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EDUCATION

Designing a questionnaire to review cultural competency in Australian and New Zealand paramedic courses

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Abstract

Designing a questionnaire to review cultural competency in Australian and New Zealand paramedic education courses provides the focus of this paper. The paper emerged from a larger research project, which sought to explore the extent to which health professions include cultural competency in their curricula.

The purpose of designing a questionnaire was to review Australian and New Zealand paramedic education courses to discover the presence and coverage of cultural competency in the paramedic curriculum. To the best of our knowledge, no current research explores this theme. The absence of such research provided an opportunity to rectify this gap and contribute to the development of the paramedic curriculum, particularly with the proliferation of cultural competency courses in other health professions. This research makes an important contribution to the new academic discipline of paramedic research.

The methods used for designing a questionnaire utilised three statements and guidelines on research practice, in addition to a literature review that informed the design process.
The research outcome is a paramedic specific questionnaire based on a carefully constructed design process which education researchers could use or adapt to their needs for exploring other curriculum topics.

Introduction

The design of a specific questionnaire to review cultural competency in Australian and New Zealand paramedic education courses emerged from a literature review which identified how different health disciplines provided cultural competency training in their undergraduate curricula. The bibliographies from these papers provided additional relevant literature and broadened the scope of the questionnaire design. A close analysis of these studies, reported in an earlier paper in this series[1] identified key themes for inclusion in the initial design. The content in this paper establishes a foundation for other paramedic researchers to undertake research using the survey method, and while it is not a one-stop-shop, acts as a starting point for novice researchers to use the bibliography as a basis for primary reference sources. The findings obtained from the distribution of the questionnaire developed in this paper will be published in a subsequent article.

Background

A progressively more diverse population demands that educators of health professionals prepare students to work with culturally based health beliefs that are different from their own. Indeed, the introduction and subsequent evaluation of cross-cultural and cultural competency units and courses are now evident in nursing,[2,3] medicine[4,5,6,7,8,9] dentistry[10,11] and other health professions.[12,13,14] However, to the best of our knowledge, similar information on paramedic education programs in Australia and New Zealand is unavailable. This absence invites an exploration of the cultural competency programs currently in place to prepare paramedics to work in culturally diverse communities.

The National Health and Medical Research Council (NHMRC) is the Australian peak body that: supports health and medical research; develops health advice for the Australian community, health professionals and governments; and, provides advice on ethical behaviour in health care and in the conduct of health and medical research. Recently, NHMRC published *Cultural Competency in Health: A guide for policy, partnerships and participation,*[15] which has been previously reviewed in this journal.[16] The Guide promotes the teaching of cultural competency[(1)] for all health professionals. Additionally, numerous international, national and state conventions underpin paramedic practice, which date from 1948 when the United Nations adopted the Universal Declaration of Human Rights.[17] Together, these provide the context and rationale for exploring cultural competency in paramedic education at a time when other health professions are also actively developing such programs.

The importance of this research lies in the belief that, currently, no previous study explores paramedic cultural training. The questionnaire enables the collection of data to establish a base knowledge about the preparation of Australian and New Zealand paramedics in cultural competency. This is at a time when a heightened demand for its inclusion in the curricula of health professions challenges how this topic can be included, what content should be taught, who teaches the topic and how. A better understanding of available cultural competency programs will help align the paramedic profession with other university-based health disciplines.

Additionally, this research develops a greater understanding of questionnaire design specific to the paramedic profession which can inform the design of further questionnaires on similar national and international curriculum issues. Developing a knowledge of questionnaire design encourages research results which can contribute to advancing the professionalism of paramedics to a more robust status within the Australian and New Zealand tertiary sector.

Method

The design of the research process utilised three statements and guidelines on research practice:

a) *Australian Code for the Responsible Conduct of Research 2007,* published by the NHMRC: Australian Research Council, and Universities Australia,[18]

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(1) Cultural competency is a contested concept. Instead of cultural competency, which implies competency in a highly dynamic and fluid phenomenon, we prefer the term cultural responsiveness, which suggest paramedics can respond to the cultural issues of patients in a personal and affective manner.[17]

b) National Statement on Ethical Conduct in Human Research (2007) published by the NHMRC,[19] and,

c) *Guide to Good Research Practice,* published by the Department of Epidemiology and Preventive Medicine at Monash University.[20]

Questionnaire-based research offered a variety of approaches to collect specific research data from respondents about cultural competency in Australian and New Zealand paramedic education courses. For example, questionnaire research could: be web-based; utilise a telephone interview, or in-person interviews in private or public settings; or, involve mail-outs. The research purpose and context ultimately determine the most appropriate approach.

The choice of a mail–out questionnaire was considered appropriate due to: the combined geographic vastness of Australia and New Zealand; the need for uniform data collection; and, the limited number of relevant teaching institutions. Questionnaires were mailed to the department head, or course coordinator, at each educational institution.

The chosen method might seem a relatively cost-efficient means for collecting data. However, ultimately, 'good analysis stems from good data and thus good design',[21] Questionnaire design is in fact a time-consuming and therefore costly enterprise. To ignore the importance of taking time to design a well structured questionnaire which asks questions that are understood as intended is analogous to 'garbage in and garbage out'.[22, p.x]

The process of questionnaire design was based on a seven-step process devised by Burgess,[21] to which ethics approval and preparing and disseminating the report were added:

- define the aims of research
- identify the sample
- decide how to collect replies
- design the questionnaire:
    - determine the structure of the questions
    - select the question type for each question and specify the wording
    - design the question sequence and overall questionnaire layout
- apply for ethics approval
- pilot the questionnaire
- carry out the main questionnaire
- analyse the data
- prepare and disseminate report

This framework guided the process of designing the questionnaire.

Define the aims of research

The aim of our questionnaire was to develop a snapshot of how cultural competency is represented in Australian and New Zealand paramedic education courses.

Identify the sample
The number of institutions running paramedic courses in Australia and New Zealand determined the sample size. With eighteen relevant institutions, the number was not only small but presented a significant risk of producing a low response rate, which is a typical outcome for questionnaire research of even larger research projects.[23] However, while the paramedic teaching community is relatively small, it is generally supportive of colleagues' research. The targeted respondents were department heads and/or course coordinators who had access to the relevant information.

Ordinarily, recruiting suitable respondents is time-consuming and frustrating. However, the relatively low number of paramedic teaching institutions meant that all institutions were known to us. The disadvantage of this factor was that while our explanatory statement promised anonymity and privacy, we would recognise some respondents from their responses. We are, however, obliged to conform to the university's code of conduct for researchers and maintain anonymity and privacy, which was, we believe, strengthened by choosing to mail questionnaires, rather than talking to each respondent on the telephone.

Decide how to collect replies
Each targeted respondent received a pre-paid-return envelope for returning the self-administered questionnaire to the chief investigator. As a part of follow-up, each targeted respondent also received a thank-you letter with a second questionnaire and a second pre-paid return envelope, in case they had misplaced or not returned the initial questionnaire.

Design the questionnaire
The actual process of designing the questionnaire was separated into three elements:

- Determine the structure of the questions
- Select the question type for each question and specify the wording
- Design the question sequence and overall questionnaire layout

Determine the structure of the questions
Determining the structure or construction of questions for surveying cultural competency training in the undergraduate paramedic curriculum represented a more complex task than initially anticipated. Particular consideration was applied to the design because of the critique that 'our ability to construct questions which produce data that are reliable and lead to valid conclusions has not been very impressive'.[22, p.2]

Previously, research literature concentrated on interview techniques rather than on devising questions for surveys. Foddy advocated a coherent, theoretical basis for the construction of more valid and reliable questions for surveys. He started from the premise that in order for questions to work, they required a context in which they could be understood. The complexity of human communication obscures the context due to the way people interpret each other's viewpoint. For example, respondents' answers may reflect what they assume the researcher wants to know, in addition to assuming what the researcher will do with the information they give. These ideas imply that the respondents constantly formulate interpretations of the researcher's objective, which in turn constantly influences their own conduct towards the

researcher. These ideas also imply that respondents are not passive players reacting simply to the researcher's demands, but are actively engaged in the task of trying to make sense of the questions put to them.

To make questions interpretable and comparable, Foddy suggested that:

- respondents define the topic in the same way so that they have the same idea about what a question is asking;
- information is relevant to respondents and that they have access to the information; and
- researchers specify the perspective that respondents adopt when framing their answers.[22]

In response to the first suggestion, we defined 'the course' as 'the primary course leading to qualification as an ambulance paramedic at your institution'. We used the literature review to define the topic and key concepts relating to cultural competency, cultural sensitivity, cultural diversity and cultural training. Using the literature to hone the topic and key concepts proved productive for clarifying the research aims for the respondents. The multiple and disparate definitions could have been quite confusing and produced inaccurate data. Instead, definitions were provided at the beginning of the questionnaire, which specified and defined the dimensions of the topic in relation to health professionals.

In addition, the literature review provided a comprehensive list of questions that other researchers had asked of this topic. The major themes identified in our first paper were:

- Rationale for a questionnaire on cultural competence
- Definition of cultural competence
- Research objectives
- Teaching methods
- Unit/subject content
- Cultural training as core curriculum
- Time devoted to teaching cultural competence in the course
- Staff training in cultural competence
- Student assessment and feedback
- Findings of reviewed paper
- Recommendations from reviewed papers[1]

The list does not include minor topics and represented only the prevailing themes in the literature review. This list, however, is consistent with the standard educational framework for curriculum design as described by Prideaux[23] which reinforced the choice of themes utilised.

In response to Foddy's second suggestion, we assumed that the respondents, being department heads and/or course coordinators, would have easy access to the information we sought. Guided by Foddy's third suggestion, the questions were framed by the literature review and designed to aid respondents in providing valid and meaningful answers.

Select the question type for each question and specify the wording
As with determining the structure of questions, careful consideration of crafting the type of question and its wording would go some way towards tempting respondents to react positively, rather than negatively, to the research questionnaire and contribute to achieving an optimal research outcome.

The main styles of questions available to researchers are: open-ended versus closed-responses; single versus multiple responses; and, ranking versus rating.[21]

The major difference between open and closed questions is that open-ended questions elicit more in-depth narrative style responses, whereas closed-response questions elicit specific predetermined responses. Open-ended questions are particularly useful for gaining unexpected interpretations from respondents while closed-response questions are useful when researchers know that there is a limited range of answers.[24, p109] Closed questions may have single or multiple responses. Researchers need to provide clear instructions and state 'select one choice only' or 'select all relevant answers'. This approach helps respondents better understand what the researcher needs, while the researchers glean more accurate and reliable data.

The last style of question noted by Burgess[21] is the ranked versus rated response. Ranked responses help respondents rank a set of options in order of priority while a rated response, as in the commonly-used Likert scales, enables them to rate a particular preference.

Regardless of the style of question used, the most important aspect of crafting a question is structuring the wording. Formulating intelligent questions that respondents can interpret as the researcher intends, and understand each word in the same way as the researcher understands it [22, p39] means careful consideration of both the type of language and choice of words. As noted above, the literature review assisted in clarifying the multiple meanings of culture.
To maintain clarity, and avoid ambiguity and multiple interpretations, the words used in our research questions needed to be as specific and as concrete as possible.[22, p42-4] More specifically, some general rules about the wording of research that informed the questions, were :

- Be concise and unambiguous
- Avoid double questions
- Avoid questions involving negatives
- Ask for precise answers
- Avoid leading questions [21]

Avoiding technical and abstract languages and using plain English statements are perhaps also 'givens'.

Closed-response questions were chosen as the main style to elucidate responses and subsequent analysis, and were based on the literature review. To complement the closed-response questions, limited open-questions were also used. The questionnaire made use of two specific open-ended questions; specifically designed to invite New Zealand participants to comment on the availability of 'policies, practice guides or Charters which give instructions or advice to educators or health professionals to teach cultural competency/safety, which may not be known in the Australian context'. The second open-ended question invited

all participants to provide further relevant comments about training paramedics in cultural competency.

Design the question sequence and overall questionnaire layout

An interesting and appealing layout persuades respondents to participate. Indeed, the design determines the success of the questionnaire through a logical and easy-to-follow sequence of questions.[24] The logical progression was based on theoretical underpinnings and resulted in the following structure:

- Brief introduction with definitions of key terms
- Type of course (vocational or tertiary)
- Curriculum structure
- Teaching methods
- Unit/subject co-ordination and teaching
- Unit/subject content
- Unit/subject duration
- Student assessment and feedback
- Industry relationships
- National Health and Medical Research Council, and, New Zealand Guidelines
- Additional comments
- Thank-you

Appendix A shows the final questionnaire design.

Apply for ethics approval

Studies incorporating questionnaires of this type require ethics approval. In this study, ethics approval for 'low impact research' was obtained.

Pilot the questionnaire

Before sending the questionnaire to respondents, five people not involved as heads or course coordinators, but involved in undergraduate paramedic education, pilot tested the questionnaire. While more reviewers may be justified in larger projects,[25] our decision to have five was based on the total reviewers representing approximately twenty-five percent of the eighteen institutions in Australia and New Zealand and therefore deemed acceptable.

The reviewers comprised one external paramedic, two external educators, one internal educator, and an emergency medicine physician. Their valuable feedback included: removing ambiguity to improve clarity; replacing double-barreled questions with two separate questions; and, simplifying the questionnaire to a more user-friendly format. The pilot study sharpened and refined the questionnaire.

Carry out the main questionnaire

Each targeted respondent received the questionnaire, with an explanatory letter and a pre-paid-return envelope for returning the self-administered questionnaire to the chief investigator. As a part of follow-up, one month later, all respondents received a thank-you letter with a second questionnaire and a second pre-paid return envelope, in case they had misplaced or not returned the initial questionnaire. The follow-up letter enabled us to preserve anonymity of respondents. The chief investigator collected the questionnaires for later analysis.

Analyse the data

This paper does not focus on the analysis of the questionnaire data, but on the design of the questionnaire. The next paper will report on the analysis of the data.

Prepare and disseminate report

As with all scholarly research, the background, setting, literature, framework and methodology, results, discussion and conclusions need reporting and made available to the key stakeholders, and published in peer-reviewed literature. The final report of this research will be sent to heads of departments and/or course coordinators in Australia and New Zealand and published in this Journal in due course.

Conclusion

The purpose of this paper has been to report on the process of designing and constructing a questionnaire that explores how cultural competency is included in the Australian and New Zealand paramedic curricula. The next step is to report on the analysis of the data. We believe that the design of our questionnaire is not only timely, but contributes to rectifying a gap in paramedic research by enabling an overview of such courses. The questionnaire design can be adapted to research other topics in the paramedic curriculum and allow researchers to compare the research outcomes of the paramedic curriculum with other health professions. The questionnaire results will also stimulate debate about the efficacy of cultural competency training in the paramedic curriculum compared with other health professions.

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