

The effect of a positive thinking program on psychological well-being of nurses working in COVID-19 wards

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Abstract

Introduction: Nursing care for patients with COVID-19 is associated with various stressors that can affect the psychological state. This study aimed to examine the effect of a positive thinking program on psychological well-being of nurses caring for COVID-19 patients.

Material and methods: Seventy-four nurses were assigned randomly to an intervention and a control group. The intervention group members underwent a positive thinking program in eight sessions using WhatsApp. Data were analyzed using SPSS 21.

Results: The findings showed significant differences between the intervention and control group immediately and two months after the intervention, in their psychological well-being levels. The repeated measures ANOVA regarding the impact of time within the intervention group showed a significant increase in psychological well-being scores from baseline to two months after the intervention ($p = 0.002$).

Conclusions: The findings provide preliminary evidence supporting use of positive thinking for increasing psychological well-being in nurses caring for COVID-19 patients.

Key words: positive thinking skills, psychological well-being, nurse, COVID-19 pandemic.

Streszczenie

Wstęp: Opieka pielęgniarska nad pacjentem z COVID-19 wiąże się z różnymi czynnikami stresogennymi, które mogą wpływać na stan psychiczny. Celem pracy było zbadanie wpływu stosowania programu pozytywnego myślenia na samopoczucie psychiczne pielęgniarek opiekujących się chorymi na COVID (19 pacjentów).

Materiał i metody: Siedemdziesiąt cztery pielęgniarki zostały losowo przydzielone do grupy interwencyjnej i kontrolnej. W grupie interwencyjnej zastosowano program pozytywnego myślenia w 8 sesjach za pośrednictwem WhatsApp. Dane analizowano przy użyciu SPSS 21.

Wyniki: Wykazano istotne różnice w poziomie samopoczucia psychicznego między grupą interwencyjną a grupą kontrolną bezpośrednio i dwa miesiące po interwencji. Powtórzone pomiary ANOVA dotyczące wpływu czasu w grupie interwencyjnej wykazały znaczną poprawę wyników w zakresie dobrostanu psychicznego w porównaniu z wartościami wyjściowymi do dwóch miesięcy po interwencji ($p = 0,002$).

Wnioski: Badanie dostarcza wstępnych dowodów na słuszność stosowania programu pozytywnego myślenia w celu poprawy samopoczucia psychicznego pielęgniarek opiekujących się pacjentami z COVID-19.

Słowa kluczowe: umiejętności pozytywnego myślenia, dobre samopoczucie psychiczne, pielęgniarka, pandemia COVID-19.

Introduction

Coronavirus disease-2019 (COVID-19) is a pandemic induced by severe acute respiratory syndrome (SARS)-CoV-2 virus (Acter *et al.* 2020). The World Health Organization (WHO) on 19 April 2020 stated that COVID-19 had affected more than 2.2 million individuals worldwide in 210 countries, with numbers dramatically increasing every day (World Health Organization 2020). COVID-19 is posing unprecedented challenges that have had a significant impact on economics, the health system and health practitioners (Restauri and Sheridan 2020). Nurses are always on the front lines of health care crises and facing more challenges from the COVID-19 pandemic (Li *et al.* 2021). During the COVID-19 crisis, nurses are confronting the overwhelming illnesses that stress nursing care capacity, unpredictable changes in their daily life routine, and unrealistic expectations from patients and their families, as well as facing the infectious risk to themselves (Tsay *et al.* 2020).

Recent reports describe psychological distress and increased rates of anxiety and depression among nurses working on the COVID-19 wards (Lorente *et al.* 2021). The psychological impacts experienced by nurses have been attributed to an increased rate of abuse from patients, non-optimal communication of infection control guidelines, high patient mortality, insufficient supplies of personal protective equipment (PPE) and a fear of transmitting the virus to family members (Halcomb *et al.* 2020a, 2020b). Nurses' psychological well-being is always a great concern among nursing personnel (Li *et al.* 2021). Hence, such results indicate that one of the problems of nurses during the COVID-19 epidemic is the decrease in psychological well-being.

Ryff interprets psychological well-being as individuals' struggle to fulfill their potential true abilities (Manie 2008). Psychological well-being included 6 dimensions of autonomy, environmental mastery, personal growth, purpose in life, self-acceptance and positive communications with others (Abbott *et al.* 2010; Ryff and Keyes 1995).

Positive thinking is a new movement among psychologists that emphasizes the need to understand the positive aspects of human experience and the things that make their lives worthwhile (Makaremnia *et al.* 2021). A positive attitude is one that focuses more on positive stimuli and less on negative points, creating a good feeling, establishing valuable relationships with others, making rational decisions, resisting problems,

and solving life's challenges (Lewis *et al.* 2019). The results of a meta-analysis by Bolier *et al.* (2013), which reviewed the results of 41 studies in this field, show that positive interventions promote psychological well-being and reduce depressive signs. One of the positive thinking skills is gratitude, which makes people more happy and hopeful, with greater life satisfaction (Nelson 2020). Lowen (2017) mentioned that positive thinking interventions significantly promote mental, spiritual, and physical well-being because grateful individuals are more empowered than others to form social commitments, use stress adaptation skills, be all-encompassing, and work creatively to solve problems.

Meanwhile, multimedia education as a new educational method with the transfer of concepts and educational materials in an easier, broader and more attractive way with text, sound, image and video is implemented today to transfer concepts (So *et al.* 2019). This method is widely used to overcome the limitations of traditional training methods, including the current situation of COVID-19. Therefore, due to the importance of the nursing profession and nurses' mental health in the COVID-19 epidemic, this research was conducted with the aim of studying the effect of positive thinking on nurses' psychological well-being using multimedia.

Material and methods

This research is a quasi-experimental study which was performed from July to November 2022 in educational hospitals affiliated to Jahrom University of Medical Science. Inclusion criteria were nurses working in the care wards of patients with COVID-19, a lack of any psychological problems and willingness to participate in the research. The exclusion criteria were incomplete questionnaire and incomplete participation in training sessions.

In this research, 80 nurses were selected based on the inclusion criteria using a census method and then randomly assigned to control ($n = 40$) and intervention groups ($n = 40$). There were 5 nurses excluded from the control group. One nurse did not participate in the training program in the intervention group; finally, 39 nurses remained in the intervention group and 35 individuals remained in the control group (Fig. 1). The census of nurses was such that in this research, all qualified nurses in the COVID-19 wards were included in the study.

The data were gathered using two scales consisting of demographic and psychological

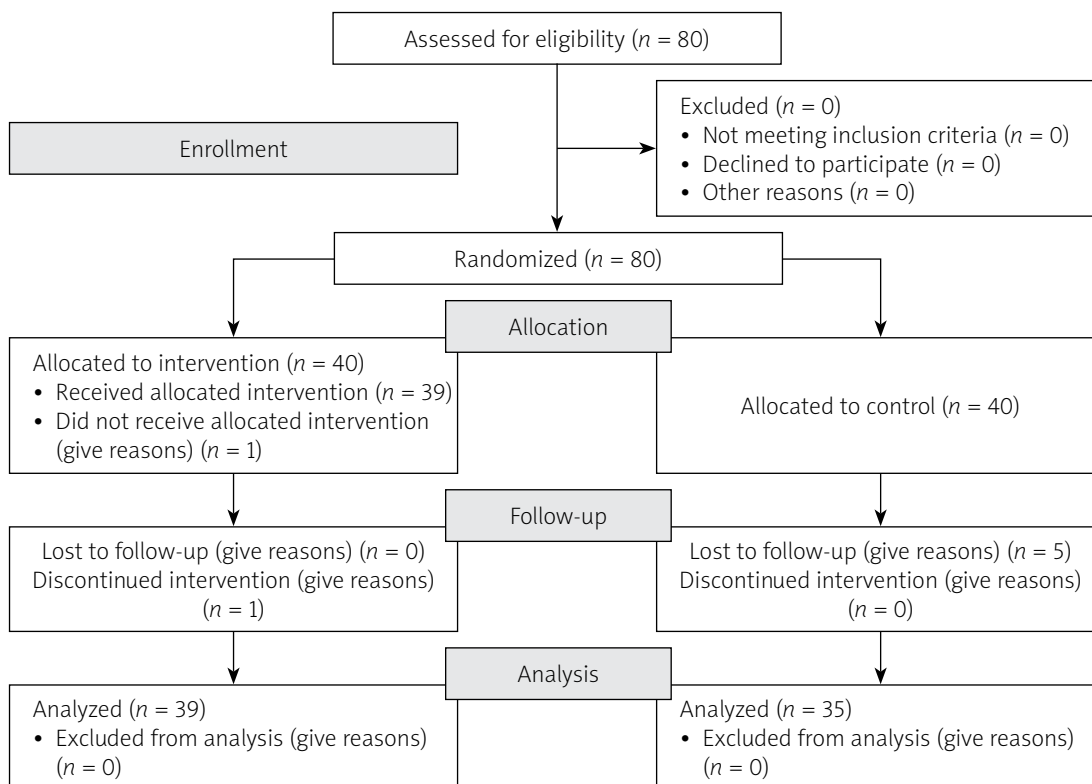


Fig. 1. CONSORT flow diagram of the study

well-being. Ryff's Psychological Well-Being Scale (RPWBS) was used to evaluate the psychological well-being before, immediately after and two months after intervention in both groups. The short form version of the RPWBS was designed by Ryff in 1989 and revised in 2002 (Ryff and Keyes 1995; Ryff 1989). It comprised 18 elements, divided into 6 dimensions: self-acceptance, purposeful life, positive relationship, personality, autonomy, and environmental status. Contributors were required to evaluate entries on a 6-point scale (1 – *strongly disagree* to 6 – *strongly agree*). The sum of the scores of six dimensions is calculated as the overall score of psychological well-being. Out of the total questions, 10 questions are scored directly and 8 questions are scored in reverse. The higher the value, the better is the subject's psychological well-being. Correlation of the short version of the RPWBS with the main scale from 0.7 to 0.89 was reported. The validity of the scale was confirmed in Iran by Bayani *et al.* (2008), with Cronbach's α being 0.88. In the present study, Cronbach's α of the scale was 0.76.

In the intervention group, training and practice in the positive thinking program were performed through multimedia application (WhatsApp) in eight two-hour sessions held twice per week. Educational materials were based on the

positive psychotherapy published by Seligman in his books (Seligman 2007, 2012). Sessions were conducted by one of the researchers and a psychologist. Table 1 presents the general contents discussed in each session. The educational approach included educational video clips and audio files according to the contents of each session. Nurses were assigned practice at the end of each session, which they did individually at home; previous assignments were discussed at the beginning of each session.

Data analysis

The data were analyzed by SPSS 21 using descriptive and inferential statistics at the significance level of $p < 0.05$. The Shapiro-Wilk test was conducted to determine the data distribution. Other tests used included the chi-square test, independent *t*-test, repeated measures ANOVA, and LSD post hoc test. The sphericity assumption was checked using Mauchly's test of sphericity, so that this assumption was maintained in the present study to perform the desired test.

Ethical approval

This research was approved by the ethics committee of Jahrom University of Medical Sciences

Table 1. Positive thinking program

Session	Educational contents
1	Explanation of procedures and reasons for our specific selections, introduction to the concept of positive thinking, group introductions and a review of rules
2	Factors affecting health, familiarity with changeable and unchangeable elements in life
3	Steps to accepting the unchangeable conditions of life, ways to deal with unchangeable conditions in life
4	Ways to overcome depression, specification of values and goals in life
5	Assessment of satisfaction with life and the ability to live happily, being positive by challenging negative thoughts, use of productive language and reconsideration in beliefs
6	Anger management
7	Connecting with the present time through mindfulness meditation
8	Experiencing the present time through mindfulness and a recapitulation of contents presented during the course

(Ethics Number: IR.JUMS.REC.1400.051). All nurses signed an informed consent form. The objectives and method of the research were explained to them and they were then given sufficient assurance regarding the confidentiality of the information.

Results

According to the results of Table 2, the distribution of demographic variables in both groups was homogeneous and did not show any significant between-group difference ($p > 0.05$).

The findings of the Shapiro-Wilk test showed that before, immediately and two months after the intervention, the variables of psychological well-being and its dimensions had normal distributions in both groups ($p > 0.05$).

Before the intervention, no significant difference was observed between the two groups in mean total scores of psychological well-being and the subscales of the scale ($p > 0.05$) (Table 3).

The mean total scores of psychological well-being and its dimensions did show a significant difference between the two groups immediately after the intervention ($p < 0.05$). Also, two

months after the intervention, a significant difference was observed in the mean total scores of psychological well-being and its dimensions between the two groups, while the intervention group showed higher scores ($p < 0.001$). The results of intragroup repeated measures ANOVA showed that the mean total scores of psychological well-being and its dimensions increased significantly over time in the intervention group ($p < 0.001$) (Table 3).

Assessment of the LSD test showed that this significant difference was related to the mean scores (1) before and two months after the intervention, and (2) immediately after and two months after the intervention ($p < 0.05$).

Discussion

The results of the study revealed that the positive thinking program promoted psychological well-being in nurses. The results suggest that such programs help enhance psychological well-being and its components over time in nurses, especially in the time of COVID-19.

The results of the current study were in line with the findings of the studies conducted by

Table 2. Frequency distribution of demographic variables in the study groups

Variable		Group		P-value
		Intervention (n = 39) n (%) or mean \pm SD	Control (n = 35) n (%) or mean \pm SD	
Gender	Male	5 (12.8)	5 (14.3)	0.52 ^a
	Female	34 (87.2)	30 (85.7)	
Marriage	Single	10 (25.6)	7 (20)	0.29 ^a
	Married	29 (74.4)	28 (80)	
Educational status	Bachelor of Nursing	35 (89.8)	31 (88.6)	0.70 ^a
	Master of Nursing	4 (10.3)	4 (11.4)	
Age (years)		37.05 \pm 5.67	35.23 \pm 8.38	0.27 ^b
Work experience		3.33 \pm 1.10	3.34 \pm 1.71	0.97 ^b

^a Chi-square, ^b Independent samples test

Table 3. Comparison of mean total scores of psychological well-being and its subscales before the intervention, immediately after, and two months after the intervention in the two groups

Variable	Group	Time, mean \pm SD			P-value
		Before intervention	Immediately after intervention	Two months after intervention	
Total psychological well-being	Intervention	49.64 \pm 12.81	60.48 \pm 7.02	66.12 \pm 5.68	0.002
	Control	50.34 \pm 8.18	51.45 \pm 14.02	49.65 \pm 11.10	0.32
	P-value	0.78	0.001	0.0001	
Autonomy	Intervention	8.94 \pm 3.78	9.53 \pm 2.43	10.92 \pm 1.62	0.0001
	Control	9.22 \pm 3.43	8.08 \pm 4.17	7.75 \pm 3.25	0.16
	P-value	0.74	0.04	0.0001	
Environmental mastery	Intervention	8.79 \pm 3.03	10.30 \pm 2.87	11.98 \pm 2.11	0.001
	Control	8.08 \pm 2.90	8.74 \pm 3.79	9.12 \pm 3.89	0.63
	P-value	0.30	0.04	0.02	
Personal growth	Intervention	8.87 \pm 3.10	10.00 \pm 2.41	11.15 \pm 1.13	0.016
	Control	8.97 \pm 3.75	8.42 \pm 3.60	8.22 \pm 3.44	0.12
	P-value	0.90	0.029	0.0001	
Positive relation with others	Intervention	8.43 \pm 2.62	10.46 \pm 2.23	10.66 \pm 1.86	0.02
	Control	9.14 \pm 2.77	7.77 \pm 3.04	6.05 \pm 2.15	0.18
	P-value	0.26	0.0001	0.0001	
Purpose in life	Intervention	7.64 \pm 3.58	10.00 \pm 2.77	11.87 \pm 1.54	0.02
	Control	8.85 \pm 2.95	8.67 \pm 2.24	9.05 \pm 3.07	0.18
	P-value	0.11	0.0001	0.002	
Self-acceptance	Intervention	9.33 \pm 3.62	10.17 \pm 2.34	11.80 \pm 1.67	0.01
	Control	8.77 \pm 2.94	8.22 \pm 3.26	8.82 \pm 3.00	0.30
	P-value	0.47	0.004	0.0001	

Bolier *et al.* (2013), Meyers *et al.* (2013) and Shaghaghi *et al.* (2019) on the effectiveness of positive-thinking programs in promoting the psychological well-being of people. Also, one meta-analysis showed the positive effect of positive psychotherapy interventions on improved mental health and psychological well-being, as well as reduced signs of depression (Carolan *et al.* 2017). The positive thinking interventions in the present research emphasized the nurses' positive perspective toward themselves and others. In addition, emphasis was placed on specification of values and goals and practice of mindfulness meditation with the aim of increasing attention on the present time. It seems that these emphases have been able to stimulate nurses to plan for the future and improve their levels of well-being.

In line with the present study, the results of Lin's study (2017) indicated that positive thinking made a significant unique contribution to psychological well-being, self-esteem, and depression (Lin 2017). Positive thinking itself represents a tendency to notice and appreciate the positive in life (i.e., cherishing blessings,

appreciating hardship, cherishing the moment, and thanking God) (Lin and Yeh 2011). Correlation analysis by Bilong *et al.* (2021) showed a positive relationship between positive thinking and psychological well-being and happiness. This study supports the previous research's conclusion that positive thinking is a positive way to enhance healthy psychological well-being and happiness in life. Also, according to Loi and Ng (2021), fostering a grateful mindset could enhance well-being. Positive thinking influences multiple positive changes in the emotional state, hence boosting the levels of psychological well-being of individuals (Măirean *et al.* 2019). Also, positive thinking contributes to psychological well-being by increasing the retrieval of positive memories or experiences of the persons (Sheldon *et al.* 2010). Hence, grateful individuals benefit from a pleasant memory of a positive event in their lives. Likewise, positive thinking creates positive emotions like joy, contentment, love, and satisfaction, and decreases negative emotions such as sadness, stress, and anxiety (Przepiorka and Sobol-Kwapinska 2021). Therefore, individuals pay more attention to

positive emotions than the negative ones when they feel more grateful, therefore generating well-being.

One of the limitations of the study is that the participants were selected using a census method. However, future research could be conducted on more samples and using a random sampling method to be able to extend the results. Another limitation of the study was using only one method (questionnaire) to measure the variables. Therefore, to obtain more generalizable results, one suggestion is to carry out similar research in a wider geographical field with a qualitative method.

Conclusions

This study indicated that a positive thinking program could increase the psychological well-being among nurses in the time of the COVID-19 pandemic. In addition, nurses can utilize positive thinking practice and positive thinking as a coping mechanism for their psychological well-being. Positive thinking practices and positive thinking can help nurses perceive things positively, especially when dealing with stressful environments or experiences like COVID-19.

Availability of data and material

The datasets analyzed during the current study are not publicly available due to ethical and privacy reasons.

Consent to participate

Informed consent was obtained from all individual participants included in the study.

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Disclosure

The authors declare no conflict of interest.

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