

Effect of Peer Mentoring Strategy on Nursing Students' Infection Control Practice, Self-efficacy and Stress

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Abstract

Background: To provide nursing students with a more positive learning environment, the nursing faculty seeks to discover new effective teaching-learning strategies. One of these strategies is peer mentoring which allows students to assist and advise each other and helping them practicing nursing more efficiently. **Study Aim:** To determine the effect of peer-mentoring strategy on nursing students' infection control practice and its self-efficacy and stress. **Settings:** This study was conducted at the Technical Institute of Nursing in Sharq Elmadena Hospital in Alexandria, Egypt. **Subjects:** A convenient sample of 75 students, 15 mentors recruited from the student interns and 60 nursing students from the 4th academic year, who were randomly divided into two main mentees and control groups. **Tools:** Three tools were used. Tool one, "Nursing Students' Infection Control Performance Observational Checklist"; Tool two, "The Perceived Stress Scale (PSS)"; Tool three "Infection Control Practices Self-Efficacy Questionnaire. **Results:** The study showed a significant improvement in infection control practice and self-efficacy in the study group more than in the control group. Furthermore, the study group exhibited significant lower stress levels than the control group. **Conclusion:** Peer mentoring is a great tactic strategy that can enhance nursing students' experiences in the clinical nursing field especially in the critical care units. It has been proven effectiveness in decreasing stress and improving infection control practice and self-efficacy, which are all important factors in clinical practice. There was an overall positive feedback from the studied students regarding peer mentoring to be implemented into clinical education. The study further proves the significance of the strategy in nursing education. **Recommendations:** Peer mentoring strategy should be considered as a significant teaching method in nursing education and its clinical practice. Training workshops should be conducted for nursing educators and students to enhance their abilities and competencies in using peer mentoring strategy.

Keywords: Peer mentoring, infection control, self-efficacy, perceived stress.

Introduction

In nursing education, stress has been recognized as a very serious negative issue. With demanding timetables, critical thinking

examinations, clinical experiences at hospitals and outside responsibilities, students often feel overwhelmed by many

loaded requirements. Nursing students are frequently vulnerable to various stressors which might hinder their learning and performance (Eswi, et al., 2013).

Sustained exposure to these stressors can lead to many negative impacts on students' clinical learning and their physical, psychological and behavioural abilities (Shirom, 2003). Due to these stressors in the clinical environment and the risks that can be brought along with stress, it is necessary to create a support system to avoid such unwanted problems (Nouhi, et al., 2015).

Peer mentoring is commonly recommended as a support mechanism for nursing students' learning during clinical practice placements, in which a more experienced person as a mentor is partnered with a less skilled individual as a mentee for mutually beneficial outcomes. A mentor is a counselor and is expected to play essential teaching and psychosocial roles. Mentors offered support and guidance, are self-confident and willing to share their experience with mentees. In return, they also profit in several ways (Ganapathy., 2015).

Mentees are the ones who receive advice, training and guidance from their more experienced mentors. Nursing students, as mentees, should observe the senior students during their interactions and communications with clients, nursing faculty, and healthcare teams in clinical settings. The benefits of such strategy are known (Sprengel & Job 2004).

Peer mentoring is a helpful method to clinical practice in other ways, one of which is increasing infection control performance and its self-efficacy. Infection control practices help in preventing or minimizing the hazards of microorganism transmission in clinical settings. Education on infection control expands health professionals' obedience to use their precautions (Moralejo et al., 2018). Therefore, nursing students should be taught by effective strategies, the necessary precautions and safety measures that should be taken to prevent and control infection (Magill et al., 2018; Al-Hussami & Darawad., 2013).

However, the implementation of infection control practice can be harmful to nursing students if not done properly. Accordingly, for the correct implementation of infection

control practice, nursing students should be confident in their abilities and have high self-efficacy (Nakagawa & Sasai., 2021).

Self-efficacy is a crucial component to implement efficient nursing practice. It is defined as a person's self-belief and judgment regarding their ability in starting, continuing, and bringing successful necessary actions to reach an outcome. Students with high self-efficacy are more optimistic. These results lead to positive outcomes, such as: better academic performance, more effective personal regulation, better management of stress, better health, and higher overall satisfaction and commitment to remain in school. Hence, the implementation of peer mentoring has many positive outcomes in nursing education (Alavi., 2014).

Aim of the Study

This study aims to determine the effect of peer-mentoring strategy on nursing students' infection control practice, self -efficacy and stress.

Research hypotheses

- Nursing students who are instructed by peer mentoring exhibit higher performance scores in applying infection control standards than those who are not.
- Nursing students who are instructed by peer mentoring exhibit higher self-efficacy scores in applying infection control standards than those who are not.
- Nursing students who are instructed by peer mentoring exhibit lower stress level in clinical setting than those who are not.

Materials and Method

Materials

Design: A quasi experimental research design was used to conduct this study.

Settings: This study was conducted at the Technical Institute of Nursing in Sharq Elmadena Hospital in Alexandria and students received clinical training conducted in 6 critical care units

Subjects: The subjects of this study were a convenient sample of 75 students. The minimal sample size that was estimated based on EPI Info 7.0 statistical program was 74. The study sample was divided into three groups:

- **Group 1 (mentors):** was composed of 15 mentors who were recruited from the intern nursing student, and were selected based on their high academic, clinical achievements and their interest in mentoring. The 15 mentors were randomly assigned to the 30 mentees (one mentor to two mentees).
- **Group 2 (mentees):** was composed of 30 4th year nursing students who enrolled in the critical care clinical course at the academic year 2020-2021. They were the mentees in this study.
- **Group 3 (control):** was composed of 30 4th year nursing students who enrolled in the critical care clinical course at the academic year 2020-2021. They were the control group in this study.

Tools: In order to collect the necessary data for the study, three tools were used:

Tool one: “Nursing Students’ Infection Control Performance Observational Checklist”. This checklist was developed by (Fathy, 2015) and adapted by the researchers to measure the students’ performance in applying infection control standards in clinical practice. The checklist composed of (8) main sections, labeled as follows: Central venous catheters (9 items), urinary catheters (11 items), intravenous injection (16 items), intramuscular injection (10 items), insertion of a line-cannula (10 items), suction procedure, Oropharyngeal, Nasotracheal Suction (10 items) and Endotracheal Suction (12 items), nasogastric tube insertion (10 items) and nasogastric tube feeding (9 items). Each item was rated on three

responses: done correctly and complete = 2, done correctly but incomplete = 1, done incorrectly or not done = 0.

Scores $\geq 75\%$ are considered unsatisfactory practices & scores < 75 to 100% are considered satisfactory.

Tool two: The Perceived Stress Scale (PSS). This scale was developed by (Sheu, et al, 2002) and modified by the researchers. This tool was a self-report tool which is used to identify the nursing students’ stress level. It consists of 42 items grouped into (7) factors. Each item was rated on a four-point Likert scale in terms of: High=3, Moderate=2, Low=1 and Not present=0. From $1 \leq 63$ considered low stress score, from $64 \leq 88$ considered moderate stress score, while those who scored from $89 \leq 126$ considered high stress. Higher scores indicate higher level of stress.

Tool three: Infection control practices Self-Efficacy Questionnaire.

This tool was developed by the researchers after extensive review of the literature (Zengin. et al; 2014 & Abdal, Masoudi, 2015). It was used as a self-report tool to assess students’ self-efficacy related to infection control practices. It consists of 20 statements with 4 points likert scale ranged from strongly disagree (1) to strongly agree (4). From $20 > 40$ considered low self-efficacy scores, from $40 > 60$ considered moderate self-Efficacy scores, and from $60 \geq 80$ considered high self-Efficacy scores.

Socio-demographic and personal characteristics data sheet was attached to this tool for mentees and control groups.

Method

Approval of the Research Ethics Committee of the Faculty of Nursing was obtained. An official approval was obtained from the Technical Institute of Nursing in Sharq Elmadena Hospital in Alexandria, Egypt, after providing full explanation of the aim of the study. Informed consents were obtained from the subjects. The study tools were tested for content validity by 5 experts from the related fields and the necessary

modifications were done accordingly. A pilot study was carried out on 10% (6 nursing students) who were represented the study sample, but out of it. The pilot was conducted to test the clarity and applicability of the research tools. Reliability of the tools was tested using Cronbach's Alpha test, which revealed 0.830 for tool one and 0.798 for tool two and 0.850 for tool 3; that denoted acceptable values. Data was collected by the researchers during the period from November 2020 to march 2021.

The study was conducted in three phases:

Phase I: Preparation Phase

During this phase, the researchers prepared herself, the content and students (Mentors and Mentees).

a. Researchers' preparation:

- Before data collection, the researchers reviewed the related literature about Peer Mentoring Strategy and infection control practices in the previously mentioned procedures. The researcher was trained on the practical part of infection control practices under supervision of the head of the Infection Control Unit at Sharq El Madena Hospital. The training was held for two clinical days at the beginning of the first semester of the academic year 2020-2021, through demonstration, and re-demonstration.

b. Content preparation:

- The researcher prepared the objectives and the teaching unit in a form of handout and PowerPoint presentation about Peer Mentoring Strategy which included: the definition of peer mentoring, benefits for mentors and mentees, roles and responsibilities of the mentors and mentees, Conduction of Mentoring Strategy, characteristics of successful mentors, and communication skills and ethical the aspect in mentoring.

c. Students' preparation:

- The researchers explained the purpose of the study for the mentors, mentees and the control groups.

- Written consents to participate in the study was signed and collected from all three groups.

- At the beginning of the clinical training, mentors and mentees were given the opportunity to have an idea about each other's personalities and work together, face-to-face.

-The mentors received comprehensive training on infection control practice by using the "Infection Control Performance Observational Checklist" during critical care lab rotation.

-The mentors' demonstration and re-demonstration in the skill lab was done under the supervision of the researchers in order to master the skills.

- The evaluation of mentors' infection control practices was done to ensure their competent performance to be mentors in such skills.

- A handout was developed by the researchers about "Peer Mentoring Strategy" to be a reference for both mentors and mentees.

- The "Infection Control Performance Observational Checklist" was distributed amongst the mentors after training sessions to be a reference for them.

- At the beginning of clinical training the researchers conducted two orientation sessions (approximately, two hours for each session) for the mentors and mentees according to their schedules.

- At the beginning of the clinical training, the researchers assessed students' clinical performance by using study tools for both mentees and control groups.

Phase II: implementation phase

Mentors and mentees:

- Each mentee was assigned a patient in the ICU. Each two mentees were assigned to one mentor (15 mentors on 30 mentees).

- The mentees were given the information needed about their patients and their diagnoses by their mentors. Then, the mentees began going through their patients' medical records and start to perform the necessary procedures such as cannula insertion, catheterization and suctioning, following infection control standards.

- Every mentor was the role model for their mentees in taking care of patients and interacting with clinical teachers and medical staff, following the peer mentoring strategy.
- The mentees were never left without observation from their mentors.
- The mentors had to guide, listen to and give feedback to mentees and share their experiences. They had to support, encourage and motivate them.
- Peer mentoring strategy was implemented in the first semester of the academic year 2020 /2021. It was used for 8 weeks, 3 days per week.
- The researchers were available for 4 hours daily during clinical training to observe and supervise the mentors and mentees' performance and correct their mistakes in infection control practice.
- Several follow-up meetings were held, weekly, for mentors and mentees, separately, to discuss their development and ideas and up-coming events.

Control group:

- At the beginning of clinical training, the researchers assessed the control groups' clinical performance of infection control practice, self-efficacy and stress by using tool (I), tool (II) and tool (III).
- The control group was trained, on infection control practice, by clinical instructors, using traditional clinical training schedule and methods (demonstration and re-demonstration).
- Both mentees and control groups were treated equally using the same objectives except for using of the peer monitoring strategy; it was used only with mentees' group.

Phase III: evaluation phase

- At the end of the clinical training both groups (the mentees and the control) were re-evaluated using tools (I), (II) and (III) and the effectiveness of the peer mentoring strategy was estimated.

Ethical considerations:

- Written informed consent was obtained from the study subjects after explaining the aim of the study. They reassured about their right to refuse to participate in the study or withdraw at any time. Patient's privacy was respected. Data confidentiality was ensured during implementation of the study and anonymity of students was ascertained.

Statistical Analysis

- Data was computed and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp). Quantitative data was described using number and percent. The Kolmogorov-Smirnov test was used to verify the normality of distribution. Quantitative data were described using range (minimum and maximum), mean, standard deviation, median. Significance of the obtained results was judged at the 5% level.

Results

Table I shows the distribution of students in both groups in relation to socio-demographic and personal characteristics.

No statistically significant differences were found between the mentees and the control groups.

Table 2 reveals that, there was a high statistically significant difference between all procedures/aspects of infection control practices mean scores among both mentees and control groups, before and after the conduction of the peer mentoring strategy, in favor of the study group whereas $p \leq 0.05$

Table 3 illustrates the comparison between the mentees and control groups according to their self-efficacy levels during infection control practice before and after the application of peer mentoring strategy. It can be noticed that, all students in the mentees group (100%) as compared to almost all in control group (93.3%) had low levels of self-efficacy during infection control practice before the application of peer mentoring strategy. After the intervention, it was noticed that all (100%) mentees compared to about two thirds of control group (60%) had

high levels of self-efficacy. It is evident that there was a statistically significant difference between both groups before and after the intervention ($p=0.492$, $p=0.001$), respectively.

Table 4 displays the comparison between the two studied groups according to overall perceived stress level before and after the application of the peer mentoring strategy. It is noticeable that, nearly all students in the mentees' group (96.7%) as compared to all students (100%) in the control group had high stress level before the application of peer mentoring strategy. But, after the intervention, the stress level of the mentees group had dropped to zero, while, there was no change in the control group.

Table 5 illustrates the correlation between nursing students' perceived stress and infection control performance and self-efficacy among the mentees and control groups before and after the intervention. For the mentees group, there was a significant negative moderate correlation between the variables except for infection control performance and its self-efficacy.

Discussion

Nursing students are confronted with the complexity of the major growth in care methodologies, technology and knowledge. The staff shortage is also another burden. Therefore, clinical nursing educators must sufficiently prepare graduates to face the ever-changing clinical practice demands by various teaching methodologies such as peer mentoring method of teaching. Peer mentoring is effective in teaching and improving infection control practice among nursing students. Additionally, it is increasing the self-efficacy regarding such practice, as well as, decreasing stress caused by the clinical environment, especially in critical care units. (Benade & Jackson, 2018; Ganapathy, 2015).

Infection prevention and control has been a very important aspect in nursing practice, but, its compliance rate is not as great as it should be. On the other hand, it should be applied competently to reduce the risks of

infection exposure and provide high-quality patient care (Habboush et al., 2021).

The results of the present study showed that nursing students (mentees) who are instructed by peer mentoring exhibit higher performance scores and satisfactory practice levels in applying infection control standards than those who are not instructed by such strategy, with a statistically significant difference between before and after the intervention. This result was in line with the Hye and Young (2017) who used lectures, skills training, simulation with standardized patients, and debriefing strategies for instructing one group, while, using lectures, skills training, and peer mentoring practice strategies were used for the other group. There was a statistically significant difference in favor of peer mentoring group in their awareness of standardized precautions and infection control performance levels after the intervention.

Furthermore, Desnita and Surya (2020) conducted a study in which the results showed that infection control performance was significantly higher in the peer mentoring group. This was also, similarly, to a study made by Marey et al. (2020) which revealed that there was a high statistically significant improvement in nurses' levels of total performance in all items of infection control post peer mentoring program.

A very reasonable explanation is that, in peer mentoring, nursing students can learn from their mentor's experiences, whether positive or negative, and learn from mentors' past or common mistakes. Peer mentoring also, provides students opportunities to, not only review their knowledge, but, also, their skills. Additionally, for further improving in infection control performance, nursing students should have high self-efficacy in practice. This also can be reached through peer mentoring.

The results of the current study also, showed that after the intervention, it was noticed that all students in the mentees group compared to more than one half of the control group had high levels of infection

control practice self-efficacy. There was a statistically significant difference between the mentees and the control groups.

Several studies were done to find relations between general self-efficacy and peer mentoring. For instance, Raymond and Sheppard (2017) found that peer mentoring has a high statistically significant difference in favor of the study group in terms of perceived stress, loneliness scale, sense of belonging and self-efficacy. This might be due to the fact that the peer mentoring strategy increases students' motivation to learn. It also makes them become more empowered to make decisions, more self-confident and more independent.

In contrast to the present study, Brannagan et al. (2013) results showed that there were no statistically significant differences between study and control groups in self-efficacy principles when peer mentoring was applied to the study group.

Peer mentoring can also be helpful in other ways. Aside from providing a secure, controlled and supportive environment, the peer mentoring program is very effective in reducing stress caused by the stressors in the clinical area (Li et al., 2010).

The results of the present study showed that there was a high statistically significant difference between the mentees and control groups, before and after the implementation of the peer mentoring strategy in the mean scores of perceived stress. The reduction of stress level was in favor of the mentees group compared to the control group. This finding were congruent with the study conducted by Yüksel and Bahadır-Yılmaz (2019) who found that, later in the mentoring program, stress among nursing students relieved. Correspondingly, in other study carried out by Demir et al. (2014), it was conveyed that the mentoring program improved students' problem-focused methods of handling stress and reduced emotion-focused dealing with stress.

Moreover, Abdolalizadeh et al. (2017) reported that undergraduate medical students conveyed that peer mentoring programs

assisted them to diminish their stress, and face new situations. Therefore, mentoring program not only reduces students' stress levels but, also, improves their coping methods with stress.

This can be justified by the fact that peer mentoring allows students to learn in a safe and comfortable environment, which provided with guidance rather than instructions and provided with emotional support. Nursing students felt less threatened with the instructors who are close to their age and this makes them less stressed.

Contradictory to such result, in a study conducted by McNulty, in 2018, it was noted that, although the implementation of peer mentoring can decrease stress in nursing students, its effect was not significant.

There are many plausible explanations for the irregularity of these results. For instance, small sample sizes could have been a cause as well as, insufficient time for data collection. There could have also been interactions between students of mentees and control groups and that can cause confusion.

The results of the study displayed that there was a significant negative moderate correlation between nursing infection control performance and perceived stress as well as, the relation between perceived stress and self-efficacy. There was a significant positive moderate correlation between nursing performance and self-efficacy.

Similarly, Zhang et al. (2021) showed that performance and self-efficacy was negatively correlated with stress and workload. Moreover, in another study, the Spearman correlation test displayed a statistically significant relationship between stress levels and general self-efficacy (Walpola et al., 2020). Furthermore, Kurniawan et al. (2019) findings displayed that there was a reasonable correlation between self-efficacy and novel nurse performance.

Conclusion

Peer mentoring is a great tactic that can enhance nursing students' experiences in the

clinical field especially in the critical care units. It has been proven its effectiveness in decreasing stress and improving infection control practice and its self-efficacy. These are all important factors in clinical practice. There was an overall positive feedback from the studied students about implementation of peer mentoring into clinical education. This further proves the significance of the strategy in nursing education.

Recommendations

In line with the findings of the study, the following recommendations are suggested:

- Peer mentoring strategy should be considered as a significant teaching method to be applied in nursing education in clinical practice curricula.
- Training workshops should be conducted for nursing educators and students to enhance their abilities and competencies in the use of peer mentoring strategy.

Further studies

- Repetition of this study using large probability sample in different nursing specialties.
- The impact of online of peer mentoring strategy on nursing students' academic achievement.

Limitations

The study sample was small. There was also inadequate data about mentors because there was no data that collected from them.

Conflict of interest

The authors declare that they have no conflicts of interest

Acknowledgment

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Table (1): Comparison between the mentees and control groups according to socio-demographic and personal characteristics

Socio demographic data	Mentees (n = 30)		Control (n = 30)		Test of Sig.	p
	No.	%	No.	%		
Age (years)						
18	18	60.0	17	56.7	$\chi^2=$ 0.069	0.793
19	12	40.0	13	43.3		
Min. – Max.	18.0 – 19.0		18.0 – 19.0		t= 0.258	0.798
Mean \pm SD.	18.40 \pm 0.50		18.43 \pm 0.50			
Median	18.0		18.0			
Sex						
Male	0	0.0	0	0.0	–	–
Female	30	100.0	30	100.0		
Residence						
Urban	30	100.0	30	100.0	–	–
Rural	0	0.0	0	0.0		
Type of family						
Extended family	13	43.3	16	53.3	$\chi^2=$ 0.601	0.438
Nuclear family	17	56.7	14	46.7		
Financial status						
Low	10	33.3	8	26.7	$\chi^2=$ 2.261	MC p= 0.367
Moderate	18	60.0	22	73.3		
High	2	6.7	0	0.0		
Status of satisfaction with regards to being a student						

Satisfied	25	83.3	20	66.7	$\chi^2=2.222$	0.136
Unsatisfied	5	16.7	10	33.3		
Status of participating in social activities						
Participating	20	66.7	14	46.7	$\chi^2=2.443$	0.118
Non-participating	10	33.3	16	53.3		
Reason for selecting nursing career						
Family wish	5	16.7	8	26.7	$\chi^2=2.540$	0.515
Finding a job easily	17	56.7	15	50.0		
Bringing a positive change in someone's life	3	10.0	5	16.7		
Respectable profession	5	16.7	2	6.7		
Others	0	0.0	0	0.0		

x²: Chi square test

t: Student t-test

SD: Standard deviation

p: p value for comparing between the studied groups

Table II: Comparison between the mentees and control groups according to mean scores of infection control practices before and after the intervention.

Infection control practice' score	Mentees (n = 30)		Control (n = 30)		U (p ₁)	U (p ₂)
	Pre	Post	Pre	Post		
Overall nursing students' infection control performance						
Total Score (0 – 194)	55.43 ± 9.31	183.97 ± 8.63	71.83 ± 9.41	134.1 ± 55.54	104.50*	231.0*
% Score	28.57 ± 4.80	94.83 ± 4.45	37.03 ± 4.85	69.11 ± 28.63	(<0.001*)	(0.001*)
Z (p₀)	4.784* (<0.001*)		3.850* (<0.001*)			

U: Mann Whitney test Z: Wilcoxon signed ranks test SD: Standard deviation

p₁: p value for comparing between the studied groups in **pre**p₂: p value for comparing between the studied groups in **post**p₀: p value for comparing between **pre** and **post** in each group

*: Statistically significant at p ≤ 0.05

Table III: Comparison between the mentees and control groups according to infection control practice self-efficacy levels before and after the intervention

Infection control practice Self-Efficacy	Mentees (n = 30)				Control (n = 30)				Test of Sig. (p ₁)	Test of Sig. (p ₂)
	Pre		Post		Pre		Post			
	No.	%	No.	%	No.	%	No.	%		
Low Self-Efficacy (20 - < 40)	30	100.0	0	0.0	28	93.3	10	33.3	$\chi^2=2.069$ (^{FE} p=0.492)	$\chi^2=15.707^*$ (^{MC} p<0.001*)
Moderate Self-Efficacy (40 – <60)	0	0.0	0	0.0	2	6.7	2	6.7		
High Self-Efficacy (60 – ≤ 80)	0	0.0	30	100.0	0	0.0	18	60.0		
Test of Sig.(p₀)	28.033* =McN (<0.001*)				MH=41.0* (<.001*)					
Total Score (20 – 80)	32.77 ± 3.31		70.97 ± 2.20		32.17 ± 4.25		56.10 ± 16.88		U=368.0	U=192.0*

% Score	21.28 ± 5.51	84.94 ± 3.67	20.36 ± 7.04	60.17 ± 28.13	(0.223)	(<0.001*)
Z (p₀)	4.785* (<0.001*)		4.457* (<0.001*)			

χ^2 : Chi square test McN: McNemar test MC: Monte Carlo FE: Fisher Exact
 U: Mann Whitney test Z: Wilcoxon signed ranks test SD: Standard deviation
 p₁: p value for comparing between the studied groups in **pre**
 p₂: p value for comparing between the studied groups in **post**
 p₀: p value for comparing between **pre** and **post** in each group
 *: Statistically significant at $p \leq 0.05$

Table IV: Comparison between the mentees and control groups study and control groups according to perceived stress level before and after the intervention

The Perceived Stress Scale (PSS)	Mentees (n = 30)				Control (n = 30)				Test of Sig. (p ₁)	Test of Sig. (p ₂)
	Pre		Post		Pre		Post			
	No.	%	No.	%	No.	%	No.	%		
Low stress (0 – < 63)	1	3.3	30	100.0	0	0.0	0	0.0	$\chi^2=1.017$ (^{FE} p=1.000)	$\chi^2=73.172^*$ (<0.001*)
Moderate stress (64 – < 88)	0	0.0	0	0.0	0	0.0	21	70.0		
High stress (89 – < 126)	29	96.7	0	0.0	30	100.0	9	30.0		
McN (p₀)	27.034* (<0.001*)				<0.001*					
Total Score (0 – 126)	102.0 ± 17.20		104.7 ± 3.83		103.90 ± 4.38		86.70 ± 9.18		U=411.0 (0.563)	U=0.0* (<0.001*)
% Score	80.95 ± 13.65		8.31 ± 3.04		82.46 ± 3.48		68.81 ± 7.29			
Z (p₀)	4.783* (<0.001*)				-4.543* (<0.001*)					

χ^2 : Chi square test McN: McNemar test FE: Fisher Exact
 U: Mann Whitney test Z: Wilcoxon signed ranks test SD: Standard deviation
 p₁: p value for comparing between the studied groups in **pre**
 p₂: p value for comparing between the studied groups in **post**
 p₀: p value for comparing between **pre** and **post** in each group
 *: Statistically significant at $p \leq 0.05$

Table V: Correlation between infection control performance, self-efficacy and perceived stress among the mentees and control groups.

Nursing students' infection control performance, self-efficacy and stress		Mentees (n = 30)		Control (n = 30)	
		Pre	Post	Pre	Post
Nursing performance Vs. The perceived stress scale (PSS)	R	0.153	-0.506*	-0.189	-0.074
	P	0.419	0.004*	0.316	0.697
Nursing performance Vs. Self-Efficacy	R	0.369*	0.447*	0.144	-0.064
	P	0.045*	0.013*	0.448	0.736
The perceived stress scale (PSS) Vs. Self-Efficacy	R	0.130	-0.406*	-0.159	-0.212
	P	0.495	0.026*	0.402	0.263

r: Pearson coefficient *: Statistically significant at $p \leq 0.05$ Evans (1996) suggests for the absolute value of r:
 0.00-0.19: “very weak” 0.20-0.39: “weak” 0.40-0.59: “moderate” 0.60-0.79: “strong” 0.80-1.0: “very strong”

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