Student nurse selection and predictability of academic success: The Multiple Mini Interview project

Julia Gale [a], Ann Ooms [b], Robert Grant [c], Kris Paget [d], Di Marks-Maran [e,*]

[a] Kingston University and St George's University of London, Kingston Hill, Kingston-Upon-Thames KT2 7LB, UK
[b] Faculty of Health, Social Care and Education, Kingston University and St George's University of London, Kingston Hill, Kingston-Upon-Thames, KT2 7LB, UK
[c] Health and Social Care Statistics, Faculty of Health, Social Care and Education, Kingston University & St George's University of London, UK
[d] Kingston University & St George's University of London, Kingston Hill, Kingston-Upon-Thames KT2 7LB, UK
[e] Kingston University & St George's University of London, UK

SUMMARY

Background: With recent reports of public enquiries into failure to care, universities are under pressure to ensure that candidates selected for undergraduate nursing programmes demonstrate academic potential as well as characteristics and values such as compassion, empathy and integrity. The Multiple Mini Interview (MMI) was used in one university as a way of ensuring that candidates had the appropriate numeracy and literacy skills as well as a range of communication, empathy, decision-making and problem-solving skills as well as ethical insights and integrity, initiative and team-work.
Objectives: To ascertain whether there is evidence of bias in MMIs (gender, age, nationality and location of secondary education) and to determine the extent to which the MMI is predictive of academic success in nursing.
Design: A longitudinal retrospective analysis of student demographics, MMI data and the assessment marks for years 1, 2 and 3.
Settings: One university in southwest London.
Participants: One cohort of students who commenced their programme in September 2011, including students in all four fields of nursing (adult, child, mental health and learning disability).
Methods: Inferential statistics and a Bayesian Multilevel Model.
Results: MMI in conjunction with MMI numeracy test and MMI literacy test shows little or no bias in terms of ages, gender, nationality or location of secondary school education. Although MMI in conjunction with numeracy and literacy testing is predictive of academic success, it is only weakly predictive.
Conclusions: The MMI used in conjunction with literacy and numeracy testing appears to be a successful technique for selecting candidates for nursing. However, other selection methods such as psychological profiling or testing of emotional intelligence may add to the extent to which selection methods are predictive of academic success on nursing.

1. Introduction

Universities are responsible for recruiting and selecting students who possess the right aptitudes, values and potential capacity for nursing and midwifery innovation (Callwood et al., 2012). However, recruiting and selecting the right students onto academic nursing programmes is a challenging task for Higher Educational Institutions (HEIs). In the United Kingdom (UK), HEIs are under scrutiny and they are held more accountable than ever before for the quality of the education and support they provide and in driving up standards for positive impact of qualified nurses on patient outcomes (Royal College of Nursing, 2012).

Although student satisfaction, retention, and employability are a few of the quality measures against which universities are judged, nursing education is under additional scrutiny because of perceived failures in practice to deliver safe and appropriate care to service users (Francis, 2013). As a result, nursing education is undergoing many changes at different levels, including how students are selected for nursing programmes.

The recent reports into failures of care at the Mid Staffordshire NHS Trust in the UK (Francis, 2013) emphasised the need for universities to identify people with the right attributes to enter the profession of nursing. These reports recommended that, as a condition of being accepted

* Corresponding author.
E-mail addresses: J.Gale@sgul.kingston.ac.uk (J. Gale), a.ooms@sgul.kingston.ac.uk (A. Ooms), robert.grant@sgul.kingston.ac.uk (R. Grant), k.paget@sgul.kingston.ac.uk (K. Paget), marksmaran@btopenworld.com (D. Marks-Maran).

onto a nursing degree, aspiring nurses need to demonstrate appropriate values as well as a desire to care for patients, and that this should be tested at the point of selection.

In response, the School of Nursing in a Faculty of Health, Social Care and Education in one university in London, UK, implemented a new method for selecting students who apply to the undergraduate nursing programme. This involved the use of the Multiple Mini-Interview (MMI) in conjunction with numeracy and literacy testing. The MMIs are based on six fundamental values, known as the 6Cs (Department of Health (2012)). The 6Cs are: care, compassion, competence, communication, courage and commitment.

The Nursing and Midwifery Council (NMC) in the UK sets standards and procedures for recruitment and selection of student nurses. These can be categorized under three main themes: academic criteria, 'good health' and 'good character' (NMC, 2010). More recently, Health Education England (HEE) has recommended the inclusion of value-based recruitment into nursing (HEE, 2013). Evaluating a candidate's ability to exhibit core nursing values should ensure that the correct candidates will be recruited and will excel in the healthcare environment (DH, 2012).

Nursing is a complex job which relies on relationships with patients. Future recruits need a combination of intellectual and social skills, as well as attributes such as empathy, honesty and integrity — traits not often revealed through more traditional interview techniques. The MMI is a value-based approach aiming to recruit students with the right values and attitudes of caring, honesty, compassion, leadership and decision-making to become compassionate and caring professionals with good communication skills. Thus, non-cognitive competencies are assessed at interview, alongside assessment of cognitive abilities through numeracy and literacy tests. It is therefore important that these three selection methods are valid and that applicants from diverse backgrounds have equal opportunities to be successful. In addition, the predictive validity of the MMI, numeracy and literacy tests also needs to be assessed.

Literacy and numeracy testing has been a component of student nurse selection in most universities, usually combined with an interview. More recently, the MMI is being used by universities across the world to recruit medical students, and is beginning to be used for the recruitment of nursing students. The MMI process is described later in this article. In 2011, the School of Nursing at Kingston University and St George's, University of London (KU/SGUL) introduced the MMI into student nurse selection for candidates applying for their BSc (Hons) and Postgraduate Diploma pre-registration Nursing Programmes. This paper presents a research study undertaken to evaluate the validity and equality of the MMIs for one such cohort.

2. Literature Review

Recent studies show that universities employ many diverse methods for selecting candidates to enter nursing programmes and that there is an absence of evidence-base for most selection methods employed (Taylor et al., 2014). Methods currently used nationally and internationally include academic success/grades in secondary school (Salvatori, 2001, Timer and Clauson, 2011) and more recently, use of emotional intelligence tests (Zysburg et al., 2011; Rankin, 2013) and psychological profiling (McLaughlin et al., 2007). There is some evidence that academic success in secondary school is a predictor for clinical success in nursing (Timer and Clauson, 2011).

In the UK, the NMC requires that universities undertake some form of face-to-face interview when selecting candidates. Despite this, questions have been asked in the literature about the reliability and validity of interviews as a selection method (Ehrenfeld and Tabak, 2000; Salvatori, 2001). Although nursing schools desire, promote and value in their students non-cognitive skills such as integrity, ethical judgement, values and empathy, it has not always been clear whether traditional interviewing methods reveal these traits (Eva et al., 2004).

As a result interview questions refer primarily to the programme and subsequent profession and responses from candidates are more likely to be learnt in advance rather than assess the character of the candidate (Perkins et al., 2012). It has also been suggested that the problem of bias may occur, for instance, where a candidate is fortunately placed with an interviewer of 'like mind' or with one who can influence an interview panel, whereas an incompatible relationship can prove unfavourable (Quintero et al., 2009). They suggested that an interview outcome can be influenced by a "halo effect" where decisions of the panel are influenced more by general feelings of 'like or dislike' than on the answers given by or actual qualities of the interviewee.

To address some of these issues surrounding the selection of candidates, universities are adopting new approaches to selecting candidates for nursing programmes. An example is the use of group activities (Eva et al., 2004; Miller, 2015). Another is the Multiple Mini Interview. MMIs were introduced into the selection of medical students at McMaster University in Canada (Eva et al., 2004). The MMI is now used in the selection of medical and other healthcare students across the world. Early research suggests that the MMI may be a reliable and valid way of selecting nursing students (Rosenfeld et al., 2008; Lemay et al., 2007; Perkins et al., 2012). The more recent pilot study by Perkins et al. (2012) suggests that applicants' characteristics demonstrated at the MMI match with subsequent performance.

There is evidence in the literature (e.g., Mooney et al., 2008; Morris Thompson et al., 2011) that even in the 21st century, the main reason for choosing nursing as a career is the desire to help and care for others. However, there is an absence in the literature about how to assess these traits on interview. Evidence suggests that new ways of selecting students onto nursing programmes are needed using methods such as aptitude and ability testing and using group exercises to demonstrate abilities in team-working, logical thinking and critical reasoning (Miller, 2015), use of psychological assessments and use of clinical and ethical scenarios (Lemay et al., 2007). Additionally, studies have been undertaken in New Zealand (e.g., Shulruf et al., 2011) into predictors of success of student nurses. Shulruf et al. (2011) found that academic success in the last year of secondary school was the best predictor of success as a student nurse. Similar findings were reported in other countries by Ali and Naylor (2010) Salvatori (2001), Lancia et al. (2013) and Wong and Wong (1999). However, in all of these studies, the definition of success was measured by academic success in nursing schools rather than caring skills, communication, empathy or values.

Although a link has been suggested between student nurse attrition and methods of selection used by schools of nursing, the literature related to attrition is not included in this literature review. However, a number of studies have suggested that student retention may be influenced by selection processes (McCallum et al., 2006; McCarey et al., 2006). Yet analyses of these studies do not include how attributes such as caring, empathy, communication and values were assessed at selection.

A further study by Wood (2014) although not about MMIs as a selection method, reported on a selection method used at one university where candidates are interviewed jointly between a representative from the school of nursing and one from clinical practice. The interview process uses a template of questions designed to assist in selecting students who have both the academic potential as a nurse as well as the potential to care using probing questions about caring attitudes and asking candidates to discuss previous experiences with team working and communication. However, this was a descriptive article with no evidence of any evaluation research being undertaken into the effectiveness of the approach to selection.

More recently, emphasis is emerging about the importance of values-based recruitment in healthcare (Miller, 2015). Health Education England (HEE) which is responsible for the education, training and personal development of all staff in the health service has published a framework for values-based recruitment. This is an approach that attracts and selects students, trainees or employers on the basis of their individual values and behaviours to ensure that they match with