



Effectiveness of Mindfulness Skills on Self-Efficacy and Suicidal Ideation among First-Year Nursing Students with Obsessive-Compulsive Symptoms during COVID-19 Pandemic

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ABSTRACT

Background: Obsessive-compulsive disorder (OCD) is a widespread mental illness that affects millions of people worldwide. It's onset and peak are during the late teens, making university students a priority target. Nursing students are at greater risk for developing OCD while COVID-19 is expected to more exaggerate symptoms, mainly with extra hygiene and cleanliness practices. **Aim:** Evaluate the effect of mindfulness skills on self-efficacy and suicidal ideation among first-year nursing students with obsessive-compulsive symptoms during the COVID-19 pandemic. **Methods:** A quasi-experimental design (one group pre/post-test was used to achieve the aim of the study. The study was conducted at Faculty of Nursing at Menoufia University, which is affiliated to the Ministry of Higher Education in Egypt. A purposive sample of 78 nursing students with obsessive-compulsive symptoms was included. Four tools were used: 1) The Arabic Obsessive-Compulsive Scale, 2) Suicidal Ideation Scale, 3) Self-Efficacy scale, 4) Mindfulness scale, in addition to demographic characteristics. **Results:** Post-implementation of mindfulness skills, there was a highly statistically significant improvement in self-efficacy and mindfulness skills among studied students ($P < 0.001$). While there was a highly statistically significant reduction in obsessive-compulsive symptoms and suicidal ideation post-implementation of the mindfulness skills compared to pre-implementation ($P = 0.000$). **Conclusion:** The mindfulness skills had a positive effect on improving self-efficacy and decreasing suicidal ideation and obsessive-compulsive symptoms among first-year nursing students during the COVID-19 pandemic. Further studies were needed at all nursing faculties for early identification of students with obsessive-compulsive symptoms and to assist them to overcome their difficulties using mindfulness skills.

Keywords: Mindfulness skills, Self-efficacy, Suicidal ideation, Obsessive-compulsive symptoms

Introduction

The rapid spread of the coronavirus COVID-19 pandemic has resulted in a huge rise in deaths, but it has also shown a major propensity to negatively damage mental health, particularly among the young

(Robinson,2020). It's critical to pay attention to specific psychological problems that may be brought on or aggravated by calamity. Perhaps no group of patients with mental illness is more immediately affected by the

COVID-19 epidemic than those who suffer from obsessive-compulsive disorder (Adam, 2020). Obsessive-compulsive disorder (OCD) is a widespread mental illness that affects millions of people worldwide. Its onset and peak are during the late teens, making university students a priority target. Medical students are more likely to develop OCD, while COVID-19 is expected to exaggerate symptoms, primarily through increased hygiene and cleanliness practices (Taher et al, 2021). OCD are recurrent and unwelcome thoughts, ideas, and desires that generate worry (obsessions), as well as repetitive activities intended to control the anxiety caused by obsessions (compulsions). OCD is characterized by a malfunction in the brain's communication system, which creates issues with information processing (Morgado,2019).

OCD usually appears in adolescence and late teens, with a typical onset around age 19–20 years. As a result, high school and university students are excellent targets for OCD and OCD symptom screening. Moreover, research has revealed that university students have double the risk of OCD as the general population, and this age group is more vulnerable to other mental risks, such as substance abuse and suicide attempts, which are characterized as OCD comorbidities (Torres et al., 2017). Due to the stressful nature of medical school as part of the heavy curriculum, less free time, and the fact that medical students are educated, trained, and pushed to be more accurate, perfect, and obsessive a little bit more, undergraduate medical students are at an elevated risk for OCD. On the other hand, OCD has been shown to have a negative impact on academic achievement, overall well-being, social engagement, and suicidal ideation. Issues that, if not evaluated and handled effectively, can have a significant influence on one's life (El-Gilany et al., 2017).

The COVID-19 pandemic is expected to have a negative impact on OCD patients and medical students, first as a general stressor on health and communities, secondly by the closure of medical schools and the shift toward online learning, and finally by increased efforts on hand washing and general hygiene as an essential step in COVID-19 prevention, which may trigger the obsession with contamination and compulsive hand washing, which are reported as the most common symptoms of OCD (Chakraborty & Karmakar, 2020; Tanir et al., 2020; Banerjee, 2020). The COVID-19 pandemic may stimulate and reinforce obsessive thoughts and behaviors, and the progression of OCD may be linked to increased anxiety and depression symptoms (Rivera and Carballea, 2020; Nissen et al., 2020; Davide et al., 2020). Patients with OCD had a mild worsening of symptoms during the COVID-19 epidemic (Kumar and Somani, 2020; French and Lyne, 2020). In comparison to healthy people, patients with OCD reported higher degrees of anxiety and depression, as well as a higher likelihood of suicidal thoughts and/or actions and changes in perceived eating and sleeping patterns (Alonso et al., 2021).

Obsessive-compulsive disorder is one of the most distressing mental illnesses (Taher et al., 2021). It has a negative impact on patients' social and familial interactions, self-esteem, and self-efficacy, as well as a higher risk of depression, suicidality, and illicit drug abuse (Ali, 2020). Self-efficacy is described as one's conviction in one's capacity to cope with certain conditions and how attitudes impact people's behaviors and emotions, as well as determining the start of work and the amount of perseverance required to complete it. Self-efficacy refers to a person's belief in what he or she can do rather than a person's perception of himself

or herself and physical characteristics. (Farmer & Tierney, 2017).

Baer (2003) explains that mindfulness skills, which include the capacity to stay in the present moment without making judgments, can help individuals cope with difficult situations. Being attentive entails being aware of both external and internal stimuli and consciously re-directing one's attention to the present moment so that one is not overwhelmed by the violence of one's thoughts, emotions, or feelings (Barcaccia et al., 2019). Mindfulness skills may assist in reducing the onset and duration of psychological distress in a variety of groups, including those affected by the epidemic (Palvolgyi et al., 2020; Conversano et al., 2021).

Significance of the study

Obsessive-compulsive disorder (OCD) affects about 2% of the population at some point in their lives. During COVID-19, patients' susceptibility may be heightened (French and Lyne, 2020). Active suicidal ideation was reported by 5.5% of respondents, while passive suicidal ideation was recorded by 23%. This percentage was significantly higher than the normal population, highlighting the need for careful assessment of suicide risk in patients with OCD during the COVID-19 pandemic (Fineberg et al., 2020). One out of every ten people with OCD tries suicide at some point in their lives; approximately a third have current suicidal ideation, and nearly half have previously experienced suicidal ideas. Several clinical characteristics are linked to greater risk and should be considered while managing clinical risk (Pellegrini et al., 2020).

Nursing students in their first academic year are more susceptible to OCD since all new students begin to face challenges during the COVID-19 epidemic (Elsayed & Ghazi, 2021). Mohamed& El-

Sherbini,(2018),found that academic stress was high and found in high percentage(84%) among first-year nursing students. In addition to practical training in hospitals, all of these stressors can have a detrimental impact on their cognitive processes and can activate stress-related schemata in such students, perhaps leading to an increase in obsessive-compulsive symptoms (Nezgovorova et al., 2021). A key public health strategy is early detection of vulnerable individuals, particularly during times when healthcare resources are limited, such as during the COVID-19 pandemic. However, little research has been done on the influence of COVID-19 on OCD in nursing students. Therefore, the aim of this study was to evaluate the effect of mindfulness skills on self-efficacy and suicidal ideation among first-year nursing students with obsessive-compulsive symptoms during the COVID-19 pandemic.

METHODS

The Aim of study: Evaluate the effect of mindfulness skills on self-efficacy and suicidal ideation among first year nursing students with obsessive compulsive symptoms during the COVID-19 pandemic.

Research hypotheses:

1. Students who apply the mindfulness skills are more likely to have higher self-efficacy and mindfulness scores in the post-test than in the pre-test.
2. Students who apply the mindfulness skills are more likely to have lower obsessive compulsive symptoms and suicidal ideation scores in the post-test than in the pre-test.

Research design: A quasi-experimental one-group pre-test and post-test design has been used to achieve the aim of the study.

Setting: The study was conducted at Faculty of Nursing at Menoufia University, which is affiliated to the Ministry of Higher Education in Egypt.

Subjects: A purposive sample of 78 nursing students was gathered from the above-mentioned setting, who fit the inclusion criteria: first-year students from both sexes, with obsessive-compulsive symptoms, and free from other psychiatric disorders. The total number of first-year students was 700, and only 300 students submitted the pre-test questionnaires. Of those, 78 students had obsessive-compulsive symptoms, 77 completed the study and one died. Students were surveyed via an online self-administered questionnaire via Google Form, sent to a telegram group of first-year students.

Tools of Data Collection: Four tools were used for data collection.

Tool (1): The Arabic Obsessive-Compulsive Scale (AOCS): It was an Egyptian standardized scale developed by Abd-Elkhalek (1992). There were 32 yes/no statements with one point for yes and zero for no, as well as five negative statements (10, 22, 26, 28, and 31). It included six factors; general obsessive thoughts (5,7,8,9,10,14,16,18,20,23,25); orderliness and meticulousness (15,17,19,13,21); like versus obsession (26,28,30,31); acquisition (12,27,29,32); checking and repetition (2,4,6,11); and slowness and compulsion (1,3,22,24). Total scores can range from 0 to 32, with higher scores indicating higher obsession and compulsion. The scoring system; less than 10 indicated very low OCS, mild level from 11 – 15, moderate level from 16-21 and high level from 22-32(Ibrahim & Al Fazari, 2015). The scale has a high degree of face validity. The test-retest reliability was 0.85. The criterion-related validity was 0.71 and 0.69 for males and females, respectively (Abd-Elkhalek, 1998).

Tool (2): Suicidal Ideation Scale: This scale was in the Arabic version and adopted from Aldedan (2015). It had 14 items divided into two different dimensions: odd items for the family dimension (1,3,5,7,9,11,13) and even items for the emotional dimension (1,3,5,7,9,11,13), (2,4,6,8,10,12,14). On a three-point Likert scale, one was for no answer, two was for to some extent, and three was for yes. The total score ranged from 14 to 42; the higher the score, the more suicidal ideation there was. The scale has a high level of face validity, and the scale was reliable; Cronbach's alpha values for the overall scale were 0.694, 0.736 for the family dimension, and 0.742 for the emotional dimension.

Tool (3): Self-Efficacy scale: This scale was in the Arabic version and adopted from Al-Shalawi (2018). It consists of 15 items, with the first 9 being positive statements and the final six being negative. It was a five-point scale, with one representing "strongly disagree" and five representing "strongly agree" . The responses were rated according to mean \pm SD, a higher mean score indicating high self-efficacy. The scale was reliable; Cronbach's alpha coefficient for the overall scale was 0.517.

Tool (4): Mindfulness scale: This scale was in the Arabic version and adopted from Shalawi (2018). There were 15 items in all. It was a five-point scale with one being strongly disagree and five being strongly agree for positive items and the reversed for negative ones (3,5,6,7,10,11,12,15). The responses were rated according to mean \pm SD, a higher mean score indicating high mindfulness. The scale was reliable; Cronbach's alpha coefficients for the overall scale were 0.541.

In addition to the socio-demographic characteristics of the participants, such as their age, gender, residence, educational level, and parental job status.

Ethical consideration: The Faculty of Nursing, Menoufia University, Egypt, provided ethics committee permission on the research topic. The goal of the research, the voluntary nature of participation, declarations of confidentiality, and notes for completing the questionnaire, as well as the link and rapid response code, are all included on the cover page of the questionnaire. Participants who consented to freely participating in the study were directed to finish the questionnaire by pressing the "Continue" button.

Data Collection Procedure:

Official permission was received from Egypt's Menoufia University's Faculty of Nursing. The real research began with a request to the Faculty of Nursing's Students' Affairs Department for a list of names and academic e-mail addresses of registered undergraduate students who were enrolled in the first academic year and second trimester of the academic year 2020–21. A pilot study was conducted to determine the questionnaires' practicality and applicability. It was carried out on ten first-year undergraduate nursing students. The participants of the pilot study were not included in the final analysis. The pilot study revealed that the study tools were clear, understood, and applicable. The researchers created an electronic form that contained all of the research tools. The data was gathered in February 2021 via a Google Form link sent to a telegram group of first-year students. The data was then analyzed to identify students with obsessive-compulsive symptoms. Only 78 students out of 300 had score more than ten on AOCS scale and involved in the study. The researchers created a new telegram group for 78 students, planned a one-hour Microsoft team meeting twice a week, and shared the link with the group (six meetings during March 2021). At the beginning of April, the Google

Form link was posted again to the participants to collect the post-test.

The Description of Mindfulness Training:

The ultimate goal of mindfulness training is to assist students with obsessive-compulsive symptoms in developing mindfulness skills, increasing self-efficacy, and decreasing suicidal thoughts. It was done through a range of educational methods, including discussions, lectures, brainstorming, and modeling. PowerPoint presentations and videos were used as teaching aids. At the end of each session summary, feedback and time were allotted for asking any questions and explaining homework assignments for the next session. Six sessions were included in the mindfulness training. The first session was designed to enhance participants' understanding of obsessive-compulsive disorder (OCD). This session began with an overview of OCD, including its definition, causes, symptoms, types, and effects. The second session was designed to train students how to use coping methods for OCD while also increasing their self-efficacy. Self-monitoring, self-control, thought-stopping strategies, and imagined exposure without response were all covered in this session. The third session aimed to inform the participants about mindfulness. This session covered the definition of mindfulness, its benefits, and several forms of mindfulness for OCD. The fourth and fifth sessions aimed to train the students on mindfulness skills. This session included mindful breathing exercises, progressive muscle relaxation, and mindful meditation. Session six was designed to train students how to focus on the present moment rather than form evaluative judgments on circumstances. This session included body scanning, mindful stopping technique, and mindful activity.

Statistical Analysis:

The data was tabulated and statistically analyzed using the Statistical Package for Social Science (SPSS) version 25. Descriptive statistics were employed (e.g., frequency, percentages, mean, and standard deviation). When comparing means of quantitative variables, the Paired T test (t) was employed, but the analysis of variance (ANOVA) was used when comparing means from more than two categories. To analyze the link between the variables under examination, the correlation coefficient test (r) was used. A significant level value was considered when $P < 0.05$ and a highly significant level value was considered when $P < 0.01$. No statistical significance difference was considered when $P > 0.05$.

RESULTS

Table (1): Revealed that the average age of the studied students was 18.53.502, that 83.1% were female, and that the majority (87%) were from urban areas. 61%, 71,4% of the studied students' fathers and mothers had illiterate/primary and secondary educational levels, respectively. Meanwhile, indicated that the majority (90.9%) of the studied students' fathers worked, while more than two thirds (79.2) of the studied students' mothers did not. Regarding the age of symptom detection, two thirds of the studied students (66.2%) had symptoms from 1-3 years.

Table (2): Demonstrated a highly statistically significant reduction in all obsessive-compulsive factors (general obsessive thoughts, orderliness and meticulousness, a like versus obsession, acquisition, checking and repetition, slowness and compulsion) and suicidal ideation dimensions (family and emotional) following mindfulness skill implementation compared to pre-implementation where ($P < 0.001$).

Figure (1): Showed that post-implementation of mindfulness skills, there was a highly statistically significant improvement in self-efficacy and

mindfulness skills among studied students ($P < 0.001$). While there was a highly statistically significant reduction in obsessive-compulsive symptoms and suicidal ideation post-implementation of the mindfulness skills compared to pre-implementation ($P = 0.000$).

Table (3): There was a statistically significant relationship between age, the student's father's work, age of symptom detection, and both suicidal ideation and obsessive-compulsive symptoms at P values, (0.027, 0.021, 0.028, 0.041, 0.043) respectively. There was a statistically significant relationship between suicidal thoughts, obsessive-compulsive symptoms, and the educational level of the students' parents.

Table (4): There was a statistically significant relationship between age, father's work, age of symptoms detection, and both mindfulness skills and self-efficacy at P values, (0.025, 0.036, 0.035, 0.031, 0.046, 0.029), respectively. Also, there was a highly statistically significant relationship between mindfulness skills, self-efficacy, and the educational level of the students' parents.

Table (5): Revealed that there was a highly statistically significant negative correlation between self-efficacy, mindfulness skills, and suicidal ideation and obsessive-compulsive symptoms before and after mindfulness skills implementation at $P = 0.001$. This means that when students have high self-efficacy and mindfulness skills, their obsessive-compulsive symptoms and suicidal ideation will be decreased. While there was a highly statistically significant positive correlation between suicidal ideation and obsessive-compulsive symptoms before and after mindfulness skills implementation, at P value = 0.000. Also, there was a highly statistically significant positive correlation between self-efficacy and mindfulness skills.

Table 1. Distribution of The Studied Students' Socio-demographic Characteristics (n = 77).

Socio-demographic characteristics	N	%
Age (Year)		
18	36	46.8
19	41	53.2
Mean \pm SD	18.53 \pm .502	
Sex		
Male	13	16.9
Female	64	83.1
Residence		
Rural	10	13
Urban	67	87
Mothers' educational level		
Illiterate	6	7.8
Read and write	8	10.4
Secondary education	41	53.2
High education	22	28.6
Fathers' educational level		
Illiterate	4	5.2
Read and write	8	10.4
Secondary education	35	45.5
High education	30	39
Mother's work		
Work	16	20.8
Not work	61	79.2
Father's work		
Work	70	90.9
Not work	7	9.1
Age of symptoms detection		
1 year	30	39
2 years	12	15.6
3 years	9	11.7
Don't remember	26	33.8

Table 2. Distribution of Obsessive-Compulsive Factors and Suicidal Ideation among Studied Students' Pre-and Post-Mindfulness Skills (n = 77).

Obsessive compulsive factors	Pre- mindfulness skills Mean \pm SD	Post- mindfulness skills Mean \pm SD	t	P- value
General obsessive thought	7.181 \pm 2.32	4.769 \pm .926	8.676	.000**
Orderliness and meticulousness	2.792 \pm 1.45	1.332 \pm .328	7.948	.000**
A like versus obsession	2.233 \pm 1.01	1.565 \pm 0.136	7.112	.000**
Acquisition	1.870 \pm 1.06	0.914 \pm 0.157	6.589	.000**
Checking and repetition	1.597 \pm 1.07	0.750 \pm .101	6.989	.000**
Slowness and compulsion	1.039 \pm 1.01	0.766 \pm 0.141	4.523	.000**
Total obsessive compulsive	16.71 \pm 3.71	10.096 \pm 2.51	13.739	.000**
Suicidal ideation dimensions				
Family dimension	10.60 \pm 4.20	6.910 \pm 3.96	8.717	.000**
Emotional dimension	12.51 \pm 3.82	7.530 \pm 3.31	11.085	.000**
Total Suicidal ideation dimensions	23.11 \pm 6.19	14.44 \pm 4.96	15.029	.000**

t= t.test. **highly significant at P < 0.01.

Figure 1. Comparison of Obsessive-Compulsive, Self-Efficacy, Mindfulness Skills, and Suicidal Ideation among Studied Students' Pre-and Post-Mindfulness Skills (n = 77).

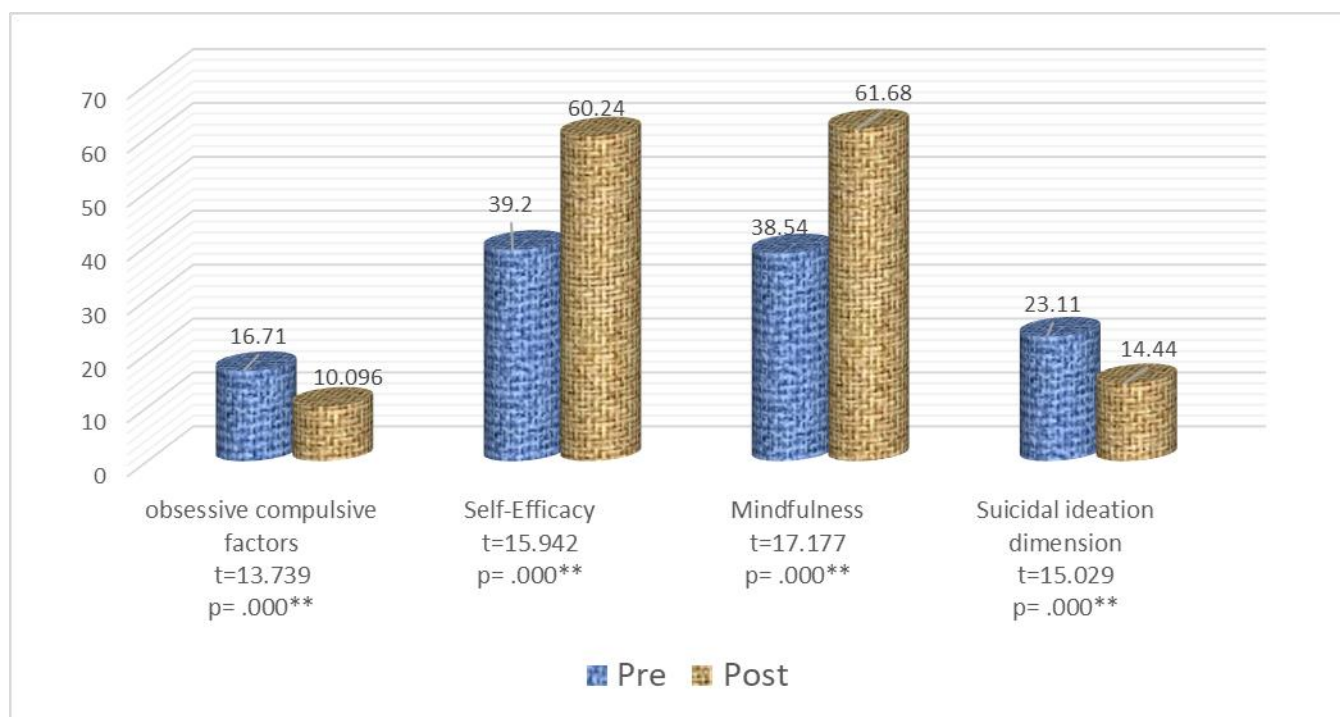


Table 3. Relationship between Students’ Socio-Demographic Characteristics and Suicidal Ideation and Obsessive-Compulsive Post-Mindfulness Skills (n = 77).

Students’ socio-demographic characteristics		Mean of Suicidal ideation post - mindfulness skills	t / f	P-Value	Mean of obsessive compulsive post - mindfulness skills	t / f	P-Value
Age (years)	18	16.27 ± 5.11	t=4.857	0.027*	12.57 ± 2.61	t=5.214	0.021*
	19	12.58 ± 4.89			7.610 ± 2.37		
Sex	Male	16.61 ± 5.63	t=1.753	0.084	11.14 ± 2.55	t=0.919	0.350
	Female	14.00 ± 4.75			9.04 ± 2.47		
Residence	Rural	15.30 ± 7.48	t=0.583	0.562	10.66 ± 2.44	t=0.514	0.411
	Urban	14.31 ± 4.54			9.520 ± 2.57		
Mothers’ educational level	Illiterate	18.66 ± 8.57	f=6.092	.005**	14.01 ± 2.91	f=7.524	.000**
	Read and write	13.62 ± 3.42			10.41 ± 2.60		
	Secondary education	13.95 ± 4.77			9.441 ± 2.34		
	High education	12.18 ± 4.54			6.524 ± 2.22		
Fathers’ educational level	Illiterate	19.75 ± 10.8	f=5.686	.003**	14.21 ± 2.88	f=6.047	.000**
	Read and write	15.00 ± 3.38			10.00 ± 2.63		
	Secondary education	13.28 ± 5.23			9.330 ± 2.40		
	High education	12.13 ± 3.67			6.817 ± 2.25		
Mother’s work	Work	14.00 ± 4.28	t=0.397	0.692	9.17 ± 2.69	t=0.454	0.693
	Not work	14.55 ± 5.15			11.01 ± 2.41		
Father’s work	Work	10.54 ± 5.12	t=2.563	0.027*	7.75 ± 2.31	t=2.965	0.028*
	Not work	17.42 ± 3.15			12.43 ± 2.70		
Age of symptoms detection	1 year	15.13 ± 4.76	f=1.417	0.041*	12.21 ± 2.91	f=4.014	0.043*
	2 years	13.41 ± 3.70			10.30 ± 2.60		
	3 years	14.66 ± 6.51			9.714 ± 2.34		
	Don’t remember	14.03 ± 5.28			8.137 ± 2.22		

Table 4. Relationship between Students’ Socio-Demographic Characteristics and Mindfulness Skills and Self-Efficacy Post-Mindfulness Skills (n = 77).

Students' socio-demographic characteristics		Mean of mindfulness skills post - mindfulness skills	t / f	P-Value	Mean of self-efficacy post - mindfulness skills	t / f	P-Value
Age (years)	18	55.50 ± 7.59	t=4.400	0.025*	56.75 ± 6.03	t=3.955	0.036*
	19	67.97± 5.93			63.80 ± 6.79		
Sex	Male	62.23± 6.59	t=0.307	0.759	59.92±6.46	t=0.198	0.844
	Female	61.57± 7.04			60.31±6.46		
Residence	Rural	61.50±8.18	t=0.091	0.927	61.80±4.44	t=0.818	0.416
	Urban	61.71±6.80			60.01± 6.66		
Mothers' educational level	Illiterate	55.66±6.59	f=5.720	.007**	54.16±6.27	f=7.986	.001**
	Read and write	60.75±3.80			57.50±5.55		
	Secondary education	66.53±6.63			63.78±6.22		
	High education	70.90±7.59			71.09±6.67		
Fathers' educational level	Illiterate	64.50±8.02	f=4.258	.007**	54.75±7.63	f=7.021	.000**
	Read and write	67.37±3.88			58.25±5.57		
	Secondary education	59.71±6.29			64.45±6.27		
	High education	62.10±7.37			69.76±6.48		
Mother's work	Work	58.62±8.55	t=-.2025	0.046*	58.93±7.75	t=0.915	0.363
	Not work	62.49±6.28			60.59±6.05		
Father's work	Work	66.35±7.09	t=3.332	0.035*	65.21±6.10	t=2.114	0.031*
	Not work	60.00±4.08			55.57±9.65		
Age of symptoms detection	1 year	61.53±6.59	f=2.317	0.046*	61.33±6.82	f=1.948	.029*
	2 years	61.66±6.60			59.50±5.64		
	3 years	59.88±7.54			55.77±6.96		
	Don't remember	62.50±7.52			60.88±5.70		

Table 5. Correlation between Students' Obsessive-Compulsive, Suicidal Ideation, Self-Efficacy, and Mindfulness Skills Post-Mindfulness Skills

Variables		Obsessive-compulsive		Suicidal ideation		Self-efficacy	
		Pre	Post	Pre	Post	Pre	Post
Suicidal ideation	r	.469	.579				
	p	.000**	.000**				
Self-efficacy	r	-.182	-.461	-.009	-.455		
	p	.047*	.001**	.940	.001**		
Mindfulness skills	r	-.165	-.583	-.042	-.585	.548	.615
	p	.049*	.000**	.719	.000**	.000**	.000**

DISCUSSION

The current study's findings revealed that most participants in the study were female (83.1%) and from urban areas (87.5%). This might be due to the fact that the majority of nursing students are female, as well as the high population density in cities, where many cases of infection aggravated obsessive-compulsive symptoms during the COVID-19 Pandemic. This

finding was in line with Yogeswaran, & El Morr, (2021). They indicated that the number of females in various nursing colleges throughout the world was greater than the number of males. Furthermore, according to Kontoangelos et al.,(2020) residing in urban areas causes more obsessive-compulsive symptoms than living in rural areas. This is owing to the presence of parents and family support in rural areas, both of which are recognized as stress-coping mechanisms. Similarly, (Elsayed & Ghazi, 2021), found that the majority of first-year nursing students with OCD were from urban areas. Emma Schmelefske

et al, (2020) stated that half of the analyzed students with OCD came from urban areas, while the other half came from rural areas.

In terms of parental educational levels, the current findings indicated that 61.4% and 71.4% of the investigated students' fathers and mothers had illiterate/primary and secondary educational levels, respectively. This might be owing to the parents' lack of health-related information about mental disorders and how to deal with obsessive-compulsive symptoms in their children as a result of their low educational level. This result was in line with Ercan et al, (2010), who discovered that 75% of the adolescents' parents lacked a high school diploma.

Regarding mother's and father's work, this study indicated that the majority (90.9%) of the studied student's fathers worked, while more than two thirds (79.2) of the studied student's mothers did not. Because non-working mothers have more time to pay attention to their children's every action and may use punishment to regulate their undesired behaviors, this may easily induce anxiety in children and drive them to pay too much attention to the details of life, which can lead to greater levels of obsessive-compulsive symptoms in children with non-working mothers. Wilcox et al, (2008) confirmed this finding and revealed that mother overprotection was linked to offspring OCD in sporadic families. However, Taher, et al., (2021), found that 76.5 % of the studied students' fathers worked, while two-thirds (86.3 %) of the studied students' mothers were housewives or retired.

Concerning the impact of mindfulness skills on obsessive compulsive factors, the current study found a highly statistically significant reduction in all obsessive compulsive factors (general obsessive thoughts, orderliness and meticulousness, like versus obsession, acquisition, checking and repetition, slowness, and

compulsion) after mindfulness skills implementation compared to pre-implementation. This might be because the participants were taught mindfulness methods such as mindful meditation, mindfulness stop technique, mindful breathing exercises, and the NOW acronym for mindful moments, which helped them become more aware of their thoughts and focus on the present moment. They also apply coping methods including self-monitoring, self-control, thought stopping techniques, and imagined exposure without response, which will help them develop more self-efficacy and enhance their capacity to manage compulsive thoughts, resulting in fewer obsessive-compulsive symptoms. All of Asli Azad, et al, 2019), Serra-Blasco et al,(2019), and Haleemunnissa et al, (2021), reported similar findings. However, Strauss et al,(2018) observed that mindfulness-based exposure did not result in clinically significant reductions in OCD symptom severity at post-intervention when compared to the guidelines that promote exposure and response avoidance.

In relation to the impact of mindfulness skills on suicidal ideation, the current study found that after mindfulness skills were implemented, there was a highly statistically significant reduction in suicidal ideation dimensions (family and emotional) compared to before ($P < 0.001$). This might be because mindfulness training approaches assist patients in shifting their emphasis from a broad negative emotional and cognitive style to a more targeted and present-focused one. It allows individuals to strengthen their tolerance for ambiguity, reduce stress and anxiety caused by excessive thinking, and thereby lessen thoughts of suicide in students. This finding was in line with Wu & Yaacob, (2019), who found a highly statistically significant reduction in suicidal ideation in the obsessive group after mindfulness skills training

compared to pre-implementation ($P = 0.005$). Also, Lu et al, (2019) discovered that after eight weeks of mindfulness training, the mindfulness training group exhibited a decrease in suicidal ideation.

Regarding the effect of the mindfulness skills on self-efficacy and mindfulness skills, the current research showed that there was a highly statistically significant improvement in the self-efficacy and mindfulness skills among studied students' post-implementation of the mindfulness skills compared to pre- implementation where ($P < 0.001$). The interpretation that could be given for the obtained results, the content of the training program involved proper ways of performing mindful meditation, mindfulness stop technique, along with a state of self-control and thought stopping techniques. It helps participants to become aware of their capabilities and relatively free of future anxieties and apprehensions. This finding was in line with those of Katan et al, (2018) , Haji-Adinehet al, (2019) and Micha et al, (2021), , who discovered that mindfulness training improved self-efficacy and mindfulness skills in OCD patients, with a highly statistically significant improvement in self-efficacy and mindfulness skills following implementation of the mindfulness skills ($P=0.001$).

The current study found a highly statistically significant negative correlation between self-efficacy and obsessive-compulsive symptoms before and after the implementation of mindfulness skills ($P = 0.001$). This suggests that students with high self-efficacy exhibit fewer obsessive-compulsive symptoms. This could be because patients with obsessive compulsive disorder are less confident in their abilities, affecting their ability to cope effectively with stressors from obsessive compulsive symptoms, and they are unable to remain calm when confronted with compulsion difficulties because they are unable to rely on their

coping abilities. This finding was consistent with the findings of Shafii et al, (2022), who found a significant negative correlation between self-efficacy and obsessive-compulsive symptoms ($P < 0.01$) Furthermore, Ali, (2020), showed that a person with high self-efficacy plays an active and important role in arranging the relationship between thoughts and events in the outer world, which reduces the symptoms of obsessive-compulsive disorder.

The current study found that there was a highly statistically significant positive correlation between suicidal ideation and obsessive compulsive symptoms. This could be because people with obsessive-compulsive symptoms have a pathological belief in their ability to control negative repetitive thoughts, which causes distress, or because they are unable to tolerate unpleasant thoughts, negative mental images, or unwelcome emotions, which cause them to lose hope and contemplate or even attempt suicide. This point of view was supported by Krebs et al, (2020), they indicated that suicidality might occur as a functional result of the psychological strain of having OCD. This result was comparable to those of Brakoulias et al, (2017), Bowen et al. (2019), Albert, (2019), and Hellberg, et al. ,(2022), they discovered a relationship between obsessive-compulsive symptoms and suicidal ideation.

Regarding the correlation between mindfulness skills and obsessive-compulsive symptoms, the current result illustrated that there was a highly statistically significant negative correlation between mindfulness skills and obsessive-compulsive symptoms pre and post-implementation of the mindfulness skills. This might be because those who use mindfulness techniques have a greater ability to deal with invasive and disturbing thoughts. By concentrating on moment-to-moment awareness and behavior orientation based

on logical responsibility rather than spontaneous response, mindfulness allows a person to have a fundamentally different connection with internal feelings and external events. By focusing attention and awareness, mindfulness may successfully moderate emotional reactivity. As a result, those who apply mindfulness are less likely to experience negative automatic thoughts and believe that they can overcome them. This result was congruent with Bakes, (2015), Key et al. (2017), and Leeuwerik et al, (2020), they found that there was a negative relationship between mindfulness skills and obsessive-compulsive disorder post implementation of the mindfulness skills.

Additionally, the current study indicated that there was a highly statistically significant positive correlation between mindfulness skills and self-efficacy. This may be due to the application of mindfulness skills, which helped the participants to feel control over their emotional state and behaviors, which contributed to increasing their self-efficacy. This result was identical to the results of Choudhary et al,(2021). Also, Singh (2019) and Tang et al, (2019) revealed a positive correlation between mindfulness and self-efficacy ($r = 0.584$, $P < 0.001$).

The current study's findings revealed a highly statistically significant negative relationship between self-efficacy and suicidal ideation. This may be explained by the fact that adolescents with high self-efficacy are better able to cope with obstacles and stressors, lowering the risk factors for depression and suicidal thoughts. This result was consistent with Wu & Yaacob, (2019), they provided a correlation between self-efficacy and suicidal ideation, implying that adolescents acquire suicidal thoughts as a result of their low self-efficacy. Furthermore, Kobayashi et al, (2015) illustrated that self-efficacy may be used as a tool for detecting people with suicidal ideation and that

strengthening self-efficacy can be a beneficial technique for suicide prevention.

Moreover, the current study revealed that there was a highly statistically significant negative correlation between mindfulness skills and suicidal ideation. This means that when students have high mindfulness skills, suicidal ideation will be decreased. This might be as a result of using the mindfulness stop method, mindful breathing exercises, guided imagery, and training on not making evaluative judgments about events and instead focusing on the present moment. This finding was similar to that of Fang et al, (2019), who discovered that mindfulness was adversely connected to suicide risk. In addition, Anastasiades et al, (2017), found that undergraduate women who endorsed lower levels of attentive awareness had greater rates of suicide thoughts.

According to the findings of the current study, there was a statistically significant relationship between students' age, the age at which obsessive-compulsive symptoms were first detected, and both suicidal ideation and obsessive-compulsive symptoms. This result was analyzed by Krebs, et al, (2021), who found that overall obsessive-compulsive symptoms at age 18 predicted suicidality at age 24, and that this relationship remained significant even after adjusting for suicide attempts at age 18. This finding was similar to that of Brakoulis et al, (2017), who discovered a link between the age of beginning of OCD, comorbid disorders, and suicidality. Also, Storch et al, (2020), found a statistically significant relationship between age and age of symptom detection and both suicidal ideation and obsessive-compulsive disorder at P value (0.903). While, Sehlo et al,(2021), found no significant relationship between age and suicidal thoughts or obsessive-compulsive disorder at P value (0.8).

The current study found a statistically significant relationship between the age of symptom detection and both mindfulness skills and self-efficacy. This result was consistent with the findings of Ali (2020) and Micha et al, (2021), who found a highly statistically significant relationship between age and the age of symptom detection, as well as mindfulness skills and self-efficacy, among patients with obsessive compulsive disorder.

Limitations of this study

The small sample size and absence of the control group limit the generalizability of the results of the current study.

CONCLUSION

The mindfulness skills had a positive effect on improving self-efficacy and decreasing suicidal ideation and obsessive compulsive symptoms among first-year nursing students during the COVID-19 pandemic.

RECOMMENDATIONS

Further studies were needed at all medical and nursing faculties for early identification of students with obsessive-compulsive symptoms and to assist them to overcome their difficulties using mindfulness skills.

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