Exploring how reflective practice training affects nurse interns’ critical thinking disposition and communication skills

Amal Ibrahim Khalil and Ebtsam Abou Hashish

Abstract

Background It is useful for nurses to be able to engage in reflective practice. Reflective practice is an essential aspect of experiential learning.

Aim To explore how reflective practice training during an internship programme in Saudi Arabia affected nurse interns’ critical thinking disposition and interpersonal communication competency.

Method A convenience sample of 93 senior nursing students undertaking the internship programme at a nursing college in a university in Saudi Arabia answered a questionnaire before and after taking part in reflective practice training sessions. The questionnaire used three tools: the Reflective Practice Questionnaire; the Critical Thinking Disposition Scale; and the Interpersonal Communication Competency Scale.

Results After the training, the overall mean scores for reflective practice, critical thinking disposition and interpersonal communication competency were significantly higher than before the training. Reflective practice had a positive correlation with critical thinking disposition and interpersonal communication competency. It also had predictive capability for the variance in critical thinking disposition and interpersonal communication competency ($R^2=0.798$ and $R^2=0.553$, respectively, $P<0.001$).

Conclusion Reflective practice training provided to nurse interns in Saudi Arabia improved their reflective practice, critical thinking and interpersonal communication. Reflective practice training would be a useful addition to pre-graduate nurse education and to preceptorship or orientation programmes for newly recruited nurses.

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Keywords

communication, continuous professional development, curriculum, education, experiential learning, interpersonal skills, nurse academics, pre-registration education, professional, reflection, training, universities

Background

To deliver high-quality care and manage potentially challenging situations in an increasingly complex environment, nurses need theoretical knowledge and sound reasoning, critical thinking and interpersonal skills (Alnajjar and Abou Hashish 2021, 2022). One of the aims of pre-graduate nurse education.
is to promote the application of theoretical knowledge to clinical practice, therefore
nursing students need opportunities to access experiential learning (Makhlof and El-Saman

There is substantial evidence that reflective practice is beneficial to nurses and that nurse
education programmes play an important role in developing their reflective practice
ability (Kelly et al 2016). Incorporating reflection into practice can support nurses in
developing a sense of power and agency, cultivating critical thinking skills and
developing professionally (Bolden et al 2011, Tutticci 2017, Walton et al 2018). However,
there is a lack of direct measurement of nursing students’ and nurses’ reflective practice
and of their engagement in the metacognition (awareness of one’s thought processes and understanding of the underlying patterns) required to think critically and communicate effectively (Tutticci 2017, Yu et al 2019).

In Saudi Arabia, where senior nursing students undergo a one-year internship after their final undergraduate academic year before qualifying as nurses, the reflective practice ability best suited for transitioning from senior nursing student (or nurse intern) to newly graduated nurse has not been clearly defined. Therefore, the authors wanted to explore reflective practice among nurse interns in a Saudi Arabian nursing college and the effects of reflective practice training on their critical thinking disposition and interpersonal communication competency. Reflective practice training sessions were used as the study intervention.

Definition of terms
The study was designed to explore how reflective practice training affected three variables – reflective practice, critical thinking disposition and interpersonal communication competency – which are defined below.

Reflective practice
According to Dewey (1933), reflection is the active, persistent and meticulous examination of any belief or alleged form of knowledge in light of the premises that sustain it and the conclusions to which it leads. Building on Dewey’s conceptualisation, Schön (1983) classified reflection into two categories:

» Reflection on action – reflection occurring after an event where the person assesses retrospectively how they have managed a situation, for example in comparison with others.

» Reflection on action – reflection occurring after an event where the person

Implications

for education

and practice

» Nurse managers and educators may want to include reflective practice training in orientation or preceptorship programmes for newly recruited nurses

» Higher education institutions may want to consider introducing reflective practice training in nursing education curricula

» Tools for encouraging reflective practice among nurses and nursing students include diaries, logbooks, blogs, portfolios, reflective statements, reflective essays, self-assessment and peer assessment

» Nurse educators could use reflective practice training as a strategy to move from the traditional lecture-based teaching format to immersive learning, which is more engaging for students and teachers

Critical thinking disposition
Another important component of nursing practice is critical thinking, which can be described as “the process of searching, obtaining, evaluating, analysing, synthesising and conceptualising information as a guide for developing one’s thinking with self-awareness, and the ability to use this information by adding creativity and taking risks’ (Yıldırım and Özkahraman 2011). Critical thinking requires essential cognitive abilities and affective dispositions. A person’s critical thinking disposition refers to specific features of their thinking process that promote critical thinking. Sosu (2013) developed a scale to assess a person’s critical thinking disposition based on two dimensions:

» Critical openness – an aspiration to be exposed to new ideas and alter one’s beliefs in light of them.

» Reflective scepticism – an inclination to question evidence.

Interpersonal communication competency
Interpersonal communication competency is another important component of nursing practice. The quality of communication between nurses and patients significantly affects nurses’ professional development (Pang et al 2019) as well as patient outcomes (Nokuthula Sibiya 2018). Optimal interpersonal communication competency enables nurses to evaluate patients’ needs and circumstances successfully and respond accordingly. It requires an understanding of the principles of communication, the ability to perceive and interpret verbal and non-verbal means of communication, objectivity, self-awareness and clarity of thought and expression (Rubin and Martin 1994).
Nurse interns in Saudi Arabia

Nurse education in Saudi Arabia differs from that in the UK. In Saudi Arabia, the bachelor’s degree in nursing is obtained after four years of academic study followed by a one-year internship (Aljohani 2020). In most Saudi universities, internships follow the supervised practice model, where senior nursing students – known as nurse interns – are supervised by practice nurses in a hospital setting (AlThiga et al 2017). Nurse interns undertake patient care under the supervision of experienced nurses and preceptors.

A well-planned internship supports nurse interns to develop competence, confidence and a professional attitude, and gives them the opportunity to explore different areas of nursing to find the most suitable one for them (Makhlof and El-Saman 2017). To be allowed to practise, nurse interns must pass the Saudi Nursing Licensing Exam during or after their internship (Aljohani 2020).

There is no direct equivalent in the UK of the one-year internship nursing students undertake in Saudi Arabia. Nursing students in the UK gain practical experience by undertaking a series of clinical placements during their undergraduate nursing education. After graduation, newly registered nurses undergo a preceptorship period to support transition from newly recruited to autonomous professional. Newly recruited nurses are mentored by an experienced professional, called a preceptor, so that they can refine their professional skills, values and behaviours and develop the confidence to practise as autonomous professionals (Nursing and Midwifery Council 2020, NHS Employers 2021).

Aim

To explore how reflective practice training during an internship programme in Saudi Arabia affected nurse interns’ critical thinking disposition and interpersonal communication competency.

Method

Design, setting and participants

The researchers used a quasi-experimental study design to assess participants’ reflective practice, critical thinking disposition and interpersonal communication competency before and after reflective practice training sessions. Convenience sampling was used to recruit participants among the 95 nurse interns in the March cohort of the 2019-2020 internship programme at the College of Nursing-Jeddah at King Saud bin Abdulaziz University for Health Sciences in Saudi Arabia. Ninety-three of the 95 nurse interns (98%) agreed to participate.

Intervention

The researchers delivered the reflective practice training sessions (study intervention) in July and August 2020 to provide nurse interns with knowledge of reflective practice and how it is used in nursing practice in hospitals. The content of the sessions was developed based on the current literature. The researchers developed a handout outlining the sessions’ content, which had been reviewed by academic experts.

The 93 participants were divided into five groups of 18 or 19 nurse interns. Each group took part in five training sessions lasting two hours each, the researchers delivering 23 sessions in total. Before the first session, participants were asked to sign an informed consent form and complete a pre-intervention questionnaire. They were provided with the handout outlining the sessions’ content.

In the first two sessions the researchers built a rapport with participants and delivered the theoretical components of the training. The subsequent three sessions focused on putting theory into practice. The training was delivered using interactive lectures, video presentations, case studies, brainstorming, role playing, modelling and small-group discussions. Participants were asked to write down their reflections and were given comments on their work. After the last session, participants were asked to complete a post-intervention questionnaire and provide feedback about the training.

Questionnaire

The pre-intervention questionnaire comprised four sections:

- Sociodemographic data.
- The Reflective Practice Questionnaire (RPQ) (Priddis and Rogers 2018).
- The Critical Thinking Disposition Scale (CTDS) (Sosu 2013).
- The Interpersonal Communication Competency Scale (ICCS) (Rubin and Martin 1994).

In the first section, participants indicated their age, marital status, past working experience of nursing, knowledge of reflective practice, sources of information about reflective practice (if any) and whether they had attended reflective practice training in the past.

The RPQ (Priddis and Rogers 2018) comprises ten four-item subscales: ‘reflective-in-action’; ‘reflective-on-action’; ‘reflective
with others’; ‘self-appraisal’; ‘desire for improvement’; ‘confidence (general)’; ‘confidence (communication)’; ‘uncertainty’; ‘stress interacting with clients’; and ‘job satisfaction’. Participants were asked to rate the items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A higher score indicated a higher reflective practice ability.

The CTDS (Sosu 2013) comprises 11 items assessing the domains of ‘critical openness’ (four items) and ‘reflective scepticism’ (seven items). Participants were asked to rate the items on a five-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement. A higher score indicated a higher critical thinking disposition.

The ICCS (Rubin and Martin 1994) comprises 17 items categorised in five dimensions: ‘environmental control’ (four items); ‘self-disclosure’ (four items); ‘assertiveness’ (four items); ‘interaction management’ (two items); and ‘immediacy’ (three items). Participants were asked to rate the items on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The higher the score, the better the interpersonal communication competency.

The three tools were used in their English version after their validity had been reviewed by a panel of independent experts. The tools’ internal reliability was verified using Cronbach’s alpha correlation coefficient. The RPQ, ICCS and CTDS all had good reliability, with correlation coefficient values of 0.849, 0.759, and 0.729 respectively (statistical level of ≤0.05 was used in all analyses). Using regression analysis (R²), a statistical significance level of ≤0.05 was used in all statistical analyses.

The pre-intervention and post-intervention mean scores for the variables were compared using a paired t-test. The Pearson correlation coefficient (r) was used to examine the correlations between the variables. The predictive power of reflective practice for critical thinking disposition and interpersonal communication competency was tested using regression analysis (R²). A statistical significance level of ≤0.05 was used in all statistical analyses.

### Ethical considerations

Approval for the study had been gained from the university’s institutional review board (IRB-RJ20/038[J]). All nurse interns volunteered to attend reflective practice training and gave written consent to participate in the study. Participants were assured that confidentiality would be respected and their data would remain anonymous. They were informed of their right to withdraw from the study whenever they wished.

### Results

#### Participants

The mean age of participants was 22.8 years (SD=1.41). Most participants (n=82, 88%) were single and had no working experience of nursing before the internship programme. About two-thirds of participants (n=59, 63%) had not previously received information about reflective practice, versus 37% (n=34) who had. The source of previously received information about reflective practice was lectures during nursing studies. All participants were willing to use reflective practice during their internship if they were provided with adequate information and training.

#### Effects of reflective practice training

Table 1 shows the detailed mean scores for the subscales of the RPQ, the domains of the CTDS and the dimensions of the ICCS before and after the intervention. Table 2 shows the overall mean scores for each tool before and after the intervention.

Over all, participants’ mean scores for reflective practice, critical thinking disposition and interpersonal communication competency had increased substantially before and after the reflective practice training sessions (P<0.001). There was a substantial increase in the overall mean score for reflective practice from 3.13 to 3.95 (P<0.001). Within the RPQ, the largest score increases were in the ‘reflective with others’, ‘reflective-in-action’ and ‘desire for improvement’ subscales (P<0.001). The mean score for one of the ten subscales, the ‘uncertainty’ subscale, decreased from 3.23 to 3.00 (P=0.006).

The overall mean score for critical thinking disposition increased from 3.21 to 4.39 (P<0.001) and both domains of the CTDS, reflective scepticism and critical openness, had significant increases (P<0.001).

The overall mean score for interpersonal communication competency increased from 3.06 to 4.01 (P<0.001). The increase was significant in all dimensions of the ICCS, especially in the ‘self-disclosure’ and ‘immediacy’ dimensions.
Correlation coefficient and regression analysis
Table 3 shows the results of the statistical analyses conducted to determine the correlation between reflective practice and critical thinking disposition and between individual subscales and interpersonal communication competency.

There was a significant moderate positive correlation between reflective practice and critical thinking disposition \((r=0.352, P<0.001)\) and between reflective practice and interpersonal communication competency \((r=0.243, P<0.001)\). There was also a significant strong positive correlation between interpersonal communication competency and critical thinking disposition \((r=0.701, P<0.001)\).

Regression analysis showed that reflective practice could predict around 80% and 54% of the variance in critical thinking disposition and in interpersonal communication competency, with a coefficient of determination \((R^2)\) of 0.798 and 0.535, respectively. These results were statistically significant \((F=32.489 \text{ and } F=9.417, P<0.001)\).

Participant feedback
In the feedback about the training, participants reported that it had been an interesting experience and that they were satisfied with the training and the information provided. Many participants said that the training had increased their awareness of their strengths and weaknesses and had provided them with a range of learning materials and activities to develop their reflective practice, critical thinking and communication skills.

Discussion
Effects of intervention on reflective practice
Among the study participants, 63% had received no information about reflective practice before the intervention, which consisted of five two-hour training sessions on reflective practice. After the training, mean scores on the RPQ had significantly increased for all subscales except the ‘uncertainty’ subscale, for which the score had decreased. The highest increases were observed in the ‘reflective with others’, ‘reflective-in-action’ and ‘desire for improvement’ subscales. This overall increase in RPQ scores may be due to participants’ satisfaction with the training and the information provided. It may also be due to the training prompting them to reflect and become more aware of their strengths and weaknesses. These results are consistent with those of Abdelwahid and Attia (2020), who conducted a similar study among nurse interns at a university in Egypt and found significant improvements in participants’ reflective practice after they had undergone a reflective practice training programme.

In the present study, participants’ scores on the ‘uncertainty’ subscale of the RPQ were lower after the training. This suggests that

Table I. Detailed mean scores on the Reflective Practice Questionnaire, Critical Thinking Disposition Scale and Interpersonal Communication Competency Scale before and after the intervention

<table>
<thead>
<tr>
<th>Tool</th>
<th>Subscale, domain or dimension</th>
<th>Mean (SD) before intervention</th>
<th>Mean (SD) after intervention</th>
<th>Paired t-test</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective Practice Questionnaire</td>
<td>Reflective-in-action</td>
<td>3.32 (0.27)</td>
<td>4.33 (0.25)</td>
<td>71.909</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Reflective-on-action</td>
<td>3.28 (0.28)</td>
<td>4.28 (0.28)</td>
<td>541.21</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Reflective with others</td>
<td>3.40 (0.41)</td>
<td>4.37 (0.36)</td>
<td>43.924</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Self-appraisal</td>
<td>3.33 (0.31)</td>
<td>4.17 (0.33)</td>
<td>88.913</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Desire for improvement</td>
<td>3.38 (0.39)</td>
<td>4.32 (0.28)</td>
<td>49.044</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Confidence (general)</td>
<td>2.66 (0.51)</td>
<td>3.73 (0.41)</td>
<td>52.434</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Confidence (communication)</td>
<td>3.11 (0.27)</td>
<td>4.10 (0.28)</td>
<td>59.095</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Uncertainty</td>
<td>3.23 (0.36)</td>
<td>3.00 (0.75)</td>
<td>2.801</td>
<td>0.006*</td>
</tr>
<tr>
<td></td>
<td>Stress interacting with clients</td>
<td>2.67 (0.49)</td>
<td>3.25 (0.54)</td>
<td>13.579</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Job satisfaction</td>
<td>3.30 (0.32)</td>
<td>3.98 (0.36)</td>
<td>43.623</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Critical Thinking Disposition Scale</td>
<td>Critical openness</td>
<td>3.18 (0.27)</td>
<td>4.35 (0.27)</td>
<td>44.745</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>(two domains)</td>
<td>Reflective scepticism</td>
<td>3.17 (0.48)</td>
<td>4.47 (0.39)</td>
<td>25.618</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Interpersonal Communication Competency</td>
<td>Environmental control</td>
<td>3.02 (0.29)</td>
<td>4.00 (0.34)</td>
<td>48.309</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Scale (five dimensions)</td>
<td>Self-disclosure</td>
<td>3.15 (0.43)</td>
<td>4.11 (0.32)</td>
<td>54.955</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Assertiveness</td>
<td>2.93 (0.39)</td>
<td>3.76 (0.38)</td>
<td>39.570</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Interaction management</td>
<td>3.06 (0.34)</td>
<td>4.05 (0.35)</td>
<td>106.823</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td></td>
<td>Immediacy</td>
<td>3.19 (0.40)</td>
<td>4.17 (0.36)</td>
<td>139.798</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

* Statistically significant at P<0.05

Table 2. Overall mean scores for each tool before and after the intervention

<table>
<thead>
<tr>
<th>Tool</th>
<th>Mean (SD) before intervention</th>
<th>Mean (SD) after intervention</th>
<th>Paired t-test</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective Practice Questionnaire</td>
<td>3.13 (0.22)</td>
<td>3.95 (0.23)</td>
<td>52.156</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Critical Thinking Disposition Scale</td>
<td>3.21 (0.30)</td>
<td>4.39 (0.26)</td>
<td>39.312</td>
<td>&lt;0.001*</td>
</tr>
<tr>
<td>Interpersonal Communication Competency Scale</td>
<td>3.06 (0.28)</td>
<td>4.01 (0.26)</td>
<td>112.554</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

* Statistically significant at P<0.05
a better understanding of reflective practice may reduce nursing students’ uncertainty and therefore enhance their confidence in their ability to practise professionally. Vaid et al (2013) and Orde (2016) described uncertainty in nurses as a feeling of not knowing what will happen in the future. One of the reasons why nurses may experience uncertainty is that they work in a complex and fast-paced environment. A degree of uncertainty encourages professional development, since nurses face potentially challenging situations in which they must consider different options and choose the one they think is best (Vaid et al 2013). Abd-El Alem and Abou Hashish (2021) emphasised that nurses need to develop their willingness and confidence to manage professional challenges and uncertainties constructively.

**Effects of intervention on other variables**

After the training, scores had significantly increased in all dimensions of the ICCS, especially in the ‘self-disclosure’ and ‘immediacy’ dimensions. Further, there was a positive correlation between reflective practice and interpersonal communication competency. This may be due to participants learning how important reflective practice is for optimal nurse-patient relationships. The importance of communication skills for optimal nurse-patient relationships would have been emphasised in their previous years of study.

These results concur with those of several studies. Abdelwahid and Attia (2020) explored reflective practice training among 80 nurse interns in Egypt and reported that participants’ interpersonal communication competency was significantly improved after the training. Pangh et al (2019) investigated the effects of reflection on nurse-patient communication in Iranian nurses working in emergency departments and divided 142 nurses randomly into an intervention group and a control group. In the intervention group, mean scores for verbal communication skills, non-verbal communication skills, general communication skills and communication skills related to patient safety were significantly higher after the intervention, whereas there were no significant differences in the control group. Farrington and Townsend (2014) used critical reflection to evaluate how nurses might use communication strategies to reduce patient distress. Their findings showed that critical reflection was a valuable learning process that could prompt nurses to change their practice to provide the best possible care to patients. In contrast, Kim et al (2018), in a quasi-experimental study of the effects of critical reflection on 44 novice nurses working in a general hospital in Korea, found that critical reflection training did not assist nurses to improve their communication skills.

When confronted with potentially challenging situations in clinical practice, nurses need to apply rational reasoning and problem-solving. Critical thinking supports them to adapt to and manage challenging situations. In the present study, post-intervention scores in the CTDS were markedly higher than pre-intervention scores. The training may have increased participants’ awareness of the importance of reflective scepticism and critical openness, the two domains of the CTDS, in clinical decision-making. Abou Hashish and Bajbeir (2018), who conducted a similar study in the same setting to explore the relationship between emotional intelligence and critical thinking disposition, found that nursing students understood the importance of critical thinking. Zhang et al (2017), Kim et al (2018) and Abdelwahid and Attia (2020) all demonstrated, in their respective settings, an improved critical thinking disposition among nursing students after a reflective practice training programme.

Kaddoura (2013) investigated critical thinking among newly graduated nurses and
found that it was essential in the transition from nursing student to professional nurse. Nurses’ critical thinking developed in parallel to their self-awareness and ability to reflect on past experiences (Kaddoura 2013). Further, Pangh et al (2019) found that reflective practice supported nurses to pay more attention to seemingly insignificant tasks and therefore enabled them to communicate with patients more positively and effectively.

In the present study, the differences between pre-intervention and post-intervention scores on the variables indicate that learning occurred. The results of the regression analysis show that there is a mutually beneficial relationship between reflective practice and critical thinking and between reflective practice and interpersonal communication. As participants’ knowledge of and training in reflective practice increased, their knowledge and skills in communication and critical analysis increased as well. Similar results were reported by Kim et al (2018) and Abdelwahab and Attia (2020). The result of the present study therefore reinforce the importance of reflective practice training in nursing education.

Limitations
A pre- and post-intervention study design generally demonstrates some improvements but provides no evidence of change over time. Research using a longitudinal study design is needed to assess the effectiveness of the intervention in improving patient outcomes and in enhancing nurses’ future professional practice and development. The study relied on self-reported data, which may have biased the results. A larger sample recruited across several sites and the use of a control group for comparison could assist in reducing potential bias.

Conclusion
Reflective practice training provided to senior nursing students in Saudi Arabia during their internship programme appeared to have improved their reflective practice, critical thinking and interpersonal communication. Nurses’ ability to engage in reflective practice is important to strengthen communication, teamwork, critical thinking and problem-solving. Reflective practice training would be a useful addition to pre-graduate nurse education and to preceptorship or orientation programmes for newly recruited nurses.

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