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Relationship between reflection ability and clinical performance: A cross-sectional and retrospective-longitudinal correlational cohort study in midwifery

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ABSTRACT

Background: increasingly, reflection is highlighted as integral to core practice competencies but empirical research into the relationship between reflection and performance in the clinical workplace is scarce.
Aim: this study investigated the relationship between reflection ability and clinical performance.
Methods: we designed a cross-sectional and a retrospective-longitudinal cohort study. Data from first, second and third year midwifery students were collected to study the variables 'clinical performance' and 'reflection ability'. Data were analysed with SPSS for Windows, Release 20.0. Descriptive statistics, Pearson's Product Moment Correlation Coefficients (r) and r^2 values were computed to investigate associations between the research variables.
Findings: the results showed a moderate observed correlation between reflection ability and clinical performance scores. When adopting a cross-sectional perspective, all correlation values were significant ($p < 0.01$) and above 0.4, with the exception of the third year correlations. Assuming perfect reliability in the measurement, the adjusted correlations, for year 2 and year 3 indicated a high association between reflection ability and clinical performance (> 0.6). The results based on the retrospective-longitudinal data set explained a moderate proportion of the variance after correction for attenuation. Finally, the results indicate that 'reflection ability' scores of earlier years are significant related with 'clinical performance' scores of subsequent years. These results suggest that (1) reflection ability is linked to clinical performance; (2) that written reflections are an important, but not the sole way to assess professional competence and that (3) reflection is a contributor to clinical performance improvement.
Conclusions: the data showed a moderate but significant relationship between 'reflection ability' and 'clinical performance' scores in clinical practice of midwifery students. Reflection therefore seems an important component of professional competence.

Introduction

The midwifery professional (i.e. the fully qualified midwife) is an individual who has met the International Confederation of Midwives (ICM) Definition of a Midwife (International Confederation of Midwives, 2011) and who has been educated and who has demonstrated competency in performance of the ICM Essential Competencies for Basic Midwifery Practice (International Confederation of Midwives, 2013). Reflection is increasingly highlighted as an integral part of professional competence (Wald and Reis, 2010; Fullerton et al., 2011). It is generally assumed that reflective practice, that is, the willingness of students to think critically and to engage themselves in reflection upon their professional activities, contributes to the performance improvement (Epstein, 1999; Maudsley and Strivens, 2000; Guest et al., 2001; Mamede and Schmidt, 2004). The notion of reflection as a contributor to performance improvement has its roots in the work of John Dewey. Dewey's philosophy (1938) proposes a

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theory that puts personal experiences at the centre of education. Sound educational experiences guarantee continuity and interaction between the learner and what is learned. The challenge for experience-based education is to provide learners with quality experiences that result in growth. A key element of experience-based learning is that learners are invited to analyse their experiences by reflecting, evaluating and reconstructing them. Building on earlier experiences, this analysis helps drawing meaning from new experiences. These explicit deliberations upon experiences may lead to further action (Kolb, 1984; Boud et al., 2000). Interest in the theme of reflection with the goal of improving clinical performance has seen an exponential growth. However, hardly any empirical research has been conducted into the relationship between reflection and performance (Wald and Reis, 2010; Mann, 2011; Lew and Schmidt, 2011).

The relationship between reflection and performance is part of the definition of professional competence: 'the habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and the community being served' (Epstein and Hundert, 2002). Within this definition, reflection is identified as a core skill for professional development (Friedman Ben David et al., 2001; Wald and Reis, 2010). Reflection is intended to deepen understanding and to explore the broader context of experience (Sandars, 2009; Mann, 2011). Although a recent study by Lew and Schmidt (2011) found that the self-reflection resulted in limited improvement in academic performance, there is evidence that reflection can help learners in understanding and assimilating new concepts, contextualising learning and enabling performance improvement (Moon, 1999; Boud and Walker, 2002; Grant et al., 2006; Mann et al., 2009; Mann, 2011; Azer et al., 2013).

As reflection does not develop automatically, health care educators look for educational strategies promoting the development of the reflective capacity as early as possible in the training process. In this context, reflective writing has been described as an effective mechanism promoting self-reflection within medical education (Charon, 2006; Moulton et al., 2007; Wald and Reis, 2010). However, research about reflective writing in medical education has remained largely anecdotal or was based on student self-reporting (Wald et al., 2012). A review concluded that reflection research is still at an early stage and that exploratory research approaches are appropriate to develop deeper understanding of reflective learning and how this is related to performance improvement (Mann et al., 2009).

The purpose of the present study was to investigate the relationship between reflection ability and clinical performance. The research question, then, was: Is there a relationship between reflection ability and clinical performance? We used clinical performance scores as the best proxy of professional competence. This is in line with While (1994) who makes an important distinction between the concepts of 'competence' and 'performance' in midwifery and nursing. She concluded that as competence is concerned with perceived skills, it cannot be directly measured, whereas performance as actual situated behaviour is open to measurement and reflects what midwives and nurses actually do in clinical practice (Fleming et al., 2011). We analysed clinical performance data both cross-sectionally and longitudinally to study the relationship with reflective ability.

Method

Context

The Midwifery department of the University College Artevelde-hogeschool Ghent (Belgium) offers a three-year undergraduate competency-based programme (corresponding 180 credit points). According to the European Directives, clinical placement is an essential phase of the midwifery programme during which students develop their competencies in authentic clinical environments. Students attend clinical placements in each of the three years of the programme (corresponding 70 credits) and in different settings (Table 1). Clinical placement is based on an integrated reflective learning and assessment strategy (Embo et al., 2010). In order to promote reflective learning, students are instructed to reflect on their competency development at the end of each clinical placement. These written reflection assignments are scored from 1 to 20 by a clinical teacher according to preset assessment criteria. Clinical teachers are practitioners that observe learners in the workplace setting and take a responsibility in their assessment. The criteria assess the effectiveness of the reflection cycle on clinical performances and on competency development. An important criterion is whether the students' reflections are authentic. Therefore, the clinical teacher and the clinical supervisors who observed the student assess these reflections. These scores are used in this study as the 'reflection ability' data set. Assessment of clinical performances is based on a competency-based rating scale. Each competency consists of a set of context-specific assessment criteria. In the rating scale, different levels in competency mastery are expected for year 1, year 2 and year 3. The clinical supervisor and the clinical teacher for each clinical placement assess the student's performance with the help of the rating scale. The school assessment committee aggregates pass/fail judgments on individual competency level into a final judgment on midwifery competence (score from 1 to 20). These scores are used in this study as the 'clinical performance' data set. The school assessment committee consists of all clinical teachers involved in the programme. Learners are informed about the score assigned by the school assessment committee and there is an opportunity to ask for feedback from clinical teachers. In this way, they can be seen as learning aids, providing feedback and guidance for further workplace learning.

Data collection

Data from first, second and third year students were collected to study the variables 'clinical performance' and 'reflection ability'. We designed a cross-sectional and a retrospective-longitudinal cohort study to answer the research question. This combined design was important due to the high dropout rate in the first year. In Belgium, with the exception of medicine and dentistry, no entry requirements are set other than the diploma of secondary education to start most higher education programmes. Consequently between 25% and 45% of starting students leave during the first year of the programme. In the cross-sectional design, all the students who did a clinical placement in the first year, were included, even those who later left the programme. This is different from the retrospective longitudinal design in which only data are included of graduates that completed the three consecutive years.

Thus, data were collected in two ways: (1) the cross-sectional data were collected in September 2013 from all first ($n=69$), second ($n=50$) and third ($n=50$) year students who completed their clinical placements in the academic year 2012–2013; (2) the retrospective longitudinal data were collected from a sample of 95 students who graduated in September 2012 ($n=43$) and September 2013 ($n=52$) and incorporated also the data of their involvement in the study programme in the earlier two years (starting in September 2009).

Data analysis

Data were analysed with SPSS for Windows, Release 20.0. Descriptive statistics, Pearson's Product Moment Correlation Coefficients (r)