



Review

The effectiveness of short answers test papers in evaluating academic nursing programs: A review of the literature

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ABSTRACT

Short answer tests (SAT) are an assessment that examines nursing students' knowledge and can be used to evaluate expectations for student educational success. The purpose of this literature review is to combine the best available evidence as to whether short answer test papers meet nursing facility curricula learning outcomes. A literature review was performed consisting of data bases which included; ERIC, SCOPUS, CINAHL MEDLINE, COCHRANE LIBRARY and JOHANNA BIGGS INSTITUTE (JBI). The following keywords were used: Short answer test, written assessment, quiz, organisations, university, higher degree education, tertiary education, nursing, perceptions, attitude, opinions, thoughts, feeling and belief.

The majority of studies demonstrated that short answer tests equip nursing students with the knowledge and critical thinking skills for the clinical setting. Three major themes were identified: the effects of increasing class sizes; authenticity and the validity of short answer tests.

Short answer tests are commonly used in undergraduate nursing programs to evaluate students' level of knowledge which consists of their ability to critically analyse and problem solve. To maintain authenticity and validity of an assessment, there is a need for an evidence-based approach to their design to meet the core learning objectives within the curriculum.

1. Introduction

In nursing education, the measurement of students' knowledge and critical thinking skills is an important component for practice. It has been discovered short answer tests not only test knowledge but also stimulate the critical thinking process which is a skill all nurses need in making clinical decisions. Short answer tests can be defined as a test of objective knowledge which demonstrates the level of students thinking skills (Simpson and Courtney, 2002; Earl, 2013; Maxwell, 2010). These tests are considered to meet students learning needs and align with the nursing curriculum outcomes (Epstein, 2007; Kong et al., 2014; Chong et al., 2016). However, due to economic pressures short answer test can be seen as labour intensive (Earl, 2013) and are often overlooked when assessments are planned. This review investigates the benefit of short answer tests in undergraduate nursing education.

2. Background

Disciplines such as Nursing test a student's ability to retain and apply knowledge using different methods of assessment. This determines whether the student has the skills and knowledge that meet

the expected outcomes of the core curriculum (Gilles et al., 2011). Several authors have stated, that short answer tests (sometimes known as standardised assessment) are used to test students' knowledge, encourage the critical thinking process and to evaluate the effectiveness of curriculum learning outcomes because these assessments promote the students' retention of learning materials (Simpson and Courtney, 2002; Larsen et al., 2008; Pinter et al., 2014). According to Larsen et al. (2008) two theories explain how this occurs. One theory proposes that the level of memory retention can be measured by how much information a student retrieves during the assessment. The other theory implies that short answer tests demonstrates a student's understanding of the learning material when they are required to retrieve information from memory during the assessment (Larsen et al., 2008; McConnell, et al, 2015). Historically, this form of assessment has been used in a number of countries for civil service such as the Chinese government since 650 before the Common Era (BCE) (Elman, 2009). Nevertheless, it is only in the last twenty years that research by higher degree facilities such as nursing education and medicine has identified that short answer questions increase the memory retention of materials and promote the critical thinking process (Gilles et al., 2011; Larsen et al., 2008; McConnell, et al, 2015).

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Short answer tests can be used in many forms of examinations. Several studies have reported that nursing education programs are moving towards performance-based assessments, which can test students' reasoning skills, problem-solving ability; Knowledge acquisition and to promote the development of critical thinking skills (Simpson and Courtney, 2002; Epstein, 2007; Jeppesen et al., 2017; Gulikers et al., 2006; Pinter et al., 2014; Kong et al., 2014). According to Wolniak et al. (2012) it has been established that performance-based assessments are linked to student retention. However, short answer tests using case studies also known as problem-based learning are still commonly used as assessment tools for nursing and medical education in universities worldwide (Simpson and Courtney, 2002; Schmidt et al., 2009; Kong et al., 2014).

Community expectations have influenced changes in the delivery mode of assessments due to the increasing trends of technology. For example, Earl (2013) states that due to students' demand for flexibility, class sizes have increased and the majority higher degree education facilities have implemented models of blended learning. Blended learning incorporates online resources into the teaching plan and enables students to retrieve and revise material in their own time. In return this has increased tertiary educators stress and workload levels to meet students' demands for more flexible learning environment that is open to students 24 h a day. This has resulted in course designers creating software tools such as online marking which is replacing in-class short answer tests (Earl, 2013).

In nursing education, Jeppesen et al. (2017) state blended learning strategy such as online teaching is only effective when combined with classroom simulation. Whereas, Segers et al. (2006) argue that the main objective of higher degree education is to prepare individuals with skills to be able to operate in a complex world. However, cultural and societal changes to higher degree education facilities have led to the adoption of models of blended learning that has resulted in some graduates perhaps lacking qualities and skills required when addressing a professional situation (Segers et al., 2006). This may occur because of the difficulties of assessing a student's level of skill in the online environment. To ensure students are adequately assessed, short answer test questions, administered following a face to face demonstration of skills can, perhaps, ensure that students are developing the knowledge they require for the nursing workforce (Jeppesen et al., 2017). Therefore, it is timely to consider the benefit of short answer test questions in nursing education to establish if and whether they facilitate the retention of information vital to the students' future professional practice.

To establish the benefit of short answer tests in nursing education it is essential that short answer tests not only facilitate the retention of information but also foster critical thinking skills that is essential for quality and safe care (Kong et al., 2014; Simpson and Courtney, 2002; Chong et al., 2016). Through the introduction of authentic problem-based tests, nursing students' learning outcomes are enhanced which will prepare students for the clinical setting (Chong et al., 2016).

The purpose of this literature review is to examine benefits of short answer tests within a world-wide educational context. Several authors have reported the following items have been proven to have positive impact and to be beneficial. However, one item (increasing class size) acts as a potential barrier to short answer tests but this can be used as an opportunity to test students level of knowledge accurately. The two benefits identified is authenticity and validity and of short answer tests. As according to Segers et al. (2006) the majority of higher degree education assessments do not equip students with the necessary professional skills needed for the workforce. Therefore, an evaluation of assessments such as short answer tests needs to consider the following: whether the assessment is evidenced-based; if the learning outcomes in the curriculum have been accomplished; and if these learning outcomes are aligned with the assessment (Segers et al., 2006; Pinter et al., 2014).

3. Aim

The purpose of this study is to summarise the benefits of short answer tests and to review whether the learning outcomes align with educational curriculum.

4. Method

4.1. Research question

Due to the ever-changing health care environment and the complexity of care there is a need for nurses to think critically in order to provide effective and safe patient care. As mentioned, short answer tests have been proved to enhance and/or develop students critical thinking skills. The literature compared students and educational facilities results of short answer tests to determine if the curriculum learning outcomes were being met. In Australia educational facilities, such as nursing, implement short answer tests in the form of problem-based scenarios to test students' knowledge which promote critical thinking skills. Hence, in the United States short answer tests are used as an objective measurement tool to evaluate academic programs and knowledge content (Pinter et al., 2014; Larsen et al., 2008). Therefore, it needed to be determined if this type of assessment addresses the curriculum learning outcome and meets students' educational needs.

4.2. Research design

A qualitative literature review approach explored the perceptions of short answer tests and evaluated whether the curricula outcomes had been met. The review followed the international standard guideline of preferred reporting items for integrated reviews and meta-synthesis (PRISMA) outlined by Shea et al. (2007). The Prisma flow diagram illustrates the selection process of the study. The steps addressed were: searching the literature; critical appraisal of selected journal articles; reading and extracting data from journal articles; synthesising data into a summary table; and identifying thematic analysis of short answer tests which form the recommendations.

4.3. Search strategy

The literature review was conducted with the assistance of the Nursing and Midwifery librarian which consisted of a search of the following databases: ERIC, SCOPUS, CINAHL, MEDLINE, COCHRANE LIBRARY and JOHANNA BIGGS INSTITUTE (JBI) from 2005 to 2017 and was limited to English language. The keywords used included: Tertiary education; higher degree education; short answer quizzes; short answer assessment; educational test and measurements; assessments; views, opinions and attitudes. Primarily, the literature search found 68 articles. However, after a comprehensive review of the title and abstract against the inclusion criteria, 6 articles were found to meet these criteria.

4.4. Inclusion criteria

This review considered any qualitative or quantitative article published that reported on the effectiveness of short answer tests between 2005 and 2017 in the English language. However, if a quantitative article was included in the final 6 selected articles, the data discussed in the results and discussion was synthesised and a thematic analysis was conducted. Literature was used in other educational disciplines other than nursing due to limited articles published about assessment items such as short answer tests used in nursing (see PRISMA diagram Fig. 1).

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