

How vary the Mindfulness Skills Before and During COVID-19 pandemic among Italian nurses: a retrospective cohort observational study

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Abstract: This study identified and quantified the Mindfulness skills “Before” and “During” the Covid-19 pandemic. Data were in agreement to the current literature: the implementation of techniques aimed at increasing Mindfulness skills in clinical nursing practice has an effective a cost-benefit ratio all to the advantage of health company than professionals.

Keywords: Mindfulness; Nursing Personnel; Pandemic.

Riassunto. Il presente studio ha identificato e quantificato le abilità di Mindfulness “Prima” e “Durante” la pandemia di Covid-19. I dati risultano essere concordi con la letteratura corrente: l’implementazione di tecniche volte ad aumentare le competenze di Mindfulness nella pratica clinica infermieristica ha un effettivo rapporto costi-benefici a tutto vantaggio dell’azienda sanitaria rispetto ai professionisti.

Parole chiave: Mindfulness; Personale Infermieristico; Pandemia.

Resumen. Este estudio identificó y cuantificó las habilidades de Mindfulness “antes” y “durante” la pandemia de Covid-19. Los datos coincidieron con la literatura actual: la implementación de técnicas orientadas a incrementar las habilidades de Mindfulness en la práctica clínica de enfermería tiene una relación costo-beneficio efectiva todo en beneficio de la empresa de salud que de los profesionales.

Palabras llave: Mindfulness; Personal de enfermería; Pandemia.

Introduction

The Covid-19 pandemic has rapidly invaded the world's territory causing a health emergency condition unprecedented in the last century (1). This condition has strongly influenced the lives of all individuals (2), in particular that of health professionals (3), who are entrusted with the direct care of patients affected by SARS-CoV-2 infection.

Unfortunately, the high contagiousness of the virus places further stress on healthcare professionals, in particular nurses assigned to direct care of COVID-19 patients. There are now numerous studies in the literature focused on the psychological state of nurses and on the psychological support interventions to be made to allow nurses to work with a serene and fearless psychological state (4-6).

In this regard, numerous scientific evidences come from the literature that exalt the intervention of Mindfulness as an indispensable support to protect nurses and other health professionals from the pressing psychological condition dictated by the COVID-19 pandemic (7-9).

Particularly, Mindfulness alludes to the recognition of the present instant and agreeing of introspections and emotions without judgment (10). Literature evidences that Mindfulness is correlated with an approach of reception (11). Thus, persons who possess high Mindfulness skills are able to cope better with situations and to incur less in conditions of psychological distress. This is why the literature is full of references on the importance of implementing mindfulness programs, particularly among nurses where it is easy to incorporate the stress and fatigue of daily work and this technique could undoubtedly reduce occupational stress (12).

The purpose of the present study is to identify and quantify the Mindfulness skills "Before" and "During" the Covid-19 pandemic, underling the existence of some differences among data collected. Specifically, this study purposed the following question: are there any differences in the Mindfulness skills assessment between "Before" and "During" the Covid-19 pandemic?

Materials and Methods

Strategy approach

The questionnaire was administered on line through the Google Moduli application and was spread to some on-line nursing group pages from May 2020 to June 2020 in order to interview nurses who were engaged in the first line to care patients suffered from the Covid-19 with the aim to better understand if this particularly health worldwide emergency have influenced the Mindfulness skills among nurses. Particularly nurses were invited to answer relating the period "Before" the pandemic (from November 2019 to January 2020) and then concerning the period "During" the pandemic (from February 2020 to April 2020).

The Questionnaire

An on-line questionnaire was created to study if nursing Mindfulness skills changed during the health emergency due to the Covid-19 pandemic.

In the first part of the questionnaire administered a series of general information was collected, as: gender, age group (divided into four different classes, namely: 20-30 years, 31-40 years, 41-50 years, 51-60 years) and the Region of Italy where nurses work, as: North of Italy, Centre, and South of Italy.

Subsequently, in the second part of the questionnaire, the Kentucky Inventory of Mindfulness Skills (KIMS) was administered to assess four dimensions of the Mindfulness skills, generally focused one's attention in a non-judgmental or accepting the experience occurring in the present moment¹³.

The 39-items of KIMS aimed to assess four Mindfulness skills' dimensions, specifically:

- "Observing": Mindfulness includes observing to different encouragements involving internal and external factors, such as: body perceptions or sounds and smells. For this dimension it includes items number: 1,5,9,13,17,21,25,29,30,37,39.
- "Describing": Mindfulness assessment embraces interviewer detailing or perceived happening by employing words in a non-estimated approach. For this dimension it includes items number: 2,6,10,14,18,22,26,34.
- "Acting with Awareness": Mindfulness includes full

participation in one's activity. Items included for this dimension are: 7,11,15,19,23,27,31,35,38.

- "Accepting (or allowing) without judgment": Mindfulness involves to live the reality without or avoiding prejudice. Items included are: 4,8,12,16,20,24,28,32,36.

For each items a 5-point Likert scale was associated ranging from 1(never or very rarely true) to 5 (almost always or always true). High scores stated for more Mindfulness.

Ethical consideration

Participation was voluntary and no form of personal restitution of the results obtained was involved.

All the information collected were treated confidentially, guaranteeing complete anonymity. The participation to the on-line questionnaire was an implicit consent. All nurses who agreed to participate in the survey returned the questionnaire, while those who disagreed did not return it.

This study was approved with id number 6161 by the Community Review Board (CRB) of General Hospital, Policlinic of Bari, Italy.

Validity and Reliability

In this study it was adopted a homogenous instrument to assess Mindfulness skills levels among Italian nurses, which contained 39 items that well measure skills' levels and its consistency among responses of multiple users was validated from other studies (13).

Data analysis

Collected data were entered in an Excel sheet and statistical processing was performed with the IBM SPSS program version 20.

Socio-demographic information of the Italian nursing population was presented as frequencies and percentages for categorical variables, while differences existing according to the two periods considered, as "Before" and "During" the pandemic were sowed as means \pm standard deviations and differences among them were assessed thanks to the t-test for paired samples. Data obtained <0.05 were considered as statistically significant.

Results

In total, 104 nurses answered the questionnaire. Of these, 65.4% were women and 34.6% were men (Table 1). 44.2% were aged between 20-30, 13.5% were aged between 31-40, 18.3% were aged between 41-50, 24% were aged between 51-60 years. 57.7% of nurses worked in a Region of the Southern of Italy, 26.9% in a Region of the Northern of Italy, 15.4% of nurses worked in a Region of the Central of Italy.

Tables 2-5 show the data collected by administering the KIMS questionnaire, dividing the items already by dimension of the Mindfulness.

Specifically, Table 2 shows the results obtained for the "Observation" dimension, Table 3 illustrates the results concerning the "Describing" area, Table 4 highlights the results obtained by investigating the "Act with Awareness" dimension and, finally, Table 5 shows the results obtained regarding the "Accept without judgment" dimension, all Tables consider both "Before" and "During" periods of the Covid-19 pandemic.

As shown in Table 2, in almost all the items considered there is a variation, either increasing or decreasing, statistically significant, with the exception of items no. 9 ($p=0.511$), no.30 ($p=0.262$), no.33 ($p=0.396$). As regards items no. 5, 13, 17, 21, 37, 39, data show a significant increase of the Mindfulness skills in the period "During" the pandemic ($p<0.001$, $p<0.001$, $p<0.001$, $p<0.001$, $p<0.001$, $p=0.041$, respectively). Instead, a statistically significant decreasing is recorded for items no. 1, 25, 29 ($p <0.001$, $p <0.001$, $p <0.001$, respectively) in the "During" Covid-19 period.

Table 1. Sampling characteristics (n=104).

Variables	Frequencies (n)	Percentages (%)
Sex:		
Female	68	65.4
Male	36	34.6
Age:		
20-30 years	46	44.2
31-40 years	14	13.5
41-50 years	19	18.3
51-60 years	25	24
Region of belonging:		
North of Italy	28	26.9
Centre of Italy	16	15.4
South of Italy	60	57.7

Table 2. “Observe” factors of the Kentucky Inventory of Mindfulness Skills in a Nursing Sample (n=104) “Before” and “During” the COVID-19 pandemic.

Item Number and Content	Before COVID-19	During COVID-19	p value
	Means ±SD	Means ±SD	
1. I notice changes in my body, such as whether my breathing slows down or speeds up.	4.22±0.95	3.16±1.11	<0.001*
5. I pay attention to whether my muscles are tense or relaxed.	2.71±1.13	3.35±1.09	<0.001*
9. When I’m walking, I deliberately notice the sensations of my body moving.	2.67±1.12	2.76±1.06	0.511
13. When I take a shower or a bath, I stay alert to the sensations of water on my body.	2.25±1.08	2.78±0.98	<0.001*
17. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.	2.58±1.01	3.36±1.11	<0.001*
21. I pay attention to sensations, such as the wind in my hair or sun on my face.	3.07±1.05	3.73±1.06	<0.001*
25. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.	3.64±0.86	2.83±1.03	<0.001*
29. I notice the smells and aromas of things.	3.10±0.93	2.58±1.05	<0.001*
30. I intentionally stay aware of my feelings.	3.59±1.04	3.73±1.06	0.262
33. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.	2.58±1.01	2.69±1.14	0.396
37. I pay attention to how my emotions affect my thoughts and behavior.	2.51±1.07	2.87±1.14	0.009*
39. I notice when my moods begin to change.	3.10±0.93	3.36±1.11	0.041*

*p<0.05 is statistically significant.

Table 3 shows the “Describing” factors of the KIMS questionnaire. Particularly, for items no. 2, 6, 14, 18, 34 there is no statistically significant difference (p=0.078, p=0.175, p=0.102, p=0.798, p=0.403, respectively). Only for item no. 10 there is a statistically significant increase in the “During” Covid-19 period (p=0.020). While for items no. 22 and 26 there is a decrease in the value recorded in the period “During” Covid-19 (p<0.001, p<0.001, respectively) for all the two items considered.

Table 4 shows the values of the KIMS as regards the “Act with Awareness” dimension. Only the item no. 11 shows no statistically significant difference between “Before” and “During” Covid-19 period (p=0.462). On the other hand, there is a statistically significant increase in the “During” Covid-19 period for items no. 3 (p=0.026), no.15 (p<0.001), no.19 (p<0.001), no.23 (p<0.001), no. 27 (p<0.001), no. 35 (p<0.001). On the other hand, there is a statistically significant decrease in the “During” Covid-19 period for items no.7 (p<0.001), no. 31 (p<0.001), no. 35 (p<0.001), no. 38 (p=0.016).

Finally, Table 5 shows the KIMS values concerning the “Accept without Judgment” between “Before” and “During” the Covid-19 period. Only for the item no.32 there is no statistically significant difference (p=0.292). On the other hand, there is a significant increase in the values recorded for items no. 8 (p<0.001), no.12 (p=0.003), no.16 (p=0.017), no.20 (p<0.001), no.24 (p<0.001). Instead, there is a statistically significant reduction between the two periods for items no.4, no.28, no.36 (p<0.001, p<0.001, p<0.001, respectively).

Discussion

The purpose of the present study was to quantify Mindfulness-related nursing skills and how these varied considering the Covid-19 health emergency as a determining event.

In the literature there are now numerous references to how the pandemic condition of Covid-19 has strongly influenced the lives of all people and, in

Table 3. “Describe” factors of the Kentucky Inventory of Mindfulness Skills in a Nursing Sample (n=104) Before and During the COVID-19 pandemic.

Item Number and Content	Before COVID-19	During COVID-19	p value
	Means ±SD	Means ±SD	
2. I'm good at finding the words to describe my feelings.	3.10±1.14	2.85±0.97	0.078
6. I can easily put my beliefs, opinions, and expectations into words.	3.30±1.09	3.48±1.04	0.175
10. I'm good at thinking of words to express my perceptions, such as how things taste, smell, or sound.	2.95±1.30	3.36±1.10	0.020*
14. It's hard for me to find the words to describe what I'm thinking ^a .	3.06±1.16	2.82±1.12	0.102
18. I have trouble thinking of the right words to express how I feel about things ^a .	3.06±1.09	3.02±1.03	0.798
22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words ^a .	3.24±1.03	2.30±0.96	<0.001*
26. Even when I'm feeling terribly upset, I can find a way to put it into words.	3.64±0.89	3.08±1.06	<0.001*
34. My natural tendency is to put my experiences into words.	2.94±1.09	2.83±1.03	0.403

*p<0.05 is statistically significant. ^aReverse-scored item.

Table 4. “Act with Awareness” factors of the Kentucky Inventory of Mindfulness Skills in a Nursing Sample (n=104) Before and During the COVID-19 pandemic.

Item Number and Content	Before COVID-19	During COVID-19	p value
	Means ±SD	Means ±SD	
3. When I do things, my mind wanders off and I'm easily distracted ^a .	2.76±1.00	3.10±1.16	0.026*
7. When I'm doing something, I'm only focused on what I'm doing, nothing else.	3.57±1.05	2.73±1.08	<0.001*
11. I drive on “automatic pilot” without paying attention to what I'm doing ^a .	3.58±1.10	3.47±1.13	0.462
15. When I'm reading, I focus all my attention on what I'm reading.	2.33±1.08	2.88±1.14	<0.001*
19. When I do things, I get totally wrapped up in them and don't think about anything else.	2.70±1.03	3.05±0.97	<0.001*
23. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted ^a .	2.47±1.06	3.42±1.10	<0.001*
27. When I'm doing chores, such as cleaning or laundry, I tend to daydream or think of other things ^a .	2.51±1.07	3.68±1.05	<0.001*
31. I tend to do several things at once rather than focusing on one thing at a time ^a .	3.74±1.10	2.30±0.96	<0.001*
35. When I'm working on something, part of my mind is occupied with other topics, such as what I'll be doing later, or things I'd rather be doing ^a .	2.19±0.91	2.92±1.03	<0.001*
38. I get completely absorbed in what I'm doing, so that all my attention is focused on it.	2.71±0.94	2.50±1.01	0.016*

*p<0.05 is statistically significant. ^aReverse-scored item.

particular, that of health professionals, including the nursing class (4-6).

In general, the reported results show statistically significant evidence between the two periods of all 4 dimensions investigating KIMS. However, the results

report both significant increase in the “During” period and both significant decrease. Considering that the literature reports Mindfulness as an ideal approach for the psycho-physical and social well-being of man and, in particular in the period of health emergency, this

Table 5. “Accept Without Judgment” factors of the Kentucky Inventory of Mindfulness Skills in a Nursing Sample (n=104) Before and During the COVID-19 pandemic.

Item Number and Content	Before COVID-19	During COVID-19	p value
4. I criticize myself for having irrational or inappropriate emotions ^a .	3.28±1.07	2.27±1.00	<0.001*
8. I tend to evaluate whether my perceptions are right or wrong ^a .	2.43±1.02	2.97±1.26	<0.001*
12. I tell myself that I shouldn't be feeling the way I'm feeling ^a .	2.41±1.04	2.89±1.22	0.003*
16. I believe some of my thoughts are abnormal or bad and I shouldn't think that way ^a .	3.19±1.16	3.51±1.03	0.017*
20. I make judgments about whether my thoughts are good or bad ^a .	2.57±0.93	3.42±1.05	<0.001*
24. I tend to make judgments about how worthwhile or worthless my experiences are ^a .	2.31±1.04	3.31±1.14	<0.001*
28. I tell myself that I shouldn't be thinking the way I'm thinking ^a .	3.29±0.94	2.95±0.97	0.001*
32. I think some of my emotions are bad or inappropriate and I shouldn't feel them ^a .	2.73±1.13	2.58±1.10	0.292
36. I disapprove of myself when I have irrational ideas ^a .	3.06±1.09	2.31±1.05	<0.001*

*p<0.005 is statistically significant. ^aReverse-scored item.

approach is further supported as a psychological support to healthcare professionals stressed by the context of the pandemic (5,14,16).

From the results obtained, to delineate an ideal condition, one would have expected a significant increase in all items of the 4 dimensions of Mindfulness. However, this did not happen: in fact, the interviewed nurses show some aspects of Mindfulness in decrease. Therefore, the present study reinforces a need already highlighted in the literature: the increase of psychological support, as well as the strengthening of the approaches dictated by Mindfulness in order to guarantee the bio-psycho-social well-being of healthcare professionals, in particular of nurses (5). For this purpose, in the literature there are already some interventions to support the professional through above all dedicated telephone lines or the structuring of spaces (17,18) in the hospital that can favor a shaking of the whole emotional situation that the healthcare professional takes on in this particular historical period (5).

Surely this study presents the condition of 104 nurses. Future studies are desirable with a larger number of participants. Furthermore, it would be interesting to investigate if, in addition to “Before” and “During” the event, some improvement and incentive element for Mindfulness had been included in one's work environment to also try to understand which improvement factors can be more effective in imple-

menting Mindfulness skills among nursing professionals.

In conclusion, the present study is in agreement with the current literature on the need for the implementation of techniques aimed at increasing Mindfulness skills in clinical nursing practice (19,20), as this approach is effective with a cost-benefit ratio all to the advantage of both health company than professionals (21).

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