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Investigating Research

Critical Review: Bolton (2002)

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Critical Review: Chiropractor's attitudes to, and perceptions of, the impact of continuing professional education on clinical practice, by Bolton (2002)

Introduction

This research paper by Bolton (2002) attempted to investigate chiropractors' views, opinions and experiences of continuing professional education (CPE) and development (CPD) on clinical practice. It was her intention to explore chiropractors' perceptions of current CPE and its effects on their practice; the most appropriate method of CPE delivery transforming practice; as well as learning requirements of future CPE programmes. In Bolton's research she adopted a survey of self-administered questionnaire to collect primary quantitative and secondary qualitative data. She claims to have found that although chiropractors have positive perceptions of CPE, they questioned and doubted its influence on changing clinical practices. This review aims to assess how Bolton justifies these claims in relation to the method she adopted for her research study. Particularly, it will examine the significance and relevance of her research design, including sampling, data collection and the analysis of her research findings.

Research Design

Bolton adopted a simple survey design (see Bell, 2005), seemingly because she was seeking to collect administrative factual information from a large group of people. Apart from the primary quantitative data collected, she also felt the need to collect secondary qualitative data. This is presumably because closed-questions could not provide answers to some of her research questions, such as "how and why CPD/E had and had not changed clinical practice" (Bolton 2002, p.319), and this would have weakened some aspects of her findings. Although there were severe limitations (to be discussed later) to the largely quantitative approach used in designing this research study, her methodological choice was appropriate in helping Bolton's strategy to generalise (see Bell, 2005) her findings from the sample population to the target population.

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Sampling

Dowling and Brown (2010) declare that it is important to carefully consider the sampling technique employed because when generalisations are made outside the scope of the initial sample, one is likely to query the validity of those claims. Bolton (2002) adopted a random sampling (see Biggam 2011) technique in her selection of a fairly large sample of 200 chiropractors for her questionnaire and this equated to one quarter of chiropractors registered with the British Chiropractic Association. Bolton probably employed this method because she wanted to make claims about the whole population of chiropractors.

Although Bolton clearly defined the target population, she failed to thoroughly describe the sampling frame or explain how the sample was actually generated. Therefore it is difficult to determine who formed part of the sample and whether the survey population was a true representative of the target population. Consequently, it is challenging to examine the validity and reliability of her findings as insufficient information is provided.

While 77 per cent response rate was achieved, which according to Bolton (2002, p. 319) was equivalent to the views of "approximately one-fifth of the profession at the time", participants were required to opt in to participate in the survey and this in itself would have had some influence on the true randomness of the sample. Twenty-three per cent of the sample chose not to participate in the study and this resulted in attrition (a decrease in the number of participants in a research study) of the selected sample. Teddlie and Tashakkori (2009, p.232) argues that "attrition might pose a threat to the external validity (or generalizability) of the findings, especially if the non-respondents are systematically different from the respondents". Again Bolton offers no comment on the non-respondents, but one can assume this group from the original sample would have influenced her findings.

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Data Collection

Provenzale and Stanley (2006) specify that authors should explain their reason for selecting a specific methodological technique. However, Bolton did not present any justifications for using a cross-sectional, anonymous self-administered postal questionnaire, especially as there are "severe limitations on what can be achieved using a questionnaire" (Dowling and Brown 2010, p.72). There are also several implications with postal surveys as they are challenging to control and one cannot be certain of the individual who actually completes them and this has an impact on the sample (Dawson 2009). Other severe limitations to self-administered questionnaires are ensuring the responses received are suitable for comparison. Dowling and Brown (2010:72) claim that "this entails more than simply giving the same questions to all respondents. The researcher has to be confident that each question will be interpreted by each respondent in a similar manner". Nevertheless, it is not possible to guarantee this.

Bolton formulated her questionnaire using an instrument designed by other researchers for a similar purpose. Again she did not explain her reason for this but one could argue that it reduced the preliminary work required, thus reducing costs. She used a likert scale method for a greater part of her survey in measuring (using 5 point bi-polar likert scale) the attitudes and perceptions of chiropractors. This technique will be discussed further in the data analysis section. It is also interesting to note that Bolton did not declare whether her questionnaire was pre-tested seeing as all three open-ended questions only received a response rate of approximately one-third of the sample. This would have produced some difficulties at the data analysis stage (see De Vaus, 2002) and threatens her claim and findings of chiropractors' "views on how CPD/E had changed their practice to date...why CPE/D to date had not changed their practice...other comments they might have on CPD" (Bolton 2002, p.320-321).

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Data Analysis

A commendable aspect of her analysis is that Bolton analysed and reported findings on all four areas of her study. For the open-ended questions, she identified the emerging themes from all the respondents, coded them and compared each respondent's code with others for the same question. She correctly highlighted that the qualitative data were not verified by a second researcher or the respondents and therefore were exposed to her own biases.

Bolton alleged to have used a five-point likert scale ranging from 'strongly agree' to 'strongly disagree' in measuring the attitudes of chiropractors for her closed-answer questions. The notion behind the likert scale method is that to increase the reliability and validity of items, multiple items/statements are designed to relate to a single issue. The response to each item is then totalled for each respondent to give an aggregate score for the issue as a whole. It is argued that the practice of using a set of questions instead of a single item "increase reliability...the effects, of say, an unintentional bias in one of the items or of idiosyncratic response to one of the questions is reduced" (Dowling and Brown 2010, p. 75). It also helps in overcoming the inevitable variation in the interpretation of single items. However, in her analysis, it appears that Bolton reported on each item individually, rather than considering them together, thus undermining the purpose of the technique. As she treated each question separately, she reintroduces the same problems one tries to address using multiple items. Her somewhat strange use of the likert scale technique did not permit differentiation between respondents. It seems as if she exercised and produced an opinion poll on each of her items of statements.

Conclusion

Bolton's study attempted to investigate chiropractors' attitudes and perception of CPE and its impact on clinical practice. Her findings suggested that the majority of chiropractors demonstrated a positive attitude to CPE/D and considered the importance of remaining current with new knowledge, though there was a general perception that current CPE/D did

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not alter their clinical practice or enhance patient care. However, this review has highlighted weaknesses in Bolton's sampling, data collection and analysis, thus influencing her claims and attempt to generalise.

The main problem with this research study is that it is difficult to establish exactly what Bolton did as she provided limited information on her approach. She adopted a random sampling technique, yet she failed to explain how the sampling frame and sample was actually generated, which brings into question the true representativeness of her sample to the target population. Also, although she achieved a high response rate for her study, the randomness of her sample is questionable as respondents had to opt in to participate in the study. Furthermore, there were several limitations to using self-administered postal surveys and her strange interpretation and use of a likert scale technique made it difficult to assess the validity and reliability of her claims.

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