

## Original Article



# Relationship between Nurses Reflection, Self-efficacy and Work Engagement: A Multicenter Study

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Email: [m.ghafori@yahoo.com](mailto:m.ghafori@yahoo.com)**Abstract****Introduction:** Reflection is considered an essential element in nurses' practice with different positive outcomes, we decided to determine the level of nurses' reflection and then assess the relationship between nurses' reflection with their self-efficacy and work engagement.**Methods:** In this cross-sectional study, a total of 240 nurses were selected from seven educational hospitals affiliated with Tabriz University of medical sciences (Iran). The stratified random sampling method was used to select the participants from hospitals. Data were collected through three questionnaires including Groningen Reflection Ability Scale (GRAS), Sherer's General Self-Efficacy Scale (SGSES), and Utrecht Work Engagement Scale (UWES). Data were analyzed using SPSS version 13.**Results:** According to the results, the mean (SD) score of nurses' reflection was calculated as 86.51 (8.17) out of 115. The mean (SD) score of nurses' self-efficacy was 60.89 (11.11) out of 85. Moreover, the mean (SD) total score of nurses' work engagement in a possible range of 0 to 6 was 3.39 (1.36). There was a positive and significant relationship between the total reflection score with work engagement and self-efficacy scores.**Conclusion:** According to the results, nurses working in different units showed different scores of reflection. Moreover, the results of the present study showed that nurses' reflection is associated with nurses' work engagement and self-efficacy. Therefore, nurse managers and nurse educators should improve nurses' skills in reflection and they should support the reflective practice in clinical settings.**Introduction**

Nurses significantly affect the effectiveness of the health care system and play an important role in health promotion, disease prevention, and promoting a healthier lifestyle for society.<sup>1,2</sup> In the current healthcare context which is changing rapidly, professional nurses should improve their skills for providing high quality care.<sup>3,4</sup> The main characteristics of nurses that help to optimize nursing care and inter-professional development are; self-motivation, preference for workplace learning, relevance to practice, positive workplace culture, self-efficacy, and strong enabling leadership.<sup>5-7</sup> Reflection is one of the important nursing skills that has been emphasized in recent years which influences clinical performance and professional behaviors.<sup>8,9</sup>

Reflection is the accurate identification of a clinical situation or an experience that includes the analysis of feelings, thoughts, actions and personal behaviors. It requires cognitive activities such as description, critical analysis, evaluation, and planning. As an active and dynamic process, reflection is also a way to learn from clinical situations or experiences.<sup>10</sup> In other words, reflection is a process in which thoughts are returned

so that they can be interpreted or analyzed. Hence, the understanding from reflection can be used in similar situations in the future.<sup>11</sup> Reflection has been introduced as a learning and evaluation method in many nursing programs worldwide.<sup>9</sup>

There are three main types of reflection including reflection for action, reflection in action, and reflection on action. Reflection for action involves thinking about what you want to achieve and understanding the method by which you will achieve that goal with the help of previous experiences. Reflection in action is related to a person's behavior while performing a task and allows him/her to modify or change what he is doing. The focus of this type of reflection is on gaining a new perspective. Reflection on action includes a retrospective look at the action procedure and the analysis of the collected data in terms of knowledge, new learning, and professional development.<sup>12</sup> Reflection is considered as an essential factor for the development of independent, critical-thinking, and providing high quality nursing care.<sup>13,14</sup> In recent years, there has been a main focus on developing reflective practice in the current complex context of clinical settings.<sup>15</sup> According to the literature review, reflection plays a more prominent role

in medical education and professional development.<sup>9,16</sup> Improving nurses' skills on reflection could significantly increase nurses' empowerment and professionalism, improves the quality of nursing care and nurse-patient communication skills.<sup>17-19</sup>

One of the other important concepts in the nursing profession, which may be influenced by nurses' reflection, is the concept of nurses' self-efficacy.<sup>20</sup> Bandura defines self-efficacy as a person's belief, expectations, and judgment of his/her ability to perform tasks successfully.<sup>21</sup> In other words, self-efficacy shows the feeling of self-confidence and is related to the motivation level.<sup>22</sup> The level of self-efficacy varies among different people, and factors such as age, gender,<sup>23</sup> occupation,<sup>24</sup> social support,<sup>25</sup> living environment,<sup>26</sup> and level of education affect self-efficacy.<sup>23</sup> People with high self-efficacy have a high level of flexibility<sup>27,28</sup> and have a greater ability to control difficult situations.<sup>27,29</sup> The importance of self-efficacy is very high, especially in the nursing profession where nurses always face unexpected situations.<sup>29</sup>

Another variable that may be affected by reflection is nurses' work engagement. With increasing demands and limited resources for healthcare services, more attention has been recently paid to nurses' work engagement and related factors.<sup>30</sup> Work engagement is a positive and satisfactory state of mind,<sup>31-33</sup> which is characterized by vigor, dedication, and absorption.<sup>33</sup> Work engagement has a positive relationship with health,<sup>34</sup> happiness,<sup>35</sup> job satisfaction,<sup>36</sup> personal initiative,<sup>37</sup> active learning,<sup>36</sup> and career achievement.<sup>38</sup> Moreover, employees with a high level of work engagement often experience positive feelings that lead to greater productivity.<sup>39</sup>

Although there have been studies on reflection in nursing education, the review of the literature shows that this issue has less been investigated in nurses working in the clinical environment. Since reflection is considered an essential element in nurses' practice with different positive outcomes, we decided to determine the level of nurses' reflection and then assess the relationship between nurses' reflection with their self-efficacy and work engagement.

## Materials and Methods

In this cross-sectional study, a total of 240 nurses were selected from seven educational hospitals affiliated with Tabriz University of medical sciences (Iran). The stratified random sampling method was used to select the participants from hospitals.

Inclusion criteria included having at least a bachelor's degree in nursing and working as a clinical nurse. Incomplete questionnaires (where more than 10% of the questionnaires were incomplete) were not analyzed.

Data were collected through demographics (such as participants' age, gender, marital status, work experience, and work unit) and three main questionnaires including Groningen Reflection Ability Scale (GRAS), Sherer's General Self-Efficacy Scale (SGSES) and Utrecht Work

Engagement Scale (UWES).

GRAS was used to measure nurses' reflection ability. The scale was developed in 2007 by Aukes et al.<sup>40</sup> This scale consists of 23 items with three subscales including self-reflection (10 questions), empathic reflection (6 questions), and reflective communication (7 questions). Each item is scored based on a five-point Likert scale ranging from 1 to 5 (1=completely disagree and 5=completely agree). Therefore, the possible score range was 23 and 115. Items 14, 17, 18, 22, and 23 were scored in reverse. The validity and reliability of this tool have been evaluated by Rostami et al and a Cronbach's alpha value was reported as 0.73.<sup>41</sup> In the present study, the content validity of the Persian version of GRAS was evaluated. For this purpose, after being translated and re-translated by an English expert, the questionnaire was given to ten faculty members of the Faculty of Nursing and Midwifery so that they provided their comments about the content of this tool. After collecting their comments and making necessary changes, the questionnaire was given to 30 nurses and the reliability of this questionnaire was obtained 0.77 using Cronbach's alpha.

To measure the nurses' work engagement, UWES was used. The 21-item UWES was developed at Utrecht University by Schaufeli et al<sup>42</sup> and Schaufeli et al<sup>43</sup> introduced the short form of this scale that included 9 items as follows: Vigor (3 items), dedication (3 items), and absorption (3 items). They used a large amount of international data and showed that UWES-9 has acceptable psychometric properties so that its Cronbach's alpha was obtained > 0.80 in 10 different countries. Each item is scored based on a seven-point Likert scale, ranging from 0 to 6 (0=Never and 6=Always). Psychometric properties of the Iranian version of UWES-9 were assessed by Hajloo<sup>44</sup> and Cronbach's alpha coefficient was reported as 0.79. In the present study, the internal consistency of this tool using Cronbach's alpha was obtained at 0.71.

SGSES was used to measure nurses' self-efficacy. SGSES was developed by Sherer et al<sup>45</sup> and consists of 17 items. Each item is scored based on a five-point Likert scale.

The total SGSES scores range from 17 to 85. The higher scores indicate higher self-efficacy. Scores 17-28, 29-57, and 58-85 indicate low, moderate, and high self-efficacy, respectively. The psychometric properties of this questionnaire was assessed by Barati Bakhtiari<sup>46</sup> and the reliability coefficient and Cronbach's alpha were reported as 0.76 and 0.79, respectively. The internal consistency of the SGSES tool was obtained at 0.89 using Cronbach's alpha coefficient in the present study.

The researcher invited eligible nurses to participate in the study. In this regard, the research objectives were explained to all participants, and if they wished to participate in the study, they were asked to read and sign the written consent form. Then, the above-mentioned questionnaires were given to the participants one by one and they were asked to read and complete them

carefully. The questionnaires were filled out anonymously and the participants' information was kept completely confidential.

Data analysis was carried out using SPSS version 13. Descriptive statistics including mean (SD) were used to measure the value of each variable. After ensuring the normality of the data distribution, Pearson's correlation test was used to determine the relationship between the variables.  $P$  value  $< 0.05$  was considered as the level of significance in all tests.

## Results

A total of 240 clinical nurses—with a mean (SD) age of 33.41(7.36) years—participated in the present study. The majority of participants (81.7%) were women. Moreover, 67.9% of the research subjects were married and most of them (91.7%) had a bachelor's degree in nursing. In terms of working shift, 80% of the nurses had rotating shifts (Table 1).

According to the results, the mean (SD) score of nurses' reflection was calculated as 86.51 (8.17) out of 115. Moreover, the results showed that the self-reflection, empathic reflection, and reflective communication scores were 40.13(4.44), 22.46(2.64), and 23.93(3.94), respectively (Table 2). The results showed no statistically significant difference in the mean reflection scores in terms of gender, marital status, level of education, type of shift and type of work, as well as years of work experience, age, number of nurses per shift and nurse-to-patient ratio ( $P > 0.05$ ). However, a statistically significant difference was observed between the reflection scores of nurses working in the emergency department (ED) and those working other departments, so that the mean reflection score of ED nurses was relatively higher than nurses working in other departments ( $P < 0.05$ ).

The results showed that the mean (SD) score of nurses' self-efficacy was 60.89 (11.11) out of 85 (Table 2). The results showed no statistically significant difference in the mean score of self-efficacy in terms of nurses' gender, marital status, level of education, type of shift and type of work, as well as number of nurses in each shift and nurse-to-patient ratio. However, the mean score of self-efficacy

among nurses working in ED was higher than nurses working in the internal, surgical and ICU wards. There was also a statistically significant correlation between the mean score of self-efficacy with age and years of work experience.

The results showed that the mean (SD) total score of nurses' work engagement was 3.39 (1.36). The mean score of each domain is shown in Table 2. According to the results, the highest and the lowest scores are related to the vigor and absorption domains, respectively. The analysis showed no statistically significant difference in the mean work engagement scores in terms of gender, type of shift, marital status, level of education, hospital wards, and type of work.

The analysis of data by Pearson correlation coefficient

**Table 1.** Characteristics of the Participants (n=240)

Variables	Mean (SD)	No. (%)
Age (y)	33.41(7.36)	
Gender		
Female		196 (81.7)
Male		44 (18.3)
Marital status		
Single		75(31.3)
Married		163 (67.9)
Divorced		2(0.8)
Degree		
Baccalaureate		220(91.7)
Master in nursing		20(8.3)
Work experience in nursing (y)	9.24(6.64)	
Work experience in the current unit (y)	6.65(5.82)	
Main working time		
Fixed shift		40 (20)
Rotation shift		200 (80)
Work unit		
Emergency		23 (9.6)
Medical		105 (43.7)
Surgical		27 (11.3)
Critical care		85 (35.4)

**Table 2.** Nurses perception on reflection, self-efficacy, and work engagement (n=240)

Scale	Domain	Possible score range	Mean (SD)	Minimum score	Maximum score
GRAS	Self-reflection	10-50	40.13 (4.44)	24	50
	Empathic reflection	6-30	22.46 (2.64)	12	29
	Reflective communication	7-35	23.93 (3.94)	11	34
	Total score	23-115	86.51 (8.17)	62	108
SGSES	Total score	17-85	60.89 (11.11)	29	84
UWES	Vigor	0-18	3.23 (1.61)	0	6
	Dedication	0-18	3.10 (1.40)	0	6
	Absorption	0-18	3.07 (1.37)	0	6
	Total score	0-54	3.39 (1.36)	0	13

GRAS, Groningen Reflection Ability Scale; SGSES, Sherer's General Self-Efficacy Scale; UWES, Utrecht Work Engagement Scale.

showed a positive and significant relationship between the total reflection score and a total score of work engagement ( $r=0.28$ ,  $P<0.001$ ). Moreover, there was a positive relationship between the total reflection score with a total score of self-efficacy ( $r=0.48$ ,  $P<0.001$ ). Also, a total score of nurses' work engagement showed a positive correlation with total score of self-efficacy ( $r=0.25$ ,  $P<0.001$ ) (Table 3). More details of correlations between the subscales of the questioners are shown in Table 3.

## Discussion

The aim of this study was to determine the relationship between reflection with self-efficacy and the work engagement of nurses working in selected educational hospitals.

The possible score range on GRAS was 23-115, so a higher score in this questionnaire indicated a higher reflection score. The mean reflection score in the present study indicated a relatively high level of reflection in nurses.

Reflection is considered an important part of nursing education and practice and plays an important role in facilitating the learning of clinical nurses.<sup>47</sup> It also improves the quality of care given by nurses.<sup>48</sup> The results of a study by Akbari et al<sup>49</sup> showed that reflection is a multidimensional concept and may be related to different psychological and behavioral characteristics. Reflection encourages people to search and discover solutions for difficult situations. By using reflection, nurses will gain new experiences and insights from clinical and educational settings. Therefore, they feel ownership of the acquired knowledge. It can be stated that reflection significantly improves the knowledge and expertise of nurses in clinical situations. Similarly, Shahrokhi et al<sup>50</sup> showed that reflection can improve the clinical decision-making of nurses.

Pai et al measured the reflection score in nursing students using the self-reflection and insight scale (SRIS), which was obtained 75.81 out of a possible score range of 20-100. They also showed that students who had a higher reflection score had higher nursing qualifications.<sup>51</sup> In a recent study, Chen et al. measured the reflection score of

Chinese nurses as 73.60 using the SRIS.<sup>8</sup> In another study conducted on nursing students by Cheng et al<sup>52</sup> results showed that the reflection score was 70.33 using SRIS.

In a study in Sweden, Gabriellson et al<sup>53</sup> found no statistical relationship between men and women in terms of mean reflection scores of participants, as well as in terms of age and years of work experience. This result was consistent with our findings.

One of the other important concepts in the nursing profession, which may be influenced by nurses' reflection, is the concept of nurses' self-efficacy.<sup>20</sup>

The mean self-efficacy score was calculated 60.89 using SGSES, which indicates the high self-efficacy. This result is consistent with a study done by Bahreini Brujeni and Alavi.<sup>54</sup> They reported that the mean self-efficacy scores among nurses was 58.03. However, Norouzinia et al<sup>55</sup> reported a moderate self-efficacy of nurses. They also showed a positive and significant relationship between self-efficacy with the quality of life of nurses. Van Dyk et al<sup>56</sup> showed a positive and significant relationship between self-efficacy of nursing managers with years of their work experience, which is consistent with the current study.

Leontiou et al<sup>57</sup> showed that the mean (SD) of nurses' self-efficacy score was 33.33 (0.38), and the mean self-efficacy scores were not statistically significant in different hospitals. There was also no statistically significant difference between self-efficacy with gender and level of education, but there was a statistically significant relationship between the mean self-efficacy score with age and years of work experience, which is consistent with the present study. However, Hu et al<sup>58</sup> found no statistically significant difference in the mean self-efficacy scores of nurses with years of work experience and hospital wards, which is inconsistent with the present study.

Self-efficacy theory is based on the assumption that people's beliefs about their abilities and talents have positive effects on their actions and form the basis of people's activities. If a person believes that he/she cannot achieve the expected results or believes that he/she cannot prevent unacceptable behaviors, he/she will have lower motivation to do that work and will not be able to do it.<sup>59</sup>

**Table 3.** Pearson correlation matrix showing the correlation between nurses' reflection, self-efficacy, and work engagement level

Scales	Reflection Scale (1-4)				Work Engagement Scale (5-8)				Self-efficacy scale (9)
	1	2	3	4	5	6	7	8	9
1. Self-Reflection	-								
2. Empathic reflection	0.47***	-							
3. Reflective communication	0.19**	0.30***	-						
4. Total reflection index	0.79***	0.73***	0.69***	-					
5. Vigor	0.15*	0.12	0.07	0.15*	-				
6. Dedication	0.29***	0.30***	0.13	0.31***	0.39***	-			
7. Absorption	0.13*	0.19**	0.13	0.19**	0.27***	0.50***	-		
8. Total work engagement score	0.24***	0.26***	0.14*	0.28***	0.75***	0.81***	0.74***	-	
9. Total self-efficacy score	0.30***	0.24***	0.45***	0.48***	0.17**	0.27***	0.13*	0.25***	-

\* $P<0.05$ ; \*\* $P<0.01$ ; \*\*\* $P<0.001$ .

Nurses' self-efficacy increases the quality of patient care. The literature review shows a positive and significant relationship between self-efficacy and work performance, and the assessment of self-efficacy is a suitable guide for predicting nurse's clinical practice.<sup>60</sup> Individuals with high self-efficacy can overcome problems more easily because of their higher problem-solving ability. When problems and difficult conditions arise, they focus on their abilities to solve the problem and look for a new solution.<sup>61</sup>

Another concept that may be influenced by nurses' reflection is work engagement. Work engagement is an individual's commitment to the organization or employer.<sup>62</sup> Work engagement has a positive effect on the performance of employees and the organization. Job satisfaction, organizational commitment, and work performance are among the variables that are positively affected by work engagement.<sup>63</sup> Work engagement shows the feeling of vigor and identification in work activities.<sup>64</sup>

In the present study, the mean (SD) of the work engagement score was 3.39 (1.36) using UWES-9. In a study in China, Zhu et al<sup>65</sup> showed that the mean of nurses' work engagement score was 3.83 (1.08), which is higher than the same score in the present study. Vander et al also reported that the mean of work engagement score was 5.62 (1.12), which is at a high level.<sup>66</sup> Results of a study in Europe showed that the level of work engagement differed in different countries and cultures.<sup>67</sup> In a study in Spain by Giménez-Espert et al the mean score of nurses' work engagement was lower than the present study.<sup>68</sup>

The results of a review study show that general characteristics such as nurses' age, gender, level of education, work-related characteristics such as workplace stressors or co-worker support, and individual characteristics such as coping strategies and personality could influence on nurses' work engagement.<sup>33</sup> However, our findings showed no relationship between nurses' age, gender and level of education with their work engagement. Wan et al showed a positive relationship between work environment and work conditions with nurses' work engagement.<sup>30</sup> Remegio et al found that work engagement was higher in nursing leaders who had higher education and experience.<sup>62</sup>

The results of the present study showed a positive and significant relationship between nurses' reflection with work engagement and self-efficacy. It means that when the reflection scores is increased the mean score of nurses' self-efficacy and work engagement is increased too. In a study in the state of Arizona, Lawrence found a positive and significant relationship between reflection and work engagement of nurses working in the intensive care units.<sup>69</sup> Sundgren et al<sup>70</sup> showed higher self-efficacy and quality of life scores among Australian nurses with higher reflection score.

Galutira<sup>4</sup> argue that reflection brings positive consequences such as personal development, professional development, and better quality of care. Moreover,

reflection helps nurses improve job satisfaction.<sup>71</sup> Momennasab et al<sup>72</sup> reported that group reflection can improve the knowledge, attitude and practice of nurses regarding ethical codes. More recently, Pangh et al<sup>19</sup> showed that reflection not only had a positive effect on nurses' verbal, non-verbal and general communication skills, but also helped them to improve the patients' safety. In other words, reflection enables nurses to support patients more effectively at every stage of the disease and play a more prominent role in promoting their health status despite the limited resources and heavy workload.

## Conclusion

The results showed that nurses working in different units have different scores of reflection. Moreover, there was a positive significant relationship between nurses' reflection, work engagement and self-efficacy. This study highlighted the importance of reflection in providing nursing care. Therefore, nurse managers, health care policy makers, and nurse educators should improve nurses' skills in reflection. Moreover, they should support the cultivation of reflective practice in clinical settings. Further studies are needed to explore the impact of reflective practice on nurses' turnover and the quality of care perceived by patients.

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## Authors' Contribution

**Conceptualization:** Leila Zarrin, Mansour Ghafourifard.

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## Research Highlights

### What is the current knowledge?

- Reflection is considered as a vital component of the curriculum and practice in health care.
- Reflection is an important component in every nurse's practice and is embedded in the Nursing and Midwifery Council's code of conduct.

### What is new here?

- The results showed that nurses working in different units showed a different level of reflection.
- The results of the present study showed that nurses' reflection associated with their work engagement and self-efficacy.

**Validation:** Mansour Ghafourifard.

**Visualization:** Mansour Ghafourifard.

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### Competing Interests

There are no conflicts of interest.

### Data Availability Statement

The datasets are available from the corresponding author on reasonable request.

### Ethical Approval

This study was approved by the ethics committee of Tabriz University of Medical Sciences (Ethical code: IR.TBZMED.REC.1400.1125). Written informed consent was obtained from all participants.

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