferencing and distance education**

One of the essential components of the learning package was a teleconference. This enabled seminar participants to contact the two key speakers seen on the video. Telecom Australia provided participants at Broken Hill with a loud speaking telephone, while the two consultants in Melbourne used a standard handset.

The Australian domestic satellite launched in 1985 has focussed attention on alternative means of delivering education to remote locations. There have been a number of trials designed to simulate satellite communications and in the course of these, attention has been focussed on utilising existing communication means more effectively. One such mode is the telephone. Whilst quite extensive use has been made of teleconferencing for education throughout the United States, little use had been made of this device in Australia.

Teleconferencing and other forms of mediated instruction have been used throughout North America with success. Chute, Curtis and Rose (1980) described the use of teleconferencing in South Dakota to overcome a shortage of physicians in that state. Kues (1980) described a University of Cincinnati project to link four remote hospitals to the medical centre with slow scan television and two-way audio. Vesprani and Veatch (1980) described how teleconference and videotape are used by the same university for training professionals who work in the field of mental retardation and other developmental disorders. The direct questioning of producers by teleconference 'sparked a sense of immediacy and presence that the participants could not readily forget'. (Vesprani and Veatch, 1980, p244).

As a means of transmitting educational expertise to remote locations throughout Australia, the telephone has some undeniable benefits. External sources of information and knowledge are readily available through the telephone. Australia is well serviced by an extensive terrestrial communications network operated by Telecom Australia. This network is supported by a national maintenance organisation and staff can be called on to provide advice in setting up teleconferences.

### **Evaluation methodology**

The pilot project provided the opportunity to see several techniques to collect data for the evaluation. There was an opportunity to combine quantitative measures in the form of pre-test/post-test of cognitive information and attitudes as well as qualitative information from interviews, participant observation and questionnaires.

As nurses work in shifts, the program was administered in two parts on two separate days. This enabled greater access to the program by staff. However, this also meant that some nurses were present on one day and not the other. Only 21 staff completed the questionnaire although approximately 60 staff were present for the teleconference session on the second day. Obviously, some of these were present only as observers.

### **Effectiveness of the content of the seminar package**

Predictably, no change in the participants' attitudes was discernible from responses to the pre-test and post-test statements. A more appropriate indicator would be to observe participants' reactions and behaviour in the

hospital wards and their general demeanour towards patients with incontinence. The nurse educator who acted as the seminar leader felt the information on the physiology of incontinence was superbly, simply and logically presented. However the participants' responses on the tests indicated they had not increased their understanding of the physiology of the condition. This was partly due to the large percentage of student nurses who participated in the seminar and partly to the relative difficulty of this information. This response was not unanticipated since the learning package was designed for trained nursing staff and not trainee nurses with only two week experience.

Participants did indicate that they gained an understanding of the diagnosis of the condition and its treatment. The most experienced staff who already had some knowledge of incontinence in the elderly, valued the seminar program higher than the inexperienced participants.

Several questions were included in the questionnaire to determine participants' reactions to the structure of the learning seminar package. Most felt that it contained too much information for the time allocated and that more discussion would be helpful.

Generally most of the media materials and experiences were satisfactory. The study guide was considered to have long term value as a reference document but was extremely difficult to complete during seminar. This highlights the difficulty of integrating existing media materials with written materials. The group work sessions were very effective and the level of participation particularly from the student nurses was very high. However, once again, shortage of time was the main constraint.

The participants considered the teleconference session extremely valuable. The session had a strong impact on participants who had previously viewed the lecture videos. Because of the large number of staff who were interested in this session, questions were prepared in advance and sent to consultants. Consequently, there was not as much interaction as this form of communication allows. However, there were some follow up questions and the participants felt this segment of the seminar package had a pronounced effect on reducing the feeling of isolation.

The participants were asked several questions about the administration of the seminar program. Most felt a further teleconference session would be a suitable follow-up activity and that they would be willing to attend this type of activity during the evening. The Broken Hill staff member who acted as seminar leader said she was under some strain but she felt that subsequent programs would be easier to organise.

## **Conclusion**

The staff of the Broken Hill hospital were enthusiastic about participating in the trial of the distance education learning package, yet White (1979) has warned against the novelty effect in trials which use relatively

complex and new technology. The positive attitude of a representative group of staff and the comparison of their responses on the pre-test and the post-test concerning the diagnosis and treatment of incontinence in the elderly suggest that the learning package was very successful. The responses of the participants and their willingness to suggest future topics for similar distance education learning packages makes it obvious that they believe this type of in service education can enhance their professional development and improve patient treatment. However, a relatively complex trial of this type, where existing media materials are used, must raise several issues in relation to design and delivery.

Obviously, the volume of information contained in the package was too extensive for the time allowed for the seminar. One solution might be to divide the content into two separate packages, one for the physiology of incontinence in the elderly and another for the diagnosis and treatment of the condition. Because of the importance of understanding the physiology for diagnosis and treatment, both packages must be used in close time sequence with the physiology package preceding the diagnosis and treatment package.

The use of existing media materials creates problems for the design of supportive printed materials for participants. Each film or video tape present information in a different order and this has to be taken into account in planning study guides. At certain stages of the problem, the sequence of the information in the study guide may be at variance with some of the other materials. The inclusion of a printed record to which participants can later refer is valuable. A follow-up study to determine the extent to which staff refer to the study guide after the seminar would seem desirable.

Assumptions made about the audience were a related problem in this trial. While designers can make strong recommendations as to the audience which they believe will derive most benefit from their programs, they cannot regulate the educational level of people who will eventually use it. It is clear some strong guidance should be given to potential users about the assumptions made by designers about entry level knowledge.

A further observation was the tolerance of the participants towards the production quality of the video materials used in the package.

Although the content of both the videotapes was excellent, they were tapes of two lectures given at a previous conference. The visuals, consequently were relatively static and uninteresting. However, this did not affect the participants' evaluation of the usefulness of these materials. This suggests such materials could further be exploited for future distance education learning materials. Nurses working in isolated hospitals appear to be sufficiently highly motivated to overlook any shortcomings in the presentation of the media materials.

The trial also raised questions about the optimum cost of this type of learning package. Obviously, the cost of a staff member from Broken Hill hospital attending an in-service seminar in one of the capital cities would be several hundred dollars. While participants often gain intangible benefits other than the planned content at residential seminars, there is less disruption to the hospital routine with distance education learning packages. This must make them attractive to hospital administrators. Clearly, further investigation is required on the economics of these learning packages. If they are distributed on a national basis to other remote locations such as Mt Isa in Queensland, the indications are that they would be very cost effective.

The Broken Hill trial has shown that existing media materials can be used to overcome some of the professional disadvantages created by geographic isolation. Relatively low complexity technology such as loud speaking telephones can be successfully integrated into distance education learning packages and they can help overcome the feeling of isolation that these nursing staff have.

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