ORIGINAL RESEARCH ARTICLE

The Effectiveness of Positive Psychology Group Training on Nurses' Happiness: A Clinical Trial

Khatereh Gol Mohammadi[1], Fatemeh HajiBabaee[2] (iD), Maryam Esmaeili[2] (iD),
Maral Abbasi Arkhlo[1] (iD), Shima Haghani[3] (iD)

Abstract

Background Due to the nature of their profession, nurses play a critical role in promoting public health. Their level of happiness significantly impacts the quality of their work. Positive psychology interventions have proven to be effective tools for enhancing employee well-being, organizational success, and job performance. This study aimed to evaluate the effectiveness of group-based positive psychology training on nurses' happiness.

Methods This quasi-experimental, non-randomized clinical trial was conducted in 2021 at Imam Reza Hospital Complex in Kermanshah, Iran. A total of 64 nurses who met the inclusion criteria were selected through simple random sampling and evenly assigned to intervention and control groups. The intervention group participated in seven weekly 120-minute sessions of group-based positive psychology counseling, delivered through both in-person and blended online formats (synchronous and asynchronous). Data were collected using the Oxford Happiness Questionnaire, completed by participants at three time points: before the intervention, immediately after, and one-month post-intervention. Data were analyzed using SPSS version 16, employing independent t-tests, Pearson correlation, ANOVA, Chi-square, Mann–Whitney, and Kruskal–Wallis tests.

Results There was no statistically significant difference in happiness scores between the intervention and control groups before the intervention. However, the mean happiness scores in the intervention group were significantly higher than those in the control group both immediately after the intervention (M = 62.70, SD = 4.66) and one month later (M = 59.46, SD = 5.07) (p ≤ 0.001).

Conclusion The findings indicate that positive psychology training effectively increases nurses' happiness. Therefore, implementing and institutionalizing programs based on positive psychology may serve as a valuable strategy for enhancing nurses' performance and improving the quality of patient care.

Keywords Positive Psychology, Nurses, Happiness

✉   Fatemeh HajiBabaee
     hajibabaeefateme@yahoo.com

1.   School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran
2.   Nursing and Midwifery Care Research Center, School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran
3.   Nursing Care Research Center, Iran University of Medical Sciences, Tehran, Iran

1 Introduction

In healthcare organizations, human resources are among the most important assets, playing a key role in improving access to services and enhancing the quality of care. [1,2] Nurses, as a major group of healthcare providers, contribute the most to delivering high-quality services to patients in hospitals.[2] Within the health sector, nurses, who make up the largest proportion of the workforce, operate in highly stressful and demanding environments, which call for greater attention to their well-being. Nurse shortages and turnover represent global challenges faced by both developed and developing countries alike. Therefore, to achieve maximum efficiency and effectiveness in nursing care, it is essential that nurses not only possess the necessary skills and expertise but also maintain sufficient interest, morale, and motivation in their work.

Accordingly, addressing factors that can reduce occupational stress and tension among nurses is a critical priority for healthcare organizations, as it can lead to greater productivity, improved quality of patient care, and ultimately the enhancement of public health. [3-5] One of the key factors contributing to organizational productivity and employee efficiency is the level of happiness among staff.[1,6,7] Researchers emphasize that employee happiness, including that of healthcare providers, is a vital component of health development. It fosters the effective use of knowledge and clinical skills, strengthens communication between patients and healthcare teams, and ultimately promotes overall health. [8,9]

In psychology, happiness is defined as an emotion, a type of arousal that individuals label based on their subjective evaluations. These emotions can be categorized broadly into positive and negative emotions. [10] With the emergence of positive psychology, a new movement has arisen, directing psychologists' attention toward positive emotions and their components, such as happiness.[10] Happiness is a vital concept for both physical and mental health, defined as a state of lasting, fulfilling, and satisfying contentment with life. It is an important factor that enables individuals to maintain a positive outlook on their own lives and those of others.[11] Happiness also stimulates the mind, increases sensitivity to external stimuli, and creates opportunities for greater engagement with one's surroundings, which in turn enhances creativity.[2] This emotional state plays a crucial role in improving performance and collaboration in the workplace.[12,13]

According to the World Happiness Report (2019–2021), Finland and Afghanistan received the highest and lowest happiness scores, respectively. The Islamic Republic of Iran ranked 110th among 146 countries. Although Iran's happiness score was lower than that of some countries in the Eastern Mediterranean Region (EMRO), such as Saudi Arabia, the United Arab Emirates, Bahrain, Iraq, and Algeria, it was higher than that of others, including Jordan, Tunisia, and Egypt.[14]

Although limited, studies on nurses' happiness in Iran have been conducted. The findings of Mousavi et al. and Khosrojerdi et al. indicated that nurses' happiness levels were moderate (acceptable).[15,16] Nurses' happiness creates positive and constructive impacts for both themselves and their patients. These effects include increased job satisfaction, improved health status, enhanced quality of nursing care, stronger organizational commitment, higher self-esteem, improved teamwork, reduced anxiety and irritability, and ultimately increased productivity and the provision of more effective and efficient care services.[15,17-20]

One area of positive psychology that has gained significant attention in recent years is positive psychology interventions, first introduced in the United States by Seligman et al.[21] These interventions are based on principles that enhance positive emotions, thoughts, and behaviors, and fulfill basic human needs such as autonomy, love, and belonging. Such approaches have been shown to reduce depression and increase happiness and psychological well-being.[22] Positive psychology interventions are cost-effective, easy to implement, and do not involve side effects or stigmatization of participants.[23]

Findings from several meta-analyses indicate that applying positive psychology interventions is associated with increased well-being and reduced symptoms of depression.[24,25] Therefore, adopting positive psychology approaches fosters greater commitment in individuals, motivating them to actively pursue life goals with higher enthusiasm. A prerequisite for this process is the recognition of inner strengths, their effective utilization in life, and setting life goals based on these strengths. In this regard, it can be stated that employing positive psychology approaches facilitates movement toward a more flourishing and fulfilling life.[26]

In recent years, studies evaluating the effectiveness of positive psychology interventions have been increasing. Many of these studies have reported that such interventions positively influence happiness,[27-29] personal goal setting,[30] expressions of gratitude,[27] life satisfaction,[31] job satisfaction, enhanced well-being, and, in some cases, reduced symptoms of depression.[24] Seligman et al. have demonstrated that training in positive psychology interventions can enhance happiness, positive emotions, and a meaningful and committed life.[32] In a study conducted in Iran, Jahromi et al. examined the effectiveness of positive thinking on nurses' work quality, reporting improvements in their quality of work life.[33] Despite the importance of this area, there is a limited

number of studies investigating the impact of positive psychology interventions on nurses' job performance and its various dimensions, indicating a need for further research.

It is clear that the most important factor influencing success in any organization is its human resources. A workforce endowed with creativity, initiative, motivation, happiness, and job satisfaction plays a critical role in organizational performance. On the other hand, a lack of motivation and dissatisfaction among nurses in the workplace is evident, which significantly reduces their job productivity and the quality of services they provide to patients. This highlights the need to identify effective solutions to enhance nurses' happiness.

Given that research on the effects of such interventions on the nursing population has been very limited in all countries, including Iran, and considering factors such as the neglect of nurses in the design and training of positive psychology skills, as well as the lack of related studies examining the effects of positive psychology interventions on nurses' happiness, the present study was conducted. Its aim was to determine the impact of group-based positive psychology training on the happiness of nurses in educational and medical centers in the city of Kermanshah.

2 Methods

The present study is a randomized clinical trial conducted in 2021. The study population consisted of all nurses working at Imam Reza Hospital in Kermanshah (640 individuals). After obtaining ethical approval IR.TUMS. FNM.REC.1399.131 from the Joint Ethics Committee of the School of Nursing and Midwifery and the School of Rehabilitation of Tehran University of Medical Sciences, and registering the trial under the code RCT IRCT20210228050529N1, the researcher, with an official introduction letter from Tehran and Kermanshah Universities of Medical Sciences, referred to the target hospital.

To determine the minimum required sample size at a 95% confidence level and 80% statistical power, and assuming that the impact of training on nurses' happiness in the intervention group compared to the control group would be at least 3 units (a difference considered statistically significant), the sample size formula yielded 26 participants per group. Considering a potential 20% dropout rate, the sample size was estimated at 32 participants per group. The study sample size was determined to be 64 participants using the sample size calculation formula. Of these, 32 nurses were assigned to the intervention group and 32 to the control group. Sampling was performed randomly using a coin toss method, whereby two similar hospital wards were identified, with one designated as the intervention group and the other as the control group.

To ensure comparability between the control and intervention groups and to avoid bias, efforts were made to include similar wards in both groups. After identifying the wards for each group, nurses working in those wards were selected through simple random sampling. Based on the list of nurses in each ward, eligible nurses were chosen using a lottery method according to their personnel numbers, without replacement. Personnel numbers were written on separate slips of paper and placed in a box; slips were drawn one by one until the required sample size for each group was completed.

Inclusion criteria were willingness and informed consent to participate in the study, a minimum of one year of work experience as a nurse, no use of sedative medications, no death of first-degree relatives within the past six months, no history of diagnosed psychiatric disorders based on participants' medical records, and continuous internet access for participation in live virtual sessions. Exclusion criteria were withdrawal of the participant's consent at any stage of the study, simultaneous participation in other counseling or psychological programs, and absence from more than two sessions of the intervention. For data collection, a demographic information questionnaire and the Oxford Happiness Questionnaire (OHQ) were used.

OHQ

Hills and Argyle reported a Cronbach's alpha of 0.90 and a test-retest reliability of 0.78 over seven weeks for the OHQ.[34] In Iran, the questionnaire was translated and validated by Liaghatdar et al., confirming its reliability and validity for Iranian populations.[35] In a study by Mousavi et al. on nurses, the Cronbach's alpha reliability coefficient for the OHQ was reported as 0.93.[15] Since this study is the first of its kind in Kermanshah, the reliability of the OHQ was examined using the test-retest method with a two-week interval in a pilot sample of 15 randomly selected nurses. The internal consistency reliability (Cronbach's alpha) of the OHQ was found to be 0.87.

Regarding the implementation of the intervention and the voluntary participation in the study, the process began with measures to prevent information contamination between the intervention and control groups. Initially, demographic information and OHQ were sent via email to nurses in the control group, allowing a two-week period for completion.[36] Reminder emails were sent during this period to ensure responses. Data collection for the intervention group commenced only after completing sampling for the control group.

Once the groups were determined, sessions were conducted using a hybrid format of in-person and virtual meetings (both synchronous and asynchronous), according to circumstances. Except for the first session, which was held in person at the hospital to introduce

the intervention, the remaining sessions were conducted virtually due to the COVID-19 pandemic and the heavy workload of participating nurses. The second and seventh sessions were synchronous virtual meetings using the Skyroom platform, where all 32 participants of the intervention group attended simultaneously. These sessions included lectures by the instructor, question-and-answer discussions, and assignment reviews. The initial sessions introduced positive psychology, facilitated participant introductions, and explored individual strengths, worldviews, and the role of positive psychology in fostering hope and optimism.

Sessions three to six were conducted asynchronously via the Telegram platform, involving question-and-answer interactions and the sharing of audio files in the designated channel. These sessions focused on topics such as hope and optimism, goal setting and meaning-making, optimism and empowerment, understanding happiness, motivation, and deriving pleasure from interpersonal interactions. Each session included home exercises tailored to the discussed content.

For virtual sessions, all participants joined online at a predetermined time, during which the research team delivered the session content through slides, PDF materials, and audiovisual presentations. Group discussions, questions, and answers were facilitated both verbally and through written and audio-visual materials. The research team remained available throughout the study period to respond to participants' inquiries privately or within the virtual group. Assignments were submitted confidentially to the research team and discussed anonymously in subsequent sessions. All sessions were scheduled in advance to ensure simultaneous participation.

Ultimately, the intervention group underwent seven weekly sessions, each lasting 120 minutes, on positive psychology based on Seligman et al. and Rashid et al.'s protocol. These sessions were conducted by a research team member holding a Ph.D. in psychology, who had received specialized training and possessed sufficient expertise in positive psychology.

After completing the in-person and virtual sessions, the OHQ was re-administered to conduct the post-test and assess the sustainability of the intervention's effectiveness. The questionnaire was sent via email to participants immediately and one month after the conclusion of the educational sessions,[37,38] with a one-week period provided for completion. Reminder emails were also sent during this time to encourage responses. It should be noted that no intervention was conducted for the control group. Two participants from the intervention group were excluded because they missed more than two sessions.

Ultimately, the collected data were processed and analyzed using SPSS version 16, employing independent t-tests, analysis of variance (ANOVA), and chi-square tests. Chi-square and Fisher's exact tests were used to assess the homogeneity of qualitative variables between the two groups, while independent t-tests were applied to compare quantitative variables. Repeated-measures ANOVA was used to examine differences in happiness levels before the intervention, immediately after, and one month following the intervention. Bonferroni tests were employed for pairwise comparisons of happiness scores at these three time points (Figure 1)
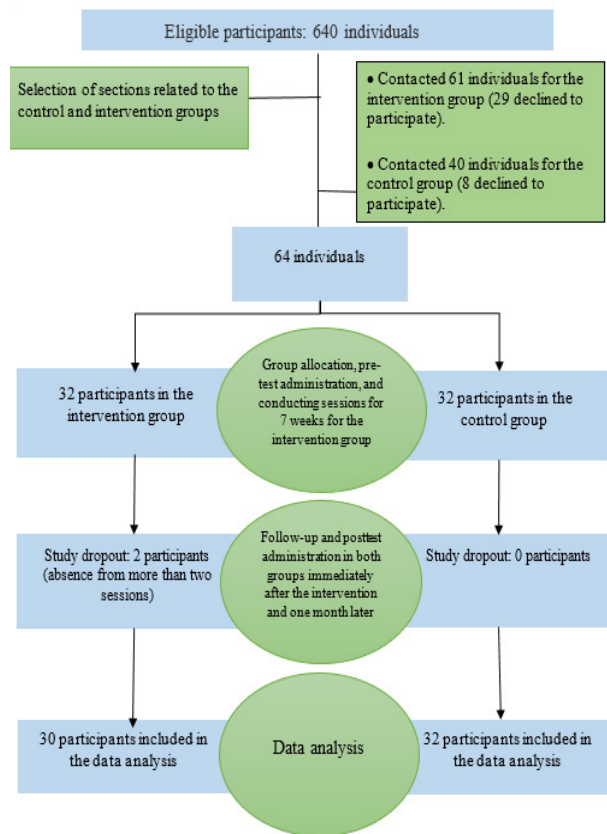

Figure 1 Implementation process based on CONSORT criteria

3 Results

The participating nurses were compared between the intervention and control groups based on their demographic and occupational characteristics (Table 1). The two groups were homogeneous, with no statistically significant differences in terms of gender, level of education, organizational position, type of employment, shift type, department of service, marital status, history of divorce, income level, care of COVID-19 patients, history of COVID-19 infection, age, and years of service $(p \geq 0.05)$.

Table 1 Frequency distribution of demographic and occupational characteristics of nurses in the intervention and control groups and significance test results

Demographic and occupational characteristics	Intervention group (n = 30)	Control group (n = 32)	Test result
	Count	%	Count
Gender*			
Female	18	60.0	22
Male	12	40.0	10
Education**			
Bachelor's degree	27	90.0	27
Master's degree	3	10.0	5
Organizational position**			
Nurse	26	86.7	27
Head Nurse	4	13.3	5
Employment type**			
Contract	13	43.3	13
Temporary	4	13.3	2
Permanent	13	43.3	17
Shift type*			
Fixed	11	36.7	15
Rotating	19	63.3	17
Department*			
General	13	43.3	17
Special	17	56.7	15
Marital status*			
Married	17	56.7	19
Single	13	43.3	13
History of divorce**			
Yes	1	3.3	1
No	29	96.7	31
Income*			
Less than expenses	10	33.3	7
Equal to expenses	13	43.3	18
More than expenses	7	23.3	7
Caring for COVID-19 patients*			
Yes	11	36.7	14
No	19	63.3	18
History of COVID-19 infection*			
Yes	16	53.3	20
No	14	46.7	12
Age (years)***	Mean ± SD	33.90 ± 37.5	35.77 ± 87.6
Years of service***	Mean ± SD	16.85 ± 12.3	3.51 ± 78.10

* Based On Chi-Square Test
** Based On Fisher's Exact Test
*** Based on the Independent Samples t-test

To determine and compare nurses' happiness scores in the control group before, immediately after, and one month after the intervention, as well as to determine and compare happiness in the intervention group at the same time points, the results presented in Table 2 indicate the following:

In the control group, the mean happiness scores before, immediately after, and one month after the intervention were 41.09 ± 2.67, 39.93 ± 3.11, and 40.96 ± 4.28, respectively. Repeated measures ANOVA showed no statistically significant difference in mean happiness scores at these time points ($p = 0.16$).

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In the intervention group, the mean happiness scores before, immediately after, and one month after the intervention were 42.20 ± 3.08, 62.70 ± 4.66, and 59.46 ± 5.07, respectively. Repeated measures ANOVA indicated a statistically significant difference in mean happiness scores across at least one of the time points (p ≤ 0.001). Pairwise comparisons using the Bonferroni test are presented in the following Table 2.

Table 2 Mean and standard deviation of nurses' happiness scores in the control and intervention groups before, immediately after, and one month after the intervention, and the results of statistical analysis

Time point	Intervention group (n = 30)	Control group (n = 32)
	Mean ± SD	Mean ± SD
Before	42.20 ± 3.08	41.09 ± 2.68
Immediately after	62.70 ± 4.66	39.93 ± 3.11
One month after	59.46 ± 5.07	40.96 ± 4.28

Repeated Measures ANOVA results:
- Intervention group: F = 211.03, p ≤ 0.001
- Control group: F = 1.97, p = 0.160

To compare nurses' happiness between the intervention and control groups before, immediately after, and one month following the intervention, a repeated-measures analysis of variance was conducted. The results indicated significant effects of time, group, and their interaction (p ≤ 0.001). Given the significant interaction effect, comparisons between the two groups were performed separately for each time point (Table 3). There was no statistically significant difference in happiness scores before the intervention. However, both immediately and one month after the intervention, the difference was significant, with the mean happiness score in the intervention group being significantly higher than that of the control group (p ≤ 0.001). Each time point (Table 3). As shown, there was no statistically significant difference in happiness scores between the groups before the intervention; however, immediately and one month after the intervention, the differences were statistically significant, with the mean happiness score in the intervention group being significantly higher than in the control group (p ≤ 0.001).

Two-way repeated-measures ANOVA results:
- Time effect: F_{time} = 148.08, p ≤ 0.001
- Time × Group interaction: $F_{time \times group}$ = 78.173, p ≤ 0.001
- Group effect: F_{group} = 415.12, p ≤ 0.001

Bonferroni test results indicated that in the intervention group, happiness scores differed significantly before the intervention, immediately after, and one month following the intervention (p ≤ 0.001). Specifically, happiness before the intervention was significantly lower compared to the other two time points. This indicates that happiness in the intervention group increased after the implementation of the intervention, suggesting that the positive psychology group training was effective in enhancing nurses' happiness (Table 4).

Table 4 Pairwise comparison of nurses' happiness before, immediately after, and one month after the intervention in the intervention and control groups (Bonferroni test)

Group	Time comparison	Mean difference	P-value
Intervention	Before – Immediately after	-20.50	p ≤ 0.001
	Before – one month after	-17.26	p ≤ 0.001
	Immediately after – one month after	3.23	p = 0.010
Control	Before – immediately after	1.15	p = 0.110
	Before – one month after	0.125	p = 0.987
	Immediately after – one month after	-1.03	p = 0.201

4 Discussion

The aim of this study was to examine the effectiveness of positive psychology group training on nurses' happiness. To achieve this goal and compare nurses' happiness in the intervention and control groups before, immediately after, and one month following the intervention, the present study results indicated that before the intervention, nurses in both the intervention group (42.20 ± 3.08) and the control group (41.09 ± 2.67) had an acceptable and moderate level of happiness (range: 29–57).

Table 3 Mean and standard deviation of nurses' happiness in the intervention and control groups before, immediately after, and one month after the intervention, and independent t-test results

Time point	Group	Mean	Standard deviation	Independent t-test result
Before intervention	Intervention	42.20	3.08	t(60) = 1.50, p = 0.137
	Control	41.09	2.68	
Immediately after	Intervention	62.70	4.66	t(60) = 22.72, p ≤ 0.001
	Control	39.93	3.11	
One month after	Intervention	59.46	5.07	t(60) = 15.55, p ≤ 0.001
	Control	40.96	4.28	

Consistent with this finding, a study by Vakili et al. reported a moderate level of happiness (57%) among nurses working in Yazd.[39] Similarly, a meta-analysis in South Korea indicated moderate levels of happiness among nurses employed in the public sector.[40] However, some studies conducted in Iran and elsewhere among nurses or other professional groups have reported higher levels of happiness. For example, Golmakani et al. reported very good levels of happiness among midwives working in Mashhad. This discrepancy may be explained by the fact that nurses face greater threats to happiness in their profession. Factors emphasized in previous studies include high workload, ineffective management, low salaries and wages, and insufficient resources.[41]

One of the primary objectives of this study was to determine the effectiveness of positive psychology group training on the happiness of nurses working in a selected hospital in Kermanshah. The results regarding the mean happiness scores indicated a significant difference between the intervention and control groups in the post-test. In other words, the mean happiness scores of participants who received positive psychology group training were higher compared to those who did not receive this intervention.

These findings are consistent with previous studies. For instance, Farnam and Madadizade reported that positive psychology training increases positive mood and happiness. Their study demonstrated that positive psychology interventions can cultivate personal strengths, change attitudes, and present practical approaches for living happily. In this regard, positive psychology, by emphasizing optimism and altering thought patterns as a suitable educational and intervention model, has proven effective in improving positive psychological states.[42]

Similarly, a study by Ritter et al., which examined the effectiveness of writing about positive experiences in preventing depressive symptoms and enhancing psychological well-being, found that such interventions reduced depressive mood and increased positive states and well-being in adolescents. Increased happiness and reduced maladaptive attitudes are key indicators of mental health. Since positive psychology emphasizes enhancing happiness and joyful living, correcting thoughts, and utilizing strengths and capabilities, its training sessions and exercises can significantly enhance positive psychological states (such as happiness and positive thinking) by focusing on developing and strengthening individual capabilities.[43]

In this regard, Kloos et al. also demonstrated that training in optimism and positive psychology skills encourages nurses to recognize their positive experiences and their role in enhancing patient health, rather than dwelling on or ruminating over negative thoughts about the work environment and job-related difficulties. Such training teaches individuals to adopt a holistic perspective, actively engage with the world, shape their own lives, clearly articulate their vision of a good life, and find and reconstruct the best aspects of any situation. This approach enables nurses to accept their limitations, avoid denial, and hold realistic expectations of their performance. By fostering positive thinking , a general expectation that good events will occur more often than bad ones in the future (even if this belief is unrealistic) , this type of intervention can influence how individuals cope with stressful events and challenges in work and life. Overall, positive psychology–based training promotes a positive outlook, joyful living, viewing life's good aspects, recognizing strengths in oneself and others, transferring positive energy to others, reducing psychological stress, and increasing self-confidence. These factors collectively contribute to enhancing the happiness of participants, consistent with the findings of the present study.[44]

Furthermore, the results of this study align with the findings of Donaldson et al. which indicated that positive psychology enhances positive emotions, expands personal strengths, and fosters meaning in life, thereby reducing depressive symptoms and increasing happiness. Group training in positive psychology, employing techniques such as optimism and positive thinking skills based on constructs such as intimacy, precise empathy, initial trust, authenticity, and mutual understanding, leads to positive emotional experiences. Additionally, changes in worldview and self-perception, efforts to identify and develop one's strengths, focusing on life's positive aspects, and reframing negative perspectives result in reduced self-blame, decreased depression, and increased happiness among nurses.[45]

On the other hand, the results of a study by Rashid Almasi et al. which aimed to examine the effectiveness of positive psychotherapy on depression, stress, and happiness, indicated that this intervention method was associated with reduced depression and stress and increased levels of happiness. The researchers, in explaining their findings consistent with the present study argued that positive psychotherapy enhances happiness by increasing positive emotions and thoughts and satisfying basic human needs such as autonomy, belongingness, and connection. Although positive psychotherapy does not directly target the content of thoughts, the use of constructive responding techniques such as noting three good things each day increases positive emotions, prevents negative emotions in the personal sphere, and enhances positive relationships, all of which affect mental health and happiness. Additionally, the assignments and exercises in positive psychotherapy teach individuals how to distance themselves from intrusive thoughts, accept negative events, and focus on their underappreciated strengths.[46]

Moreover, Motowidlo et al. described an interesting cycle of the effects of positive and negative emotions on overall emotional states to explain the impact of this

approach and explore how happiness is generated and depression develops in individuals. They showed that anxious individuals, by fostering negative emotions and excluding positive ones, increase self-blame and restlessness, eventually falling into a tunnel-like process a cognitive-emotional pattern in which the individual becomes trapped in a certain mindset and finds it difficult to exit. When this "tunnel" closes, the individual may experience severe depression, guilt, and even suicidal thoughts.[47]

According to Carr, in happiness training programs, reducing expectations, fostering positive thinking, decreasing negative emotions, halting distress, increasing social interaction, strengthening close relationships, and engaging in meaningful activities are essential.[48] Therefore, it is reasonable to assume that in this study, nurses especially during the COVID-19 pandemic were trapped in such a problematic tunnel, where escaping was not easy. Consequently, changes in worldview, recognition of personal abilities, focusing on the positive aspects of life and the nursing profession, and reframing negative perspectives led to an increase in their happiness One of the most important needs of hospitals for providing quality and worthy services is having a healthy, motivated, and energetic healthcare workforce. The findings of the present study suggest that teaching positive thinking skills to nurses aims to strengthen and improve their relationships with themselves, others, and the world, as well as to enhance their happiness. This process enables individuals to better understand themselves, recognize their positive experiences, and realize the role of these experiences in enhancing self-respect.

Focusing on positive aspects and past good experiences increases the likelihood of adopting more positive perceptions of oneself and others, thereby enabling individuals to gain a deeper understanding of themselves. Studies confirm that during positive psychology training, individuals take steps toward recognizing their abilities, capabilities, and positive attributes in themselves and others, which in turn improves their attitudes toward others. This approach, by emphasizing strengths and abilities, optimizing moments of joy, increasing focus on positive matters and emotions, preventing the intrusion of negative emotions into the personal sphere, and fostering positive relationships a core principle of the positive psychology approach can positively influence individuals' mental health. Optimism, as supported by research, has the potential to transform expected outcomes.[49]

Therefore, teaching positive thinking skills to nurses not only facilitates self-awareness but also reinforces recognition of positive experiences and their role in enhancing self-esteem. Given these benefits, it is recommended that nursing managers regularly incorporate positive psychology training into the educational programs for clinical nurses, with such training delivered by specialized instructors to ensure effectiveness and sustainability.

The current working conditions of nurses are accompanied by increased emotional pressures. Therefore, one of the key factors that can contribute to the health of both nurses and patients is fostering a joyful spirit among nurses. Nurse happiness is associated with enhanced health, improved quality of life, increased self-esteem, greater self-confidence, and strengthened job performance.[50]

It is recommended that nursing managers provide staff with greater autonomy and flexibility regarding the tasks they perform and how they perform them. This approach enables employees to choose tasks that they are more likely to perform effectively, particularly if the chosen tasks align with their personal interests. Such empowerment can significantly enhance job satisfaction and overall performance.

Furthermore, policymakers and healthcare managers are advised to reconsider and improve nurse compensation systems, ensuring salaries and benefits are commensurate with the difficulty and workload of nursing tasks. Revising job descriptions for different nursing roles, strengthening managerial support, increasing nurse participation in decision-making processes, fostering regular dialogue between managers and nurses, and providing training in problem-solving skills are important strategies that can enhance nurse happiness. These measures not only contribute to nurses' well-being but also improve patient care and the overall quality of healthcare services.

Given that the data in the present study were collected through self-reporting, such data may be subject to biases, including the tendency to provide socially desirable responses, memory errors, or individual differences in interpreting questions. In other words, respondents may not always report exactly what they have truly experienced. Furthermore, since the study was conducted during the COVID-19 pandemic, the unique conditions arising from this period , such as increased workload for nurses, occupational stress, health-related concerns, and shifts in organizational priorities , may have influenced nurses' psychological state, well-being, work engagement, and even their manner of responding to the questionnaires. Other limitations of the present study include the lack of blinding and its conduct during the COVID-19 pandemic. To address these limitations, a mixed-method approach was employed for implementing the intervention.

5 Conclusion

According to the findings, well-being differed between the control and intervention groups in the group-based

positive psychology training. Seven weeks of training in positive thinking skills and familiarization with positive psychology significantly enhanced the well-being of nurses in the intervention group. This suggests that, given the positive impact of group-based positive psychology training on nurses' well-being observed in this study, greater attention should be paid to the role of nursing staff and their empowerment through positive psychology strategies in healthcare training centers.

To effectively utilize educational systems in healthcare and training centers and leverage the benefits of positive thinking for delivering optimal care and achieving competitive advantages in nursing, it is essential to establish the necessary infrastructure for conducting such training sessions with positive psychology content. Nursing managers and planners should recognize the crucial role of nurses in providing care and prioritize psychological management and nurse empowerment by preparing the required structures to support this goal. Such infrastructure includes providing accessible educational content, forming focused discussion and group training sessions centered on positive psychology, and delivering training with the assistance of specialists in this field.

Declarations

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Artificial Intelligence Disclosure
The authors declare that no artificial intelligence (AI) tools were used in the preparation or writing of this manuscript.

Authors' Contributions
In this study, the authors contributed to the initial conceptualization, study design, data collection, and preparation of the manuscript draft. All the authors have reviewed and approved the final version of the manuscript and have no disagreements regarding its content.

Availability of Data and Materials
The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflict of Interest
The authors declare that there is no conflict of interest regarding the present manuscript.

Consent for Publication
Not applicable.

Ethical Considerations
The present study was reviewed and approved by the Ethics Committee of the university under the code of Ethics IR.TUMS. FNM.REC.1399.131 All research procedures were conducted in accordance with the relevant ethical guidelines and protocols.

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