

The Risk of COVID-19 Transmission: Does It Affect Emotional Regulation of the Medical Staff in Algerian Hospitals?

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ABSTRACT

This study aimed at investigating the potential effect of emotional regulation on the medical staff in Algerian hospitals. A cross-sectional approach based on survey design was used in this study in order to answer the research questions. Data were collected by a questionnaire administered to a sample consisting of 153 randomly selected medical staff working at Algerian hospitals. The results revealed that the risk of COVID-19 transmission affected the emotional regulation of the medical staff in Algerian hospitals. It was also found that there were differences among participants in their emotional regulation that could be attributed to the variables of profession and workplace. The results highlighted the contributions of the positive and negative emotional regulation strategies, profession, and workplace as mediating variables in predicting the emotional regulation of medical staff. The results have important implications for how best to help the medical staff fulfill their emotions, thus being better qualified for the response to the COVID-19 pandemic.

KEYWORDS

Algerian hospitals, COVID-19, emotional regulation, medical staff, Transmission

1. INTRODUCTION

The outbreak of coronavirus disease (COVID-19) in 2019 continues to attract worldwide attention (Wang, Horby, Hayden, 2020). To date, COVID-19 cases have been confirmed in more than 200 countries around the world, and it has become a public health emergency of international concern (Hu, Li, He, Wang, Wei, Yin, & Chen, 2020). COVID-19 was a top priority on the world's agenda for the last three years since the first case was declared in the Chinese city of Wuhan on December 31, 2019. Since then, COVID-19 has spread and become a global pandemic. According to the latest statistics, there are now 414,525,183 cases and 5,832,333 death all over the world, and a number of 262570 reported cases and 6753 deaths in Algeria (WHO, 2021). These current conditions are usually characterized as a time of dynamic changes. The new world, shaped in light of the COVID-19 pandemic, dictates new requirements for people of helping professions and, above all, for medical staff (Ibragimova & Isupov, 2018).

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Typically, the effect of disease outbreaks is not limited to essential activities of individuals and economic status but rather is extended to emotional well-being (Restubog, Ocampo, & Wang, 2020; McKibbin & Fernando, 2020; Smith, Keogh-Brown, & Barnett, 2011), especially for medical staff and health workers. Existing literature shows that an outbreak of a contagious disease can be associated with mental health problems (Priede, et al., 2021), persisting psychological distress (Tam, Pang, Lam, & Chiu, 2004), post-traumatic stress disorder (Carmassi, et al., 2020), higher rates of depression (Ho, Chee, & Ho, 2020), anxiety (Jeong, et al., 2016), and stress (Mihashi, et al., 2009) among general population and more occasionally for medical staff involved in treating patients (Janiri, et al., 2020: 2).

In light of the massive outbreak of the COVID-19 pandemic worldwide, the medical staff and various health workers became on the front lines of the response to the pandemic. It has been affecting every health area in an unprecedented way since the 1918 influenza pandemic. (Carrasco, et al., 2021:117). The precautionary measures followed increased the feelings of fear and anxiety. These feelings have become the dominant features in most aspects of life, as people became suspicious of everything, including their relatives and those closest to them (Rana, Mukhtar, & Mukhtar, 2020). In this emergent situation, medical staff faced unprecedented psychological, physical, and occupational pressures during the initial period of the outbreak of Covid-19; not only due to the fact that the infection among medical staff and other health sector workers has risen sharply (WHO, 2020); but also because they have become responsible for rescuing increasing patients during a very tense time.

These changes and pressures may weaken the endeavor of the medical staff and negatively affect their performance. They also may not be able to control themselves and their desires and even about making the right decisions regarding the health of patients. All of this affected and is still affecting the mental health of the medical staff. There are several sources of stress and tension for the medical staff, which may lead those who lack emotional regulation to search for external sources to provide emotional stability and help them alleviate psychological problems (Bani Younis, 2009). Before reviewing previous related studies, a brief description of emotional regulation in the workplace is given in the next section.

1.1 Emotional Regulation in the Workplace

In order to deal effectively with their emotions, medical staff usually make use of cognitive processes of emotion regulation (Castellano, et al., 2019, p. 73), since emotional regulation serves as an essential component of healthcare delivery (Lartey, et al., 2020, p. 1). However, due to the unprecedented burden associated with the COVID-19 pandemic, medical staff as well as various health-related workers have been showing a cumulative traumatic experience that would have a serious impact on their emotional regulation and well-being (Di Giuseppe, et al., 2021; Wang, et al., 2021).

Emotions in the workplace are beginning to garner closer attention from researchers and theorists. Exploring the concept and mechanisms of emotional regulation can help maintain the mental health of the medical staff, direct them towards adequate handling of emotions, follow appropriate methods for organizing and expressing emotions, and help them alleviate psychological disorders, such as depression and anxiety, as well as avoiding behavioral problems (Salloum, 2015).

According to Thompson (1991, p. 271), emotional regulation may be defined as “the extrinsic and intrinsic processes responsible for monitoring, evaluating, and modifying emotional reactions, especially their intensive and temporal features”. Gross (1998, as cited in Castellano, et al., 2019) defines emotional regulation as “the processes that influence the way in which people experience and express their emotions” (p. 74). Bortoletto and Boruchovitch (2013) state that emotional regulation is a complex process that “involves intra and extra psychic factors, which guarantee the confrontation, redefinition, control, modification or modulation of the affective activity, to ensure the adaptive functioning of the person” (p. 236). This means that emotional regulation can be viewed as an umbrella concept for a set of abilities that include awareness and understanding of emotions, acceptance of emotions, control of extreme behaviors, acting in accordance with the desired goals when exposed to negative emotions, and situational and flexible use of emotion regulation strategies. The lack of

any or all of these abilities would be an indicator of difficulties in the regulation of emotion (Gratz & Roemer, 2004, p.42).

Due to the very nature of the medical staff's work and duties, emotions serve as a normal aspect of their life, affecting their behaviors and shaping their personalities. These emotions and how they are expressed change over the course of the individual experiences. Therefore, it is important to identify the various factors that cause psychological disorders related to emotional regulation, as well as how to confront, treat, and prevent these disorders.

1.2 Previous Studies

Emotional regulation is considered an important factor in maintaining psychological integrity and achieving success in life. Emotional regulation is pivotal in the individual's adaptation and adjustment to various life circumstances and affects his or her psychological/mental health and quality of life (Garnefski & Kraaij, 2006, p. 1660). The facts that inadequate emotional regulation is considered a cause as well as a consequence of many mental health disorders (Arndt & Fujiwara, 2014); and that it is associated with several psychological problems such as anxiety, depression, borderline personality disorder, drug-related disorders, and drug abuse (Berking & Wupperman, 2012. P. 128) are no more to be proved nowadays.

Some studies pointed to the importance of emotional regulation in suicidal behavior (e.g. Rajappa, Gallagher, & Miranda, 2011), where the lack of emotional regulation is one of the main components in the formation of suicidal thoughts. On the other hand, some studies have found that the lack of emotional regulation may be a positive protective factor that prevents the development of the individual's ability to commit suicide (Bender, Anestis, Anestis, Gordon, & Joiner, 2012). The researchers explained this claim in light of the premise that individuals with deficient emotional regulation have difficulty tolerating experiences that are inherently frightening or distressing (such as the possibility of infection with Covid-19 for hospital staff). Individuals with good emotional regulation, however, may be better capable of dealing with unpleasant situations and thus less fearful of death and more tolerant of pain (Bender, et al., 2012).

Although evidence on the long-term psychological impact of COVID-19 rests on scant empirical footing, scholars have begun to devote attention. In the attempt to examine the association between increased pressure and emotional problems for medical staff during the pandemic, early studies have provided some significant insights in terms of developing mental health symptoms for those on the front line of dealing with patients. For instance, Lenzo, et al. (2021) studied the reported symptoms of healthcare workers who treated COVID-19 patients. They found moderate to extremely severe symptoms of depression, anxiety, and stress. Pedraz-Petrozzi, et al. (2021) examined the emotional effects of COVID-19. They found that, compared to the general population, health workers had higher values of Patient Health Questionnaire (PHQ)-9 and peritraumatic distress. Chang, et al. (2021) found that 12.3% of frontline medical staff had mental distress and perceived lower social adaptation.

Other studies concluded that frontline medical staff showed higher rates of stress, anxiety, and depression (Pedraz-Petrozzi, et. Al., 2021; Lai, et al., 2020); fear of contagion (Maldonado, et al., 2020); posttraumatic stress symptoms (Rossi, et al., 2020); insomnia and higher psychological distress (Lai et al., 2020); higher cognitive reappraisal or expressive suppression (Fino, et al., 2021), and emotional exhaustion and depersonalization (Di Giuseppe, et al., 2021).

These results reveal the need for tailored programs aimed at providing psychological support for medical staff and various health-related workers (Conti et al., 2020). Some attempts were made in this respect. For example, Priede, et al. (2021) tried to identify the essential elements of the interventions designed for health-related workers with the purpose of reducing distress resulting from dealing with COVID-19 patients in Spain. They found that these programs focused primarily on "psycho-educational and cognitive-behavioral techniques" to enhance participants' emotional regulation. Yang, Liu, Li, and Shu (2020) examined the potential role of emotional-regulation strategies in improving mental

health during the COVID-19 pandemic. They concluded that using social media platforms for sharing precise and positive information could lead to better mental health for people.

Cantor-Cruz, et al. (2021) attempted to put forth evidence-based recommendations for reinforcing the mental health of medical staff during the pandemic. They developed 31 individual and group-based procedures such as coordinating work and taking advantage of community care to reduce the burden of the medical staff. Di Giuseppe, et al. (2021) found that affiliation, altruism, and anticipation served as mature defensive functioning that helped medical staff working directly with COVID-19 patients in enhancing resilience and personal accomplishment, thus reducing emotional exhaustion. Recently, Wang, et al. (2021) investigated the impact of time pressure, social sharing, and cognitive reappraisal on the emotional regulation of medical staff working with COVID-19 patients. They found that time pressure resulted in exacerbating emotional exhaustion. Cognitive reappraisal was also found to serve as a negative mediation within the association between time pressure and social sharing.

In the Arab context, researchers have devoted a substantial amount of attention to the importance of emotional regulation (e.g., Salloum, 2015; Yaqoub, 2011; Faeq, 2015; Albarahema, 2017). They focused on individuals' ability to regulate their emotions, and how emotional regulation can be related to other variables such as academic achievement, anxiety, and depression. However, Arab studies conducted on emotional regulation in the workplace, especially its significance in emergent situations seem to be too few in number to help draw any conclusive conclusions about this important issue. This study tries to fill this research gap.

1.3 The Present Study

Based on the foregoing, the attempt was made in this study to examine the relationship between the risk of COVID-19 transmission and the emotional regulation of the medical staff in Ghardaia hospitals. In order to investigate this problem, the study tried to answer the following questions:

1. Is there a relationship between the risk of COVID-19 transmission and the emotional regulation of the medical staff in Ghardaia hospitals?
2. What are the mediating effects of emotional regulation strategies, profession, and workplace?

The results of this study have important implications for examining the effect of emotional regulation on the medical staff in Algerian hospitals and for how best to help them fulfill their emotions, thus being better qualified for the response to the COVID-19 pandemic.

2. METHODOLOGY

A cross-sectional approach based on survey design was used in this study in order to answer the research questions. This research design is used to test specific hypotheses and describe characteristics or functions without interference from the researcher (Black, 1998).

2.1 Population and Sampling

The population of this study consisted of all the medical staff in Ghardaia province who worked during the COVID-19 pandemic. A sample consisting of 153 participants were randomly selected through stratified random sampling to participate in the study. The sample included 33 Physicians (21.1%), 43 Nurses (28.1%), 54 Nursing assistants (35.4%), and 23 Radiology technicians (15%). These participants worked at five hospitals in Ghardaia province, namely Bryan Hospital (n= 39), Al-Qarara Hospital (n= 37), Ghardaia Hospital (n= 46), Al-Manea Hospital (n= 16), and Metili Hospital (n= 15).

2.2 Instruments of the Study

2.2.1 *The Risk of COVID-19 Transmission Among Medical Staff Questionnaire*

Based on reviewing previous studies, a pilot sample of 40 medical and administrative staff working at Trichin Ibrahim Hospital, Ghardaia were asked an open question about the risks of infection. In light of their responses, the risks of COVID-19 transmission were defined and an initial form of the questionnaire was developed. The questionnaire consisted of 21 items measured on a 3-Likert scale (Enough= 3, Not Enough= 2, and Not Existing= 1). Furthermore, the questionnaire included items aimed at collecting data on the variables of gender, profession, occupational experience, marital status, and the workplace of each respondent.

2.2.1.1 *Validity of the Questionnaire*

In order to verify the validity of the questionnaire, it was administered to a pilot study consisting of 55 respondents of the non-participants in the main sample. The following methods were used to verify the validity: face validity, internal consistency, peripheral comparison validation (Discriminant validity), and Intrinsic Validity. The following paragraphs present the results of these methods.

- **Face validity.** The questionnaire was presented to 5 specialized experts to determine if the items of the questionnaire measured what they were developed to measure. In light of their opinions, eight items were modified, these were the items 1, 7, 11, 13, 14, 16, and 20.
- **Internal consistency.** This refers to the extent to which each item of the questionnaire is related to the domain to which it belongs (Qasim & Zaalán, 2018), in order to determine the correlation between each item and the overall score, thus can be considered as an indication of validity; that is, the item is related to the subject to be measured (Tichabet, 2018). Therefore, the correlation between each item and the total score of the questionnaire was calculated using the Pearson correlation coefficient. The results revealed that the majority of the items were statistically correlated to the total score at the level (0.01) of significance, except for the items (18,19, 20, 21) that correlated at the level (0.05) of significance, which indicates a high degree of internal consistency of the questionnaire.
- **Discriminant validity.** The discriminant validity of a construct is evident when “measures of constructs that theoretically should not be highly related to each other are, in fact, not found to be highly correlated to each other” (Hubley, 2014, p. 1676). Thus, a comparison was made between (33%) of the upper level of the questionnaire with (33%) of the lower level, followed by administering a t-test to examine the significance of differences between the means of the two samples. The calculated t-test value was (16.25), a value revealing that there are statistically significant differences between the upper and lower groups, which indicates that the questionnaire enjoys discriminant validity.
- **Intrinsic Validity.** Finally, the intrinsic validity of the questionnaire was calculated. Intrinsic validity means that test items should measure the construct in question (Colman, 2015). The result of calculating intrinsic validity amounted to 0.940, which indicates a high level of intrinsic validity.

2.2.1.2 *Reliability of the Questionnaire*

To calculate the reliability of the questionnaire, internal consistency and split-half methods were used.

- **Internal consistency.** The Cronbach's alpha correlation coefficient was used to calculate the internal consistency of the questionnaire. The results showed that the Cronbach's alpha correlation coefficients for the items with the total scale ranged between (0.724- 0.739), which are high values indicating an acceptable level of internal consistency. Moreover, the Cronbach's alpha

coefficient for the total score of the questionnaire was (0.890), which is a high value indicating the reliability of the scale.

- **Split-half method.** Split-half technique is a method used to check measuring instruments where half of the data is computed and is then correlated against the other half of the data (Chakrabarty, 2013). The results revealed that the values of the correlation coefficient were more than .750, which ensures an acceptable level of reliability in measurement.

2.2.2 Emotional Regulation Scale

The emotional regulation scale developed by Garnefski and Kraaij (2007) and translated into Arabic by Afanah (2018) was used in this study. The translated version consists of 36 items under 9 sub-dimensions these are self-blame (items 1-10-19-28); acceptance (items 2-11-20-28); rumination (items 3-12-21-29); positive refocusing (items 4-13-22-30); focusing on plans (items 5-14-23-31); positive re-evaluation (items 6-15-24-32); setting things straight (items 7-16-25-33); intimidation (items 8-17-26-34); and blaming others (items 9-18-27-35). The items of the scale are rated according to a 5-Likert scale ("Never applicable, not applicable, hesitating, applicable, fully applicable).

2.2.2.1 Validity of the Emotional Regulation Scale

The validity of the emotional regulation scale was verified in terms of discriminant validity and intrinsic validity.

- **Discriminant validity.** A comparison was made between (33%) of the upper level of the emotional regulation scale with (33%) of the lower level, followed by administrating a t-test to examine the significance of differences between the means of the two samples. The means for the upper and lower categories amounted (130.47) and (101.05), and the calculated t-test value was (11.35), a value revealing that there are statistically significant differences between the upper and lower groups, which indicates that the scale enjoys discriminant validity.
- **Intrinsic validity.** The result of calculating the intrinsic validity of the emotional regulation scale amounted to 0.837, which indicates a high level of intrinsic validity.

2.2.2.2 Reliability of the Emotional Regulation Scale

- **Internal consistency.** The Cronbach's alpha correlation coefficient was used to calculate the internal consistency of the emotional regulation scale. The results showed that the coefficient for the total score of the scale was (0.775), which is a high value indicating the reliability of the emotional regulation scale.
- **Split-half method.** The results of the split-half method revealed that the values of correlation coefficients ranged between (0.778- 0.886), which indicates an acceptable level of reliability in measurement.

3. RESULTS OF THE STUDY

This section presents the results of the study. The resulting data are organized in a manner that leads to answering the two questions of the study. The contribution of demographic factors (profession and workplace) and psychological factors (emotional regulation strategies) in affecting the emotional regulation of the medical staff in Algerian hospitals who are at risk of COVID-19 transmission are identified in the following sections.

3.1 The Relationship Between the Risks of COVID-19 Transmission and Emotional Regulation of the Medical Staff

To investigate the relationship between the risks of COVID-19 transmission and the emotional regulation of the medical staff, the Pearson correlation coefficient was calculated. The results obtained were insignificant ($r=0.038$, $p<0.05$), which indicates a very weak inverse correlation (see Table 1). This means that the risks of COVID-19 transmission faced by the medical staff did not affect their emotional regulation to the extent that may hinder them from doing their jobs. In handling pressures associated with the risks of COVID-19 transmission, the participants may have used a variety of positive as well as negative emotional regulation strategies. There may also be an effect of other mediating variables in explaining the relationship between the risk of COVID-19 transmission and emotional regulation. These variables are discussed in the following section.

3.2 Emotional Regulation Strategies

For further examination of the emotional regulation strategies the participating medical staff used in handling stressful situations resulting from being at risk of COVID-19 transmission, the Friedman test was used to measure the analysis of variance by rank. Results obtained showed that positive emotional regulation strategies ranked first with a significant level (total = 9.64, $p<.001$), and negative emotional regulation strategies came second (total = 9.39, $p<.001$). These figures indicate a total difference value between the ranks ($\chi^2=333.897$, $p<0.01$), which are significant and explanatory values (see Table 2).

3.3 The Role of the Other Mediating Variables in Explaining the Relationship Between the Risk of COVID-19 Transmission and Emotional Regulation

In order to examine the role of the other mediating variables (i.e. the professions of the participants and workplace) in explaining the relationship between the risk of COVID-19 transmission and emotional

Table 1. Results of Pearson correlation coefficient for correlation between the risks of COVID-19 transmission and emotional regulation

Scales	Means	Standard deviation	Freedom degree	Pearson correlation coefficient	Significance level
Risks of COVID-19 transmission	39.614	8.085	153	0.038-	0.641
Emotional regulation	116.006	12.202			

Table 2. Results of the Friedman test for comparing mean ranks of emotional regulation strategies

	Emotional regulation strategies	Mean ranks	X2 value	Sig
positive emotional regulation strategies	Refocus On planning	6.67	333.897	0.00
	Positive Reappraisal	5.45		0.00
	Positive Refocusing	4.48		0.00
	Acceptance	3.02		0.00
	Total	9.64		0.00
Negative emotional regulation strategies	Catastrophizing	4.29		0.00
	Self-blame	4.18		0.00
	Rumination	4.01		0.00
	Projecting blame	3.91		0.00
	Total	9.39		0.00

regulation, Multiple Analysis of Variance (MANOVA) was used. MANOVA is an extension of the one-way analysis of variance (ANOVA) that is used for detecting the differences between two or more dependent variables, depending on the categorical variables that serve as independent variables (Tichabet, 2018). MANOVA was used in this study in order to use a single aggregate statistical test on this set of variables instead of using several separate tests.

Results presented in table (3) show that the highest value of Mahal Distance amounting (5.17) was smaller than the value of the tabulated chi-squared test (10.83), which is a statistically significant value ($p < 0.01$), indicating that there are no outliers in the data. After verifying the conditions of MANOVA, the results of testing the multiple analysis of variance for the differences between the risks of COVID-19 transmission and the emotional regulation of the participants according to the mediating variables of profession and workplace are presented.

Results presented in table (4) show the results of Wilks' lambda test for the mediating variables of the study. According to Tichabet (2018), statistical significance means that there is a significant effect on the difference in one or more of the dependent variables. In these results, it is observed that the values were insignificant except for the total degree of the test. The results of the analysis of variance would identify which dependent variables are influenced. Thus, in order to identify the direction of the differences between emotional regulation and the mediating variables, MANOVA was used (see Table 5). The effect of each mediating variable is discussed in the following two sections.

Table 3. outliers of the data

Number of variables	Tabulated chi-squared test	Highest values of Mahal Distance	Lowest values of Mahal Distance	Mean	Standard deviation
2	10.83	5.17	0.02	0.993	1.151

Table 4. The results of Wilks' lambda test for the mediating variables

Independent variables	Calculated f test	Wilks' lambda test	Significance value
The whole test	3643.918	0.010	0.000
Profession	0.818	0.936	0.558
workplace (hospital)	1.309	0.871	0.244

Table 5. Results of MANOVA for the differences in the risks of COVID-19 transmission and the emotional regulation according to the mediating variables

Sig	Calculated f value	Means of squares	Freedom degree	Sum of squares	Source of variance	
0.524	0.751	46.904	3	140.713	Transmission risks	Profession
0.020	3.403	489.418	3	1468.255	Emotional regulation	
0.049	2.397	149.687	4	598.749	Transmission risks	Workplace/Hospital
0.687	0.567	81.564	4	326.254	Emotional regulation	
		62.457	140	8743.987	Transmission risks	Error
		143.834	140	20136.792	Emotional regulation	
			153	250041	Transmission risks	Total error
			153	2081633	Emotional regulation	

3.3.1 The Mediating Role of the Profession

Results obtained demonstrated that the differences in emotional regulation were significant and explanatory in favor of nurses (means= 122.388), followed by radiology technicians (means= 120.216), then nursing assistants (means= 113.651), and finally physicians (means=108.384; see table, 6). These results reveal that although there was no statistically significant difference in the risks of COVID-19 transmission among participants according to their profession, significant differences were observed in emotional regulation that could be attributed to the variable of the profession. This can be explained by the fact that various medical personnel, regardless of their professions, are at risk of COVID-19 transmission, a fact that was evident in the actual infection of a large number of medical staff due to their pivotal role in dealing with patients and confronting the virus.

3.3.2 The Mediating Role of Workplace

Contrary to the effect of the profession variable, results showed that while there was no statistically significant difference in emotional regulation that could be attributed to the variable of the workplace (see Table 5), significant differences in the risks of COVID-19 transmission were observed between participants working at different hospitals. Specifically, it was found that medical staff working at Ghardaia Hospital were at a higher risk of COVID-19 transmission compared to those working at the other hospitals, although all had high scores in this respect (see Table 7).

4. DISCUSSION

Analyzing data resulting from this study highlighted five main findings. First, there was a negative correlation between emotional regulation and the risks of COVID-19 transmission. Despite not having significant value per se, the mediating variables may have contributed to maximizing or minimizing that correlation. It was also found that participants used both positive emotional regulation strategies (refocus on planning, positive reappraisal, positive refocusing, and acceptance respectively) and negative emotional regulation strategies (catastrophizing, self-blame, rumination, and projecting blame respectively) in handling stress and controlling their emotions. This could mean that emotional

Table 6. Results of means and standard deviations of emotional regulation according to the variable of profession

Profession	Means	Standard deviations
Physician	108.384	5.914
Nurse	122.388	6.326
Nursing assistant	113.651	4.369
Radiology technician	120.216	5.588

Table 7. results of risks of COVID-19 transmission according to workplace

hospital	Means	Standard deviation
Bryan	113.525	2.041
Al-Qarara	116.521	2.125
Ghardaia	119.103	1.871
Manea	114.060	3.208
Metili	115.959	3.268

regulation strategies could have influenced the correlations between emotional regulation and the risks of COVID-19 transmission.

This indicates that the participants were able to deal with these challenging circumstances and difficulties thanks to their good emotional reactions. Positive emotional regulation strategies may reinforce positive responses and, at the same time, reduced negative emotional reactions, thus helping a person feel emotionally stable in facing unpleasant emotions and stressful circumstances. This finding is consistent with the conclusion made by Koole, van Dillen, and Sheppes (2011) who stated that people attempt to reroute the natural flow of their positive or negative emotions and reactions to situations that they perceive to be pertinent to their ongoing concerns.

This is also in accordance with the stress and coping theory which views stress and coping mechanisms as interactions between the individual and the environment, where stress management is a dynamic process that necessitates a reevaluation of what the stressor poses and whether there are enough resources available to handle it (Proulx & Aldwin, 2016).

Similarly, the results are in line with the conclusions reached by Fino, et al. (2021) in their investigations of the protective role of resilience, emotion regulation, and social support. They found that cognitive reappraisal and expressive suppression served as successful strategies to modulate emotion for boosting growth in frontline healthcare workers during the COVID-19 pandemic.

Another aspect of consistency is with the one published by Yang, Liu, Li, and Shu (2020) who concluded that positive emotional strategies (cognitive reappraisal and expressive suppression) were positively associated with life satisfaction and a sense of adequacy during the pandemic; a finding that is consistent with the results reached by Hu, et al. (2014) who found a positive correlation between cognitive reappraisal and life satisfaction, and negative correlation with anxiety and depression.

Furthermore, the results highlighted a significant mediating role of the profession variable. A significant difference in emotional regulation was found in favor of nurses. This finding can be explained by the nature of the jobs done by nurses, who are the main ones responsible for following up and caring for patients on a regular basis, which makes them most vulnerable to emotional regulation problems. Another possible explanation is that the emotional regulation strategies used by participants varied according to their professions. Unlike physicians who may have been more aware of using positive emotional regulation strategies, nurses mostly used emotional regulation strategies (catastrophizing, self-blame, rumination, and projecting blame), thus leading to disturbing their emotional regulation.

Finally, the workplace of the participants was found to have a significant role in explaining the risks of COVID-19 transmission. Results demonstrated that there were statistically significant differences in the risks of COVID-19 transmission among medical staff in favor of Ghardaia Hospital. This can be explained by the premise that Ghardaia Hospital is the central hospital of the state of Ghardaia. The hospital always received patients in areas that did not have any isolation facilities. Ghardaia Hospital was also receiving all the serious cases sent by neighboring hospitals. This case made the medical staff in Ghardaia Hospital under great pressure at work, and the rates of COVID-19 transmission among medical staff were comparatively high due to the large number of infections in the hospital. It was also found that there were no statistically significant differences in emotional regulation among medical staff in Ghardaia Hospitals that could be attributed to the variable of the hospital. This is explained by the fact that all medical staff, regardless of their professions, were under intensive pressure while performing their work, and that they faced the same conditions at work, endured hardships, suffered from a lack of capabilities, and were away from their families due to fear of COVID-19 transmission.

This finding is consistent with the results reached by Lenzo, et al. (2021) who asserted the significant contribution of the workplace in explaining emotional problems encountered by healthcare workers during the pandemic. This result is also in line with Chang, et al. (2021) who found significant differences in mental distress and perceived lower social adaptation status during the pandemic between general hospitals and psychiatric hospitals' healthcare workers.

5. CONCLUSION, LIMITATIONS, AND DIRECTIONS FOR FUTURE RESEARCH

The COVID-19 pandemic has made people anxious, perplexed, and panicked all over the world. The medical staff and other healthcare workers were no exception. The findings of this study provided insights into the potential impact of the risks of COVID-19 transmission on the emotional regulation of the medical staff in Algerian hospitals. The findings reached can help understand the specific contributions of the positive and negative emotional regulation strategies, the role of the profession, and the role of the workplace as mediating variables predicting the emotional regulation of medical staff. Moreover, the results of the present study extend the generalizability of these reached by previous related studies in that being a COVID-19 frontline health worker is linked to greater psychological distress, which includes harmful behavioral and emotional elements. This may be because front-line healthcare workers must deal with issues like long hours, the loss of coworkers, and infection-related anxiety.

These results may be taken into account by future research and public health authorities to develop mental health interventions for medical staff during pandemic times to aid in their ability to control their emotions and function. Social support interventions are also required for both medical staff and the public population during the pandemic times, which calls for conducting further research on by whom and how to deliver these interventions for the favorable progress of health-related work as well as for public interest. For instance, how media content can help the general public learn about COVID-19 prevention and how to cope emotionally with a pandemic need to be investigated. The provision of timely and accurate information about COVID-19, fewer COVID-19 discussions among healthcare workers, and encouraging kind online interactions as opposed to judgmental ones may also be useful tactics for enhancing emotional regulation.

The focus of this study was on three mediating variables that could have an influence on the medical staff's emotional regulation. Thus, there is a need to conduct further research on various variables such as sex, age, and work experience. Another limitation is that the study does not have baseline data about the emotional regulation status of medical staff in Algeria before the COVID-19 pandemic to be compared. Added to that, the generalizability of the current findings may be hampered by the small size sample of Algerian medical staff that was surveyed. Due to their traditional Arab values, Algerians may react to pressure by engaging in more social sharing than people with individualistic values. By using samples from various nations, future research could replicate and expand upon our findings. Moreover, this study was a cross-sectional design and all data were self-reported, which might present method biases, therefore using a mixed-methods research design that collects more enriched data, such as interviews and focus groups, along with quantitative survey data may help triangulate findings reached by this study. Finally, future research may consider the potential impact of financial and/or logistic constraints related to the COVID-19 pandemic as factors for greater rates of emotional regulation disturbance during the times of pandemic

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