

The Psychological Effects of the COVID-19 Pandemic on Non-Healthcare Migrant Workers in a Construction Company in Saudi Arabia

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Abstract—Introduction: The Coronavirus (COVID-19) disease was firstly reported in Asia at the end of 2019 and became a pandemic at the beginning of 2020. It resulted in a significant impact over the global economy and the health care systems around the world. The immediate measure adopted worldwide to contain the virus was mainly the lockdown and curfews. This certainly had an important impact on expats workers due to the financial insecurity, culture barrier and distance from the family. Saudi Arabia has one of the largest flows of foreign workers in the world and expats are the majority of the workforce. The aim of this essay was assessing the psychological impact of COVID-19 in non-health care expats living in Saudi Arabia. Methods: The study was conducted in a construction company in Riyadh with non-health care employees. The cross-sectional study protocol was approved by the company's executive management. Employees who verbally agreed to participate in the study were asked to anonymously answer a questionnaire validated for behavioral research (DASS-21). In addition, a second questionnaire was created to assess feelings and emotions. Results: More than a third of participants screened positive for one or more psychological symptoms (depression, anxiety and stress) on the DASS-21 scale. Moreover, it was observed an increase on negative feelings on the additional questionnaire. Conclusion: This study reveals an increase on negative feelings and psychological symptoms among non-health care migrant workers during the COVID-19 pandemic. In light of this, it is crucial to understand the emotional effects caused by the pandemic on migrant workers in order to create supportive and informative strategies minimizing the emotional impact on this vulnerable group.

Keywords—COVID-19 pandemic, Saudi Arabia, psychological effects, migrant workers.

I. INTRODUCTION

THE first Coronavirus (COVID-19) infection was reported in December 2019 in Wuhan, China and rapidly reached over 200 countries across the world becoming a pandemic and directly impacting international economies and lifestyles. The first case that was reported in Saudi Arabia was on the 2nd of March 2020. The government response was immediate and the lockdown across the country was imposed starting from the 5th of March 2020 [1].

The COVID-19 affects resulted in restricted measures such as the lockdown and curfew which have affected the populations worldwide. This could have a more severe impact on foreign workers due to the cultural and language barrier, financial uncertainty, lack of a social support network and concern about families in their native places once they were

unable to reach and support their families back home.

The International Labor Organization (ILO) estimates that there are 244 million migrants around the world and a significant number are low or semiskilled workers who live under poor conditions and hygiene. Due to the unsatisfactory housing and living conditions for a pandemic situation, COVID-19 has highlighted the vulnerability of migrant workers as an occupational group [2].

Saudi Arabia attracts a large number of international migrant workers from low-income countries. According to the most recent report of Saudi labor market statistics, migrants are still the majority of the workforce (53,8%) [3]. Non-healthcare workers are mostly males, living in labor camps outside the city or other cramped and crowded accommodations. They are also employed in low-skilled sectors such as retail shops, transportation and the construction industry [3]. These migrant workers are more prone to social, psychological and emotional trauma in situations such as the COVID-19 pandemic [4]. They belong to the most marginalized class of the society who are dependent on their wages to support their families. Moreover, the fact that many foreign labors remain outside and work in essential businesses such as cleaning and construction during curfew hours could have propagated discrimination and fear of contamination in this vulnerable population.

Periods of self-isolation such as the pandemic lockdown, especially in the context of stress, is related to acute and prolonged negative mental health. In particular, non-health care individuals from lower socio-economic groups are the most vulnerable [5]. Furthermore, exposure to stress triggers relapse characterized by instantiation of alcohol cravings, alcohol-seeking behaviors and a rise of smoking cigarettes, as shown in several studies conducted in the UK and Belgium during the national lockdown [5], [6].

Studies developed in China [7], India [8], Kuwait [9] and in the United Arab Emirates [10] have assessed the psychological impact of COVID-19 in healthcare migrant workers and the general public in Saudi. Therefore, this study aims to assess the psychological response towards the COVID-19 pandemic in non-health care migrant workers in a construction company in Saudi Arabia.

II. METHODS

This cross-sectional study was conducted in a construction

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company in Riyadh, Saudi Arabia as part of the quality improvement program. The data were collected during the second semester of 2020 and the analysis was done in the beginning of 2021. Employees following the below eligibility criteria were invited to participated the survey:

- Being a male migrant worker in Saudi Arabia;
- Being between 20 and 60 years old;
- Being an active worker during 2020;
- Being in Saudi Arabia during the lockdown and curfew period (between March and June 2020);
- Living in the company labor camp;

All migrant employees who were eligible and accepted verbally to participate the study, with no exclusion were asked to answer a valid questionnaire (DASS-21) that assessed levels of depression, anxiety and stress. Also, a self-made questionnaire was designed to assess the emotional response to the lockdown and was asked to be completed.

III. RESULTS

A total of 675 migrant employees from different nationalities were invited to participate in a survey. Overall, 149 completed the survey questionnaires.

Out of 149, 36.6% (n = 40) of the respondents were found to screen positive for one or more levels of depression, anxiety and stress (from mild to extremely severe) in the DASS-21 scale. Those who screened positive, more than half (67.5%, n = 26) screened levels for depression (from mild to severe), 87.5%, n = 35 for anxiety (from mild to extreme severe), and 35%, n = 14 for stress (from mild to extreme severe), (Table I). Overall, 42.5% n = 17 screened positive for one psychiatric subclass, 25% n = 10 for 2 subclasses and 32.5 % n = 13 for 3 subclasses in DASS-21 scale.

TABLE I
PARTICIPANTS' PERFORMANCE (N = 149) ON THE THREE SUBSCALES OF DEPRESSION, ANXIETY AND STRESS SCALE OF DASS-21

Levels, N (%)	Stress*	Anxiety*	Depression*
Normal	39 (26.1%)	25 (16.7%)	45 (30.2%)
Mild	8 (20%)	10 (25%)	14 (35%)
Moderate	2 (5%)	14 (35%)	11 (27.5%)
Severe	3(7.5%)	6 (15%)	2(5%)
Extremely Severe	1 (2.5%)	5 (12.5%)	0

*Subscales of DASS-21

The characteristics of the participants that screened at least for one subscale of DASS-21 n = 40, were mainly Pakistani workers (42.5%, n = 17) followed by Indian workers (30%, n = 12). Regarding age, half of the participants were between 20 to 30 years old (mean age = 25), 60%, n = 24 only studied in primary school, 52.5%, n = 21 have been in Saudi for less than 5 years, more than half are singles (55%, n = 22) and around two-thirds are non-smokers (60%, n = 24) (Table II).

Those employees who did not screen for any subscale of DASS-21 n = 109 were found to be mostly Indians 30.2% n = 33, were aged between 31-30 years old (mean = 25.5), almost half (49.5%) studied until the primary school, 41.2% n = 45 have been in Saudi less than 5 years, 60.5% are married (n = 66) and non-smokers (64.2% n = 70) (Table II).

TABLE II
THE CHARACTERISTICS OF THE EMPLOYEES THAT PARTICIPATED IN THE SURVEY

Variable	Didn't screen for DASS n = 109		Screen for DASS n = 40		Total n = 149	
	n	Percent	n	Percent	n	Percent
Age						
20-30	33	30.2	20	50	53	35.5
31-40	54	49.5	16	40	70	46.9
50+	22	20.1	4	10	26	17.4
Country of origin						
Pakistan	30	27.5	17	42.5	47	31.5
Indian	33	30.2	12	30	45	30.2
Arab countries	20	18.3	5	12.5	25	16.7
Bangladesh	8	7.3	4	10	12	8.05
Philippine	17	15.5	2	5	19	12.7
Yemen	1	0.9	0	0	1	0.67
Education						
Primary	54	49.5	24	60	78	52.3
High school	44	40.3	13	32.5	57	38.2
College	11	10	3	7.5	14	9.3
Years in Saudi						
less than 5	45	41.2	21	52.5	66	44.2
6- 10 years	38	34.8	12	30	50	33.5
10 +	26	23.8	7	17.5	33	22.1
Marital Status						
Single	43	39.4	22	55	65	43.6
Married*	66	60.5	18	45	84	56.3
Smoker						
Yes	39	35.7	16	40	55	36.9
No	70	64.2	24	60	94	63

*All married participants live without their families in the Kingdom.

For the self-designed questionnaire, 27%, n = 40 reported an increase in tension, 23% n = 34 in irritability, 34% n = 50 in frustration and one forth in loneliness. More than half (64% n = 95) felt a decrease in social connection. About one fourth of participants had an increase in fear and fear of death. Also, 27% n = 40 had an increase in tiredness. Almost one fourth of smokers had an increase in the habit. Lastly, around two thirds experienced some change in their sleeping habit (Table III).

TABLE III
IMPACT ON FEELINGS AND BEHAVIORS, N = 149

Variables	Decreased a lot	Decreased a little	No Change	Increased a little	Increased a lot
Low Mood	8% (12)	8% (12)	65% (97)	15% (22)	4% (6)
Tension	6% (9)	4% (6)	58% (88)	27% (40)	4% (6)
Irritability	3% (4)	8% (12)	66% (99)	23% (34)	0%
Frustration	5% (7)	2% (3)	38% (57)	34% (50)	21% (32)
Loneliness	4% (6)	8% (12)	48% (72)	25% (37)	15% (22)
Social Connection	35% (52)	29% (43)	26% (39)	10% (15)	0%
Fear	2% (3)	10% (15)	45% (67)	19% (28)	24% (36)
Death Fear	4% (6)	10% (15)	38% (57)	27% (40)	21% (31)
Sleep	2% (3)	6% (9)	48% (72)	23% (34)	21% (31)
Insomnia	2% (3)	13% (19)	35% (52)	29% (44)	21% (31)
Appetite	4% (6)	15% (22)	71% (106)	10% (15)	0%
Pain	4% (6)	13% (19)	67% (100)	16% (24)	0%
Tiredness	2% (3)	13% (19)	58% (87)	27% (40)	0%
Smoking	2% (3)	8% (12)	67% (100)	18% (27)	5% (7)

The characteristics of the participants who answered the self-designed questionnaire about a change in their feelings and behaviors ($n = 149$) are mainly from Pakistan (31.5% $n = 47$) followed by Indians (30.2% $n = 45$), were between 31 to 40 years old (mean = 35.5), only studied in primary school $n = 78$, been in the kingdom for less than 5 years $n = 66$ and are married $n = 84$ but living without their families as per country rules (Table III).

IV. DISCUSSION

The COVID-19 pandemic has evidenced the vulnerability of the working population, in particular migrant workers all over the world [9]. Many services classified as non-essentials have closed during the lockdown period and placed monetary strain on migrants who rely on wages for their own and family survival. Moreover, the curfew period that was imposed between 3pm to 6am in Saudi Arabia, for weeks, restricted the workers to their accommodation, which most of the time was small and poorly maintained, putting them at a higher risk of acquiring and spreading the virus.

In Saudi Arabia, a study performed with migrant health care workers suggests that the COVID-19 pandemic has increased the risk for many mental health diseases, including anxiety, depression and mental health deterioration due to health and job insecurity [11].

In this present survey, 36.6% ($n = 40$) of the participants screened positive for one or more subclasses I of depression, stress and anxiety. The percentage of participants who screened positive for depression was 26% and is very similar to the depression prevalence estimated in migrant labors in other gulf countries (ranging between 13-25%) [12].

Our findings are in line with previous studies conducted during the pandemic with levels of severe anxiety among migrants in Iran and Spain found to be 19.1% [15] and 11.6% [16], respectively. Similarly, the present study's level of severe anxiety was reported by 15% of the participants. Furthermore, our results help to support those of a published study in China, with 53.8% of its participants reporting moderate to severe symptoms of the psychiatric disorders subclasses during the pandemic [17]. Likewise, our study found this result in 50% of our participants. Severe stress levels were also reported in 8.1% [17] whilst the present study found it in 7.5%.

Another important finding in the present study was that more than half of the participants who screened positive for depression, anxiety and stress have lived in the Kingdom for less than 5 years. This relation between psychiatric symptoms and the short duration of migration was shown by [13] and [14]. In addition, in 2017, Zhong reported the main risk factors for distress to be more prevalent in newer rather than older generations with low monthly income, poor fluency in the local language, long working hours and migrating alone [18].

Many labors take precarious job with less pay and long working hours mainly due to the lower education and lack of qualification. The present survey reported that 60% of the workers who screened positive for depression, anxiety and stress had only completed primary education. Our results link to those of a previous study conducted by Zhong in 2015 which

found that one of the risk factors for mental distress in migrant workers included lower education [19]. Another study which supports our findings was conducted by Nadim in Saudi Arabia, who found a higher depression prevalence in married men who had education only up to high school [14]. In addition, Grzywacz, in 2011, described high depressive symptoms and sleeping disorders in adult seasonal farmworkers (45%), especially those with few years of education [20]. Within the present study, around 44% of participants had a change in their sleeping habit such as an increase in sleeping hours (44%) or insomnia (50%).

On the self-designed questionnaire, a significant proportion of participants reported an increase in negative emotions and feelings such as tension (31%), frustration (55%), loneliness (40%), fear (43%) and death fear (48%). More than 50% felt an important decrease in social connection which may be directly related to the lockdown and curfew period. Furthermore, a majority of married participants reported increased negative feelings during the pandemic. This could be because they share an accommodation with other single co-workers instead of living with their families. This is because the law does not allow low skilled labors to have a 'family contract' and those who are allowed usually cannot afford bringing their families to the Kingdom. Family separation could therefore explain the negative impact on feelings due reduced social support. This in turn could result in increases in frustration, loneliness, and fear especially during the pandemic. Yao in his research with labor migrants confirmed the detrimental impact of migration on mental health existed only for migrants non accompanied by family members [22].

In terms of smoking habits, it was noted that among the smokers, 5% reported an important increase in the habit corroborating with a study in the UK that reported an increase of 7% among the smokers during the lockdown period [5]. In Wu's research, it was shown that smokers were more prevalent among migrant workers in the construction field than other occupations, length of migration and tend to vary inversely with education [21].

Overall, several studies reveal that the COVID-19 pandemic intensifies severe anxiety and depressive symptoms in migrant labors, which help to support our findings. For example, a survey in India reported two-thirds of the participants had a significant increase in tension, irritability, low mood and frustration [8]. Another study conducted in China reported that more than half of participants experienced moderate to high depressive and anxiety symptoms and levels of stress [7]. Likewise, studies conducted in the middle east have also assessed migrant workers, for instance, a study in Kuwait suggested that the COVID-19 pandemic placed multiple extraordinary stressors and highlighted the vulnerability on this marginalized subpopulation in the country [9]. Finally, in the UAE, a survey on migrant workers during the lockdown evidenced a presence of psychological distress and relevant symptoms of depression, anxiety and the risk for post-traumatic stress disorder [10].

V. LIMITATIONS

Limitations of this study include a low number of responses to the questionnaires (only 22% of the labors in the company). The study was also performed at a particular point of time which did not consider the psychological condition of migrant workers prior to the pandemic. A longitudinal study would be appropriate to provide a full follow up of their mental status. In addition, a higher number of employees will be needed in future studies to provide a proper assessment and therefore help to support our findings and create mental health strategies.

Secondly, another limitation is that the psychological impact reported may not accurately represent the mental health status of the employees. This is because stress, anxiety and depression may have subjective meanings for each participant. To determine a greater accuracy of the results, future studies could include the definitions of each of these terms in the self-report questionnaires. Linking to this, another limitation of this study was assessing workers from different nationalities and scholarship levels which may have impacted their understanding of certain words within the questionnaires. Definitions and possible translations in their local language could have been included to reduce the risk of misunderstandings.

Despite all limitations, the present study provides information about the mental effect of the pandemic on migrant workers in a construction private company in Saudi Arabia and as a result the magnitude of the impact on the employees' performance at work.

VI. CONCLUSION

The emotional effects of the pandemic have suggested an increase in severe mental distress and important psychological effects mostly evidenced in migrant workers around the world. In the light of this, it is essential to understand the psychological effects of this vulnerable group of people in order to implement supportive measures as they have substantially contributed to the economy and development of the country. Furthermore, it is also important to identify the coping strategies implemented by the workers, through which the whole team can contribute to reduce the negative impact of change, stress and decreases in productivity. Future implications could include companies increasing opportunities for dialogue, facilitating access to health services, encouraging foreign workers to ask questions and provide them with official and clear information about the pandemic, vaccination schedule, use of mandatory apps and precautionary measures such as the use of masks, proper hygiene and social distancing.

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