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Article

Covid-19 pandemic and its economic and psychological impacts on Saudi workers: An empirical study in the kingdom of Saudi Arabia

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Abstract: Background: The COVID-19 pandemic has had a substantial economic and psychological impact on workers in Saudi Arabia. The objective of the study was to assess the effects of the COVID-19 epidemic on the financial and mental well-being of Saudi employees in the Kingdom of Saudi Arabia. **Purpose:** The COVID-19 epidemic has resulted in significant economic and societal ramifications. Current study indicates that the pandemic has not only precipitated an economic crisis but has also given rise to several psychological and emotional crises. This article provides a conceptual examination of how the pandemic impacts the economic and mental health conditions of Saudi workers, based on contemporary Structural Equation Modeling (SEM) models. **Method:** The current study employed a qualitative methodology and utilized a sample survey strategy. The data was gathered from Saudi workers residing in major cities of Saudi Arabia. The samples were obtained from professionals such as managers, doctors, and engineers, as well as non-professionals like unskilled and low-skilled laborers, who are employed in various public and private sectors. A range of statistical tools, including Descriptive statistics, ANOVA, Pearson's Correlation, Factor analysis, Reliability test, Chi-square test, and regression approach, were employed to analyze and interpret the results. **Result:** According to the data, the pandemic has caused a wide range of economic problems, including high unemployment and underemployment rates, income instability, and different degrees of pressure on workers to find work. Feelings of insecurity (about food and environmental safety), worry, dread, stress, anxiety, depression, and other mental health concerns have been generated by these challenges. The rate of mental health decline differs among demographics. **Conclusions:** The COVID-19 pandemic has universally affected all aspects of our lives worldwide. It resulted in an extended shutdown of educational institutions, factories, offices, and businesses. Without a question, it has profoundly transformed the work environment, professions, and lifestyles of billions of individuals worldwide. There is a high occurrence of poor psychological well-being among Saudi workers. However, it has been demonstrated that both economic health and mental health interventions can effectively alleviate the mental health burden in this population.

Keywords: COVID-19; economic impact; psychological impact; perception; covid management; Saudi workers; Saudi government

1. Introduction

Pandemics are defined by the WTO as the global dissemination of a novel illness. Influenza pandemics typically refer to the emergence of novel viral strains that quickly spread and against which people have limited immunity (Sheraton et al., 2020). Throughout history, various types of pandemics caused by viruses have occurred (Lu and Lin, 2021). Currently, the globe is grappling with a new and highly dangerous pandemic called the Novel Coronavirus. Wuhan, China was the

initial site of this virus's 2019 December debut (Khan et al., 2021). After the 'Novel Coronavirus' was identified as an outbreak in China, the WTO proclaimed it a pandemic in March 2020 because of how quickly it spread over the world. More than 213 nations have been impacted by COVID-19 as of 10 May 2021, with 157,289,118 confirmed cases and 3,277,272 deaths, according to the WTO situation report (Meyer et al., 2021). Many South Asian countries are currently in a state of partial lockdown due to the contagious nature of the B.1.617.2 variant of COVID-19 and concerns about its spread (Ksinan Jiskrova, 2022). Research has indicated that the containment of infectious diseases can only be achieved by promoting the practice of social distancing and implementing quarantine measures (Yang et al., 2020). Lockdown measures and personal hygiene practices have been identified as the most efficacious means of preventing the spread of this lethal disease (Siddiqui et al., 2021).

Not only did the COVID-19 pandemic increase the number of cases and fatalities caused by the virus, but it also created major shifts in people's health, ways of living, economics, and society as a whole (Ghozy et al., 2022). There is consensus among experts after three years of the epidemic that people's financial and mental health have taken a hit, although the degree to which this is true differs across demographics (Fukushima et al., 2023). Disruption to jobs and financial losses due to nationwide lockdowns and limitations are crucial indicators of mental health difficulties (Khan, Alakkas, et al., 2023). The situations of healthcare professionals have been the exclusive focus of previous research. Mental health problems, such as sadness and anxiety, burnout, stress, and are common among COVID-19 healthcare providers because of the high demands placed on them (Khan, Vivek, et al., 2023). Those in the service sector felt the effects the greatest, those running small businesses, those who were self-employed, women in the workforce, and those in professional and technical occupations (Habib et al., 2021).

Although it has affected the financial stability of millions of people, the COVID-19 pandemic has caused a health crisis in addition to a disaster in the job market and the economy (Rodoplu Şahin et al., 2022). All Saudi nationals, including migrant workers, will have access to free COVID-19 immunizations, screenings, and healthcare services, according to a program launched by the Saudi health ministry. In addition, healthcare professionals who were going on the Hajj or Umrah pilgrimage were required to get the vaccine (Sultan et al., 2022). Later, the obligation was expanded to include all male and female workers in the public and private sectors (Abdallah, 2020). The Saudi Arabian government rigorously enforces COVID-19 legislation to mitigate its transmission, imposing fines ranging from SAR 10,000 to SAR 100,000 on violators. Nonetheless, the kingdom experienced a resurgence of COVID-19 cases in early February 2021 (Yang et al., 2020).

The Saudi authorities observed an increase in psychiatric disorders and disseminated various health messages and advice to the population (Witteveen and Velthorst, 2020). As an illustration, the Saudi CDC issued a preventative manual for mental and social well-being that specifically addresses the prevention of stress

and panic and how to handle them during the epidemic (Pappa et al., 2020). Their focus was on the overall population, including guidance on childcare, senior care, and recommendations for healthcare providers and health facility managers. The National Centre for Mental Health Promotion (Khan, 2021) advocated for a toll-free counseling center staffed by mental health experts to offer assistance during the pandemic. Additionally, they disseminated health messages containing psychological advice for coping with the lockdown, including strategies for enhancing resilience and managing feelings of loneliness and isolation, particularly among elderly individuals and those with special needs (Khan, Alhathal, et al., 2023). King Faisal Specialist Hospital and Research Center has taken action by disseminating educational information to the public regarding mental health. Specifically, they have utilized social media platforms to provide guidance on coping with stress and anxiety (Arshad Khan and Alhumoudi, 2022).

The purpose of this research was to examine the elements that contributed to the emotional distress that Saudi Arabian workers felt during the COVID-19 pandemic. To effectively address the psychological distress in Saudi Arabia (Khan and MINHAJ, 2022), it is crucial for health practitioners to have a clear awareness of the current situation. By gaining this knowledge, they will be able to launch treatment and safeguarding programs that target the mental health of vulnerable groups more effectively (Mcnamara et al., 2021).

Here is how the study is organized: portion 1 is an overview portion, and Section 2 is an overview of the literature, research gap, and research questions. Section 3 outlines the goals of the study, section 4 explains the research approach, and section 5 offers a thorough explanation of the study's outcomes and findings. The text This section provides a description of Section 6, which discusses the paper. It also includes a discussion of Section 7, which focuses on the practical implications of the research. Additionally, Section 8 is dedicated to the conclusion of the paper. Finally, in Section 9, we discuss the research's limitations and provide suggestions for additional research (Haider et al., 2024).

2. Review of literature

The COVID-19 pandemic is a distressing occurrence. Individuals who have undergone such an occurrence are susceptible to developing symptoms of Schizophrenia disorders and detrimental psychological conditions (syed mohd minhaj and Altaf khan, n.d.). While the pandemic was rolling, a number of issues related to psychological well-being such as feelings of sadness or anxiety, psychological discomfort, and sleeplessness, increased, according to a meta-analysis and thorough review. These symptoms were present at prevalence rates of 31.4%, 31.9%, 41.1%, and 37.9% overall (Horizon et al., 2020). In addition, it was shown that the population categories hit worst by the pandemic were those in quarantine, healthcare workers, people with chronic diseases already, and COVID-19 patients (Golechha, 2020). This decline was observed to be more pronounced in certain sociodemographic cohorts compared to others. Instances such as being female, having a younger age, belonging to the Asian ethnicity, being in metropolitan areas,

living in low-income households, or not having a partner were associated with worse levels of mental health compared to other groups (Simonsen et al., 1995). The incidence of depression increased twofold spread of the pandemic virus compared to the preceding period, according to a research done in the US. It was also shown that people with lesser incomes and those experiencing job loss were more likely to suffer from indicators of depression. Concurrently, a study conducted in Saudi Arabia reported comparable results compared to the period prior to it (Khan and MINHAJ, 2021). According to the research, the rate of depression during the COVID-19 pandemic in 2020 was 21.4%, a 71.2% increase from 12.5% in 2018 (Khan, Alhumoudi, et al., 2024).

A person's quality of life is their view of their current situation in connection to their cultural and value systems, as well as their aspirations, deadlines, worries, and objectives in life, according to the WHO. This all-encompassing idea is intricately impacted by a person's physiological well-being, mental health, personal views, social connections, and the way they interact with prominent aspects of their surroundings. Among the Chinese medical staff, at least 20% experienced depressive disorders and anxiety due to the pandemic. Staff members other than female health workers and nurses have lower rates. Nearly 40% of HWs had trouble sleeping or sleeplessness. Among the most common reported mental health difficulties were those affecting women and those working on the front lines?

Stress levels have reportedly risen as a result of the worldwide implementation of stringent preventative rules, which affects individual's well-being globally. Perceiving a threat that causes one to feel uneasy, emotionally tight, and unable to cope is one definition of stress. Researchers in Saudi Arabia found that people were quite anxious and stressed out in the first few months of the outbreak. The news coverage of the virus's severity and contagiousness, the unknown length of the quarantine period, and disruptions to social and personal care routines are additional sources of stress, according to an American study (Khan, Husain, et al., 2024).

Several research examining the incidence of mental health issues prior to the COVID-19 outbreak in Saudi Arabia have been discovered (syed mohd minhaj and Altaf khan, n.d.). The frequency of sleeplessness among university students was 19.3%, according to one study carried out among students at Jazan University (Mohammed Athar Ali et al., 2023). Separate research with dermatology patients found that 12.6% had depressive symptoms, 22.1% had anxious symptoms, and 7.5% had stress symptoms. In addition, it was shown that among people with type 2 diabetes, 33.8% had depression, 38.3% anxiety, and 25.5% stress symptoms (Minhaj et al., 2024). There are a lot of people that are younger than 65. There have been 336,004 confirmed cases of COVID-19 in Saudi Arabia as of 28 September 2020. There were 11,752 people living in the Jazan region when that happened (Elhessewi et al., 2021). Research on the frequency of mental health issues like as sadness, worry, and stress in Saudi Arabians during the COVID-19 pandemic is limited. Among those who participated in the study, Twenty-four percent experienced symptoms of anxiety, twenty-three percent of stress, and thirty-eight percent of moderate-to-severe depression (Okpua et al., 2021). A different study found that among the individuals, 28.9% suffered from depression, 16.4%

from anxiety, and 17.8% from stress. Both studies indicated that people working in the medical field, especially women, were at a higher risk of having these negative side effects (McBride et al., 2021). Depressive symptoms were reported by 26% of those surveyed in Jazan city. This negative symptom was also found to be associated with chronic diseases and being female, according to the study (Minhaj et al., 2024).

Various research conducted in diverse geographical regions have consistently demonstrated a detrimental psychological effect of these situations. A study examining the adverse effects on mental health caused by confinement during the COVID-19 epidemic in China revealed a notable disparity between individuals who were detained and those who were not (Sarsak, 2022). The confined group had a further trauma-related mental health issues, sleep issues, and dread compared to the non-quarantined group. Furthermore, a case-control study demonstrated that those who were quarantined experienced a higher incidence of complaints associated with insomnia, anxiety, and depression in contrast to the entire population (Alghamdy et al., 2022). Additionally, younger age, poorer income, and being unmarried were identified as risk factors linked to a more severe mental illness crisis. Notably, Saudi Arabia also had a greater occurrence of feeling down, anxious, or stressed out while in the confinement facility (Alfai et al., 2022). Three studies revealed that the prevalence rates for these symptoms ranged from 32.7% to 63.6%, 21.5% to 40.5%, and 25.7% to 55.5%, respectively. The range is from 24 to 26. One study found that 42.1% of those who were placed in quarantine experienced sleeplessness. All of this research demonstrated that the female gender exhibited a greater susceptibility to unpleasant psychological symptoms compared to males (Alshammari et al., 2023).

A study indicates that Gulf workers experienced wage reductions ranging from 25% to 50%, particularly in sectors like those in the teaching, hotel, and service sectors. Additionally, foreign workers in Dubai saw their income decrease by 83%, while those in Jeddah experienced a 35% reduction (Al Sulais et al., 2020). In the first wave of the pandemic, remittances to home nations fell by 44%, and industry closures were the main culprits in these decreases. Because of the better healthcare and emergency services in Saudi Arabia, many Filipinos, Pakistanis, and Egyptians who have made Saudi Arabia their home are hesitant to return to their home countries, where they face higher unemployment, lower wages, and subpar medical facilities. Out of 117 people surveyed, 89.7 percent of migrants think that gulf cities have handled the pandemic well (Banjar and Alfaleh, 2021). Furthermore, 29.9% of respondents said that local views towards migrants changed for the better and 17% said that they changed for the worse during the epidemic (Khan et al., 2021). 53% of respondents said that local attitudes towards migrants stayed the same (Sarsak, 2022).

2.1. Research gap

According to the available literature review, there are researches investigating at the economic effects of COVID-19 on the wider population, migrant workers, economy etc. Economic implications of COVID-19 on Saudi workers are rarely studied, which is a research vacuum that this project aims to solve. A study on the emotional effect of the COVID-19 pandemic on Saudi employees is sparse compared

to that on the overall Saudi population. This is the void the present study tries to fill. Based on research gap following question arises.

2.2. Research questions

a. Does the spread of covid-19 pandemic resulted in the earnings losses of the workers?
b. Is there any evidence that the spread of the Corona virus has a psychological impact on the workforce?
c. What are the effective measures that government has taken for the welfare of Saudi workers?
d. What are the differences in the perception of the workers to on management of covid-19 by Saudi government?

2.3. Hypothesis

The study will test the following null hypothesis.

Earnings of the workers pre and post pandemic period

Several companies in Saudi Arabia downsized their salary expenditures and even offered furloughs to employees during the early stage of the COVID crisis to ensure continuity in the activities of the firms. The most affected were the sectors that had experienced more decisive restraining measures and subsequent economic recession, in particular. There were various actions taken by the government of Saudi Arabia to assist the companies as well as their workers in connection with the outbreak. Such programs included unemployment benefits, suspensions of debts, and wage subsidies. To certain persons, these initiatives provide assistance towards cushioning the economic shock to be experienced. Employment and the prospects of wage increases were some of the ways that the gradual and steady rebuilding of the country's economy after the pandemic took shape. Part of this recovery was facilitated by state supported mechanisms, which tried to change the structure of the economy and attract private investments.

(1) There is no loss in the earnings of the workers in pre and post pandemic period.

Psychological impact on workers during covid-19 in Saudi Arabia.

Employees are encountering heightened stress and anxiety due to worries related to the pandemic, job security, and financial stability. The mental health challenges have been intensified by causes like fear of infection, feelings of isolation, and potential financial difficulties. The potential consequences of contracting the virus have generated significant concern and heightened susceptibility among healthcare professionals. A considerable number of employees are concerned about potential job loss due to the economic downturn. The fatalities resulting from the COVID-19 pandemic have rendered numerous individuals feeling bereaved, despondent, and potentially experiencing post-traumatic stress disorder (PTSD). The collapse of social networks and support systems may exacerbate these mental health difficulties. The pandemic's excessive demands have led to burnout and exhaustion among healthcare professionals and other frontline workers. Their mental health may deteriorate due to the emotional and physical demands of their occupation.

(2) There is no psychological impact on the workers during covid-19 pandemic.

Effective policy for the workers of Saudi in covid-19.

It is clear that Saudi Arabia's Ministry of Health initiated an appropriate public awareness campaign to raise awareness about the need of following proper hygiene practices in order to stop the spread of the coronavirus. When the pandemic first broke out, the government began providing the general public with protective gear like face masks, hand sanitiser, and gloves But the general public's mental and physical health have also taken an important hit due to the pandemic. Health institutions and related authorities adhere to specific criteria in order to make appropriate judgements on public health management during a pandemic, as stated by. For example, the Tawakalna Application is one example of how the Saudi government has used technology to make health information more available to the general public.

(3) There is no effective policy adopted by Saudi government in the welfare of the workers.

(4) There is no difference in the perception of workers according their age, occupation and country of origin.

(5) There is no difference in the mental health of the worker in different age group and different occupations.

4. Objectives of the study

The objectives of this project will be:

a. To examine the economic impact of Covid 19 Pandemic on Saudi workers.
b. Analyze the mental toll that the COVID-19 pandemic has taken on Saudi employees.
c. To examine various measures by Saudi Government for welfare of Saudi workers during Covid 19.
d. To examine the perception of Saudi workers on management of Covid- 19 by Saudi Government.

5. Research methodology

This study utilizes a quantitative methodology and depends on a sample-survey approach. Information was gathered from January to May 2024 as part of this cross-sectional investigation via an online survey. The gathering of primary data was carried out by utilizing a standardized questionnaire distributed via Google Forms and direct contact with workers. The study included Saudi Arabian laborers in Saudi Arabia, selected by non-probability snowball sampling techniques.

5.1. Data collection

Email, WhatsApp, Twitter, and individual networks were used to disseminate the online and offline survey forms. We contacted the Saudi workers personally and also used Google forms to distribute the poll. The survey was filled out by every participant who was willing to take part in the study. There was no following follow-up after the first survey administration. Arabic and English versions of this survey were both developed. The survey consisted of 28 closed-ended questions, requiring a

total completion time of 5 to 10 minutes. The overview poll comprised three segments. Section 1 collected data regarding the respondent's profile, include thirteen elements including: identity, age, gender, religion, place of residence, level of education, profession, length of employment, monthly income, remittances, dependents, and additional sources of family income. The second component comprises a series of 15 inquiries that evaluate the psychological repercussions, including despair, anxiety, and tension, encountered by folks throughout the lockdown time resulting from the outbreak. Information was collected from a total of 283 individuals who are employed in Saudi Arabia and are situated in various regions (states) within the Kingdom of Saudi Arabia. Data collection occurred from January to May 2024.

5.2. Data analysis

This article exclusively features a sample of Saudi workers who were employed within the borders of Saudi Arabia. The government's management of COVID-19 and the psychological impact of the epidemic were assessed using a five-point Likert scale. We utilized the SmartPLS and SPSS version 25 for data analysis. The data analysis included both descriptive and inferential statistics. Three groups were analyzed using the Kruskal-Wallis test for variations in anxiousness, depression, and stress symptoms: medical staff, health care professionals under restrictions, and non-healthcare workers. For statistical significance, a *p*-value less than 0.05 were used.

6. Finding and analysis's

The assessment comprises a total of 29 questions, which are divided into two distinct sections. One half of the study focused on the demographic factors of the respondents, while the other section was separated into 6 indicators representing different constructs: earnings of the workers, psychological impact, effective policy adopted, pre and post pandemic period, workers during covid-19 pandemic, and welfare of the workers. In order to evaluate the data collected from participants, a simplified method known as a "rating scale" was employed.

6.1. Background information of the respondents

The people who filled out the surveys are shown in this section as a sample. In **Table 1** we can see a summary of the replies according to the study's selected demographic variables. Primary sources provide the foundation of the data that is offered here.

Information such as gender, age, level of education, employment status, monthly income, remittances, and number of dependents are included in the socioeconomic background of the surveyed migrants, which is shown in **Table 1**. According to the numbers, men made up the vast majority of the sample at 74.5%, with women making up just 25.5% of the total.

Table 1. Baseline data of the participants (N = 283).

Basis	Categories	*F*	%
Gender	Male	211	74.5
	Female	72	25.5
Age Group	20–30 years	84	29.6
	31–40 years	102	36
	41–50 years	65	22.9
	51–60 years	32	11.3
Educational Qualification	Not Educated	32	11.3
	High School	41	14.48
	Intermediate	29	10.24
	Graduation	89	31.44
	Post-Graduation	72	25.54
	Doctorate	20	7
Occupational Status	Professionals	69	24.38
	Technicians	52	18.37
	Clerical Support Workers	31	10.95
	Service and Sales Workers	10	3.5
	Elementary Occupation	86	30.38
	Plant and Machine Operator	35	12.36
Monthly Salary (in SAR)	Below 2000 SAR	64	22.61
	2000–5000 SAR	98	34.62
	5000–8000 SAR	72	25.44
	8000–10,000 SAR	33	11.66
	Above 10,000 SAR	16	5.65
Remittances (in SAR)	Below 1000 SAR	61	21.55
	1000–3000 SAR	76	26.85
	3000–5000 SAR	63	22.26
	5000–10,000 SAR	48	16.96
	Above 10,000 SAR	35	12.36
Number of Dependents	2	51	18.02
	3	78	27.56
	4	82	28.97
	5	48	16.96
	More than 5	24	8.48

An overwhelming majority of respondents (11.3%) were between the ages of 51 and 60, the poll found. On top of that, 32.9% of respondents were in the age bracket of 41–50, and 36.0% were in the 31–40 age bracket. In addition, 29.6% of the people polled were between the ages of 20 and 30. Among those who finished the studies, 11.3% said they had no college degree. 14.48% of the participants qualified up-to to the High School, 10.24% of the participants qualified up-to to the Intermediate,

31.44% of the participants identified themselves as Graduate, 25.54% as Postgraduate (P.G), and 7 percent as individuals with a Doctorate degree.

The people who took part are divided into four separate groups based on their job status:

Individuals: employed by the Professionals (24.38%) individuals employed in the Technicians (18.37%), individuals engaged in Clerical Support Workers (10.95%), individuals engaged in Service and Sales Workers (3.5%), individuals engaged in Elementary Occupation (3.5%). Additionally, 17.38% are plant and machine operators. A quarter of the participants have monthly salaries below SAR 2000, a third have incomes between SAR 2000 and 5000, and a quarter have incomes between SAR 5000 and 8000, according to the results., while 11.66 percent have incomes ranging from SAR 8000–10,000, and 5.65 percent have incomes above SAR 10,000. The number of family members dependent on the remittances by the migrants varied: 8.48% had more than 5 family members, 16.96% had 5 family members, 28.97% had 4 family members, 27.56% had 3 family members, and 18.02% had 3 family members.

Table 2. Mean, SD and loadings of constructs.

Item	Mean	SD	Loading
The transportation services offered by the government of India	2.67	0.57	0.810
Assistance extended by the Indian Embassy in Saudi Arabia	3.43	0.67	0.792
Public healthcare system in Saudi Arabia	3.41	0.63	0.781
The Saudi authorities supplied food and other necessities during the lockdown.	3.01	0.70	0.721
Information related to protection from corona provided by Saudi government	3.11	0.68	0.651
Access of necessity items provided by Saudi government	3.82	0.65	0.850
Possibility of sending funds to India under shutdown	3.32	0.66	0.911
The Saudi government has implemented safety measures.	4.18	0.87	0.751
Situation in Saudi Arabia during the lockdown	3.61	0.69	0.783
Have you experienced feelings of nervousness, anxiety, or restlessness?	3.60	0.84	0.921
Have you felt depressed?	3.76	0.76	0.704
Have you had a sense of optimism toward the future?	3.29	0.80	0.786
I am experiencing insomnia due to the coronavirus.	3.18	0.73	0.701
I have experienced challenges in maintaining focus due to the impact of the coronavirus.	3.92	0.61	0.806

According to the findings presented in **Table 2**, it can be inferred that a favourable reaction is indicated when the average values of all the elements inside a given construct above a threshold of 3 in earnings of the workers, psychological impact, effective policy adopted, pre and post pandemic period, workers during covid-19 pandemic, and welfare of the workers. The researcher used a five-point "Likert scale," with values ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). Each construct contains items that have factor loadings exceeding the designated threshold of 0.70. Each statement provides a thorough explanation of its own theoretically postulated construct.

The latent constructs utilized in the investigation are depicted by the circles in **Figure 1**, which include earnings of the workers, psychological impact, effective

policy adopted, pre and post pandemic period, workers during covid-19 pandemic, and welfare of the workers. There are three statement codes measuring earnings of the workers, three statement codes measuring psychological impact, three statement codes measuring effective policy adopted, three statement codes measuring pre and post pandemic period, three codes measuring workers during covid-19 pandemic, and two statement codes measuring welfare of the workers. All of which are shown near the arrows pointing to the respective items/constructs. The factor loading values are presented in close proximity to the respective arrows for each item or construction.

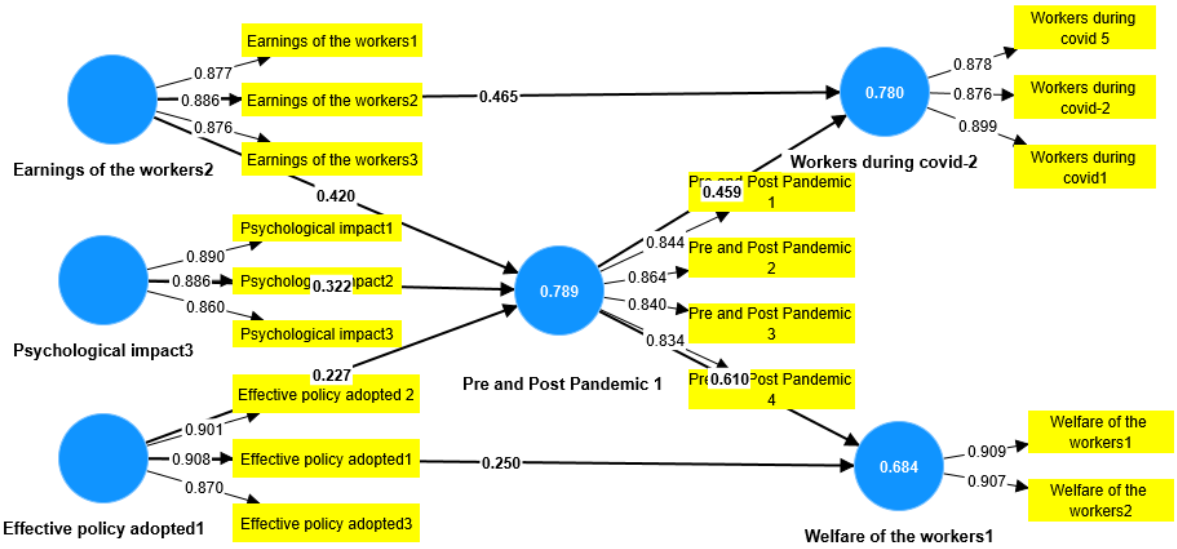

Figure 1. Measurement model from SmartPLS 3.0.

Table 3. Convergent validity result.

Factor	Cronbach's Alpha	Rho-*A*	Composite Reliability (C.R)	Average Variance Explain (A. V. E)
Earnings of the workers	0.712	0.702	0.789	0.675
Psychological impact	0.851	0.837	0.892	0.711
Effective policy adopted	0.771	0.769	0.881	0.653
Pre and Post Pandemic period	0.760	0.756	0.881	0.661
Workers during covid-19 pandemic	0.844	0.831	0.921	0.678
Welfare of the workers	0.761	0.753	0.861	0.630

This metric is used in statistics to evaluate how well a set of elements placed into a latent concept holds together. The reliability of the composite is determined by adding up the variances of each component and dividing it by the overall variance of the composite. This yields the overall variance of the sum divided by the variation of the given factor. After that, we determine the average variance by using a rough estimate of the scale's expected indication reliability.

In statistics, the average variance extracted (AVE) is a metric that shows the proportion of variance that a construct captures compared to the proportion that is due to measurement error.

As shown in **Table 3**, all five constructs met the required standards limit, as their "Composite Reliability" (C.R) values were greater than 0.7 and their "Average Variance Extracted" (AVE) values were greater than 0.5. Internal consistency was confirmed by "Cronbach's Alpha and rho-a" values that were significantly greater than 0.7 (Khan and MINHAJ, 2021). As a result, the concept of "convergent validity" was developed (Khan and MINHAJ, 2021), and (Khanifar et al., 2012).

6.2. Discriminant validity result

The discriminant validity was checked by applying the "Fornell-Larcker and cross-loading criteria". Discriminant validity specifies "the extent to which the measure is adequately distinguishable from related constructs within the nomological net".

Table 4. Discriminant validity–Fornell-Larcker criterion.

Factors	Earning of the workers	Psychological impact	Effective policy	Pre and Post Pandemic period	Workers during covid-19 pandemic	Welfare of the worker
Earnings of the workers	0.872					
Psychological impact	0.619	0.821				
Effective policy adopted	0.760	0.711	0.811			
Pre and Post Pandemic period	0.707	0.680	0.739	0.868		
Workers during covid-19 pandemic	0.655	0.722	0.765	0.608	0.831	
Welfare of the workers	0.662	0.711	0.633	0.732	0.739	0.851

In order to compute the "Fornell-Larcker" criterion, it is necessary to obtain the square roots of the "Average Variance Extracted" values for the relevant constructs, as indicated in **Table 4**. In summary, the values indicate that financial knowledge and investment decision exhibited greater correlations compared to the correlations between each construct and the other constructs earnings of the workers (0.872), psychological impact (0.821), effective policy adopted (0.811), pre and post pandemic period (0.868), workers during covid-19 pandemic (0.831), and welfare of the workers (0.851). The establishment of discriminant validity was accomplished through the use of the "Fornell-Larcker" criterion (Khan and MINHAJ, 2021).

Table 5. Discriminant validity–loading and cross-loading criterion.

Factor	Earning of the workers	Psychological impact	Effective policy	Pre and Post Pandemic period	Workers during covid-19 pandemic	Welfare of the worker
Earning1	0.781	0.501	0.533	0.615	0.630	0.578
Earning2	0.732	0.612	0.660	0.583	0.578	0.611
Earning3	0.765	0.607	0.511	0.617	0.626	0.570
Psychological1	0.798	0.811	0.643	0.711	0.654	0.688
Psychological2	0.732	0.840	0.690	0.787	0.690	0.711
Psychological3	0.657	0.789	0.609	0.766	0.701	0.733
Policy1	0.692	0.660	0.788	0.608	0.732	0.719
Policy2	0.700	0.744	0.843	0.611	0.754	0.744
Policy3	0.520	0.609	0.791	0.605	0.689	0.710

Table 5. (*Continued*).

Factor	Earning of the workers	Psychological impact	Effective policy	Pre and Post Pandemic period	Workers during covid-19 pandemic	Welfare of the worker
Pre and Post Pandemic1	0.661	0.771	0.743	0.833	0.644	0.770
Pre and Post Pandemic2	0.710	0.629	0.760	0.808	0.611	0.753
Pre and Post Pandemic3	0.732	0.721	0.611	0.790	0.567	0.654
Pre and Post Pandemic4	0.600	0.505	0.559	0.805	0.603	0.643
Workers during covid1	0.555	0.589	0.610	0.651	0.790	0.659
Workers during covid2	0.703	0.567	0.595	0.690	0.810	0.564
Workers during covid3	0.659	0.640	0.665	0.701	0.832	0.642
Welfare1	0.659	0.632	0.578	0.543	0.549	0.864
Welfare2	0.569	0.549	0.643	0.632	0.509	0.811

Table 5 demonstrates that the cross-loading criterion reveals that all constructions exhibited loadings that were higher than the cross-loadings with other constructs across the columns. The cross-loading criterion was utilized to establish discriminant validity (Henseler et al., 2015).

6.3. Structural equation model

In the process of analyzing the structural model, it is imperative to account for the presence of multicollinearity, as this factor can significantly impact the reliability of the obtained results. The study conducted by (Akinwande et al., 2015) revealed that the "Variance Inflation Factor" (VIF) values ranged from 1.493 to 2.257, suggesting the absence of multicollinearity in the model. To assess the relevance of the hypothesis, the structural model was subsequently subjected to verification using the bootstrapping method, with 5000 resamples.

It is clear from the given PLS-SEM model that every path exhibits statistical importance at a significance level of 5% or above whenever the *t*-values exceed the set threshold of 1.96 for regression weights, as shown in **Figure 2**. Therefore, the predicted path parameter is meaningful. According to **Table 6**, the structural equation modeling (SEM) model was used.

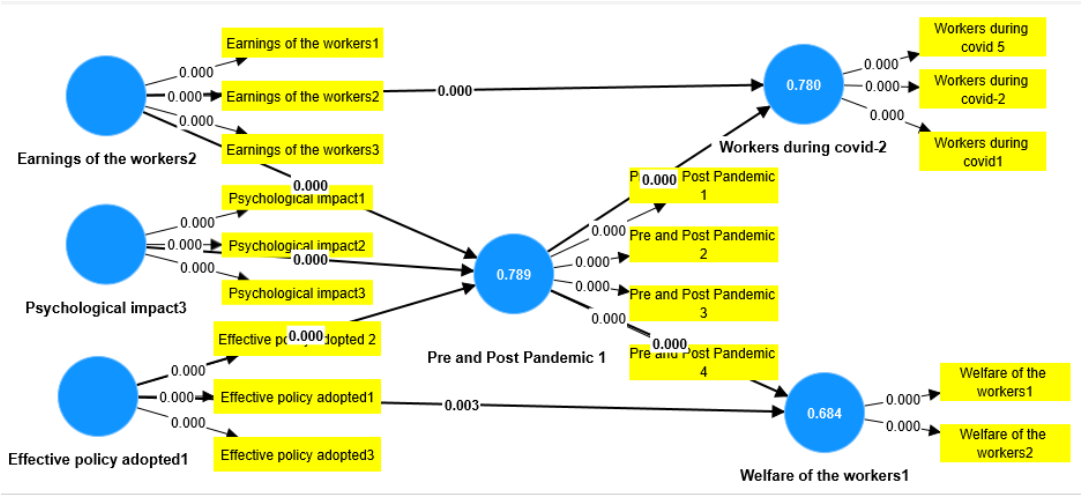

Figure 2. Structural equation model (SEM).

Table 6. Direct impact of earnings of the workers on pre and post pandemic period and workers during covid-19 pandemic.

Hypothesis	Path	B	*t*-value	*p*-value	Result
H01	Earnings of the workers → Pre and Post Pandemic period	0.490	4.112	$P \leq 0.001$	Supported
H02	Earnings of the workers → Workers during covid-19 pandemic	0.343	2.769	$P \leq 0.001$	Supported

Table 6 shows that hypotheses Ho1 and H02 were supported. Earnings of the workers is directly and positively related to pre and post pandemic period ($\beta = 0.490$, t-value = 4.112, and $p \leq 0.001$). Earnings of the workers is also directly and positively related to workers during covid-19 pandemic ($\beta = 0.343$, t-value = 2.769, and $p \leq 0.001$).

Table 7. Direct impact of effective policy adopted on pre and post pandemic period and welfare of the workers.

Hypothesis	Path	B	*t*-value	*p*-value	Result
H03	Effective policy adopted → Welfare of the workers	0.376	2.90	$P \leq 0.001$	Supported
H04	Effective policy adopted → Pre and Post Pandemic period	0.452	4.431	$P \leq 0.001$	Supported

Table 7 shows that hypotheses H03, and H04 were supported. Effective policy adopted is directly and positively related to welfare of the workers ($\beta = 0.376$, t-value = 2.90, and $p \leq 0.001$). Effective policy adopted is also directly and positively related to pre and post pandemic period ($\beta = 0.452$, t-value = 4.931, and $p \leq 0.001$).

Table 8. Direct impact of psychological impact on workers during covid-19 pandemic.

Hypothesis	Path	B	*t*-value	*p*-value	Result
H05	Psychological impact → Workers during covid-19 pandemic	0.363	4.589	$P \leq 0.001$	Supported

Table 8 shows that hypotheses H05 was supported. Psychological impact is directly and positively related to Workers during covid-19 pandemic ($\beta = 0.363$, t-value = 4.589, and $p \leq 0.001$).

Table 9. Mediating or indirect impact of pre and post pandemic period on earnings of the workers and workers during covid-19 pandemic.

Hypothesis	Path	B	*t*-value	*p*-value	Result
H06	Earnings of the workers → Pre and Post Pandemic period → Workers during covid-19 pandemic	0.243	2.478	$P \leq 0.005$	Supported

Table 9 shows that hypotheses H06 was supported. In terms of pre and post pandemic period, Earnings of the workers have a mediated or indirect effect on workers during covid-19 pandemic ($\beta = 0.243$; t-value = 2.478; $p < 0.005$).

Table 10. Mediating or indirect impact of pre and post pandemic period on effective policy adopted and welfare of the workers.

Hypothesis	Path	B	*t*-value	*p*-value	Result
H07	Effective policy adopted → Pre and Post Pandemic period → Welfare of the workers	0.191	2.531	$P \leq 0.005$	Supported

Table 10 shows that hypotheses H06 was supported. In the case of Pre and Post Pandemic period, Effective policy adopted have a mediated or indirect effect on the Welfare of the workers ($\beta = 0.191$, t-value = 2.531, and $p < 0.005$).

Table 11. Whitney *U* test and kruskal-wallis h test—demographic profile.

Demographic profile		**Mean**		***P*-value**	
		Perception of Workers	**Mental Health**	**Perception of Workers**	**Mental Health**
Gender	Male	88.77	95.08	$P \leq 0.005$	$P \leq 0.005$
	Female	86.90	77.88		
Age Group	20–30	90.21	94.64	$P \leq 0.079$	$P \leq 0.060$
	31–40	82.55	77.36		
	41–50	87.48	95.40		
	51–60	97.30	86.55		
Origin	Uttar Pradesh	93.09	87.82	$P \leq 0.005$	$P \leq 0.005$
	Delhi	71.57	94.70		
	Bihar	98.58	80.88		
	Madhya Pradesh	87.84	92.52		
	Kerala	86.42	89.42		
	Others	90.57	78.38		
Occupational Status	Professionals	84.21	92.06	$P \leq 0.005$	$P \leq 0.074$
	Technicians	100.37	82.44		
	Clerical Support Workers	89.97	79.03		
	Service and Sales Workers	83.70	83.26		
	Elementary Occupation	94.60	98.49		
	Plant and Machine Operator	81.86	83.75		

Table 11 was used to determine the statistical disparity between demographic characteristics using the "Whitney U Test" and the "Kruskal-Wallis H Test. In case of gender there were significance difference of Perception of Workers, and Mental Health ($P \leq 0.005$).

In case of age group there were no significance difference of Perception of Workers, and Mental Health. In case of Origin there were significance difference of Perception of Workers, and Mental Health ($P \leq 0.005$). In case of Occupational Status there were significance difference of Perception of Workers, but no significance difference of Mental Health with respect of Occupational Status.

7. Discussion

Typically, when examining the economic hardships faced by individual workers during the pandemic, the analysis primarily concentrates on immediate economic difficulties, such as uncertainty regarding personal income, financial struggles, reduced income, and other financial losses. Additionally, it also considers the anticipated long-term financial consequences. There is some evidence that the mental health impacts related to financial or occupational challenges caused by the pandemic are connected with specific socioeconomic factors, such as gender, ethnic

origin, age, family size, occupation, and wealth (Alsaif et al., 2022). Only one factor determines this: age. Research studies have found that the younger population is more prone to experiencing elevated anxiety and stressful situations levels as a result of the pandemic and the associated intervention efforts, compared to older individuals. Gender is an additional factor. Research has indicated that women exhibit a greater propensity for experiencing experiencing high levels of anxiety and tension in response to possible health problems (Mohsin et al., 2021). Nevertheless, male employees experience a higher level of psychological discomfort compared to female employees when faced with the prospect of job loss and the economic worry associated with it.

In order to undertake a representative poll of Saudi workers, this study was pioneering among studies in the GCC area in KSA during the COVID-19 pandemic, and it measured the frequency and severity of Psychiatric suffering (Al Zahrani et al., 2021). Using a variety of measuring scales, more studies have looked into the behavioral consequences of COVID-19 on Saudi Arabian workers and the general population. The focus of our research was to examine the level of psychological anguish experienced by workers in Saudi Arabia. Moreover, although our findings align with global results, Saudi Arabia exhibits distinct cultural characteristics in its psychological environment. It is plausible that religious and cultural convictions influenced the responses of Saudi workers to the survey (Altwaijri et al., 2022).

The location of the research was Saudi Arabia, a Muslim-majority nation with comparable cultural and religious traits, revealed that Arab participants in surveys tend to be cautious about the trustworthiness and motives of the surveys (Titi et al., 2022). On the other hand, the attitude of non-Arab participants towards surveys is influenced by their willingness to participate and their perception of the survey's cognitive and time demands. Furthermore, studies have shown that many Arab nations are likely to engage in preference fabrication (Alharbi, 2021). Both active and uninvolved Saudi personnel in the treatment of COVID-19. A significant number of patients reported experiencing psychological distress ranging from modest through moderate to extreme. A higher proportion of female Saudi Arabian workers reported severe emotional distress, older, employed in the healthcare industry, had close personal contact with COVID-19 patients, had a close relative or friend impacted by the virus, or were themselves infected with the virus (Alkhamshi et al., 2021).

Consistent with earlier studies' findings, Saudi workers in KSA had a substantially higher frequency of mild-moderate and severe psychological discomfort. According to earlier studies, Saudi women are more prone to experiencing a rise in psychological discomfort compared to men, which aligns with the findings of other studies (Almalki et al., 2021). Individuals in the older age groups had a reduced likelihood of experiencing elevated distress. In a study conducted on the general population, it was found that younger persons who engage more with social media may be exposed to more distressing stimuli. At the same time, some studies stress the need of taking care of the mental health of the elderly and those in their twilight years, as they are at a increased likelihood of catching and have a higher death rate compared to their peers. The results corroborated previous

research showing that Saudi employees suffer from anxiety for their own and their families' health. Because they feel threatened, their anxiety levels rise (Rafique et al., 2022). The psychological effects on family members who have also been impacted and the possibility of harm to one's own loved ones should be the primary goals of any interventions designed to help Saudi workers who have been impacted by the pandemic cope with these issues.

8. Practical implications

The results of our study emphasize the importance of implementing psychological therapeutic programs to specifically target the emotional suffering that Saudi workers in KSA are facing. These findings align with previous research conducted on a worldwide scale. In addition, policymakers and strategic decision-makers at the national level can use our findings to better prepare for major calamities like the COVID-19 pandemic by considering the identified psychological risk factors. To do this, recovery programs and mental health treatments designed for Saudi workers should be developed and put into place in a way that is both accessible and affordable. Digital support groups, psychotherapy, web-based tools (such as psycho-education), smartphone applications, and mental health helplines are all examples of e-technology services that might alleviate Saudi workers' worries. The report also suggests the urgent implementation of awareness campaigns using social networking sites to diagnose mental problems. The government should provide provisions for the availability of counselors and psychiatrists who offer complimentary consultations and are easily accessible.

Theoretical implications

A decrease in the likelihood of behavioural health issues and an increase in employee engagement and dedication can be achieved through the Saudi government's support of employee wellness programs. As a crucial competency, resilience was found to be significantly more useful in mitigating the negative effects of COVID-19 in the study compared to low- and moderate-resilience participants. At regular intervals, you should review and update your action plans and preventative actions. As part of the COVID-19 workplace growth, monitoring, and updating process, employees and their representatives should be consulted.

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9. Conclusion

This study set out to examine how the Saudi workers living in Saudi Arabia fared mentally during the pandemic's lockdown phase. A quantitative methodology was used to perform the study, and a sample survey approach was used to analyze

the findings. Using a structured questionnaire and the non-probability snowball sampling technique, the researchers collected 283 samples of migrant workers. The current study reveals that the psychological well-being of Saudi workers was a cause for concern during the pandemic. The determinants of mental well-being included factors such as age, educational attainment, number of dependents, place of residence, and other sources of income. It was intriguing to note that the mental health of Saudi workers deteriorated as they grew older. Furthermore, media reports and research indicate that elderly individuals are more prone to experiencing higher mortality rates and testing positive for COVID-19.

Nevertheless, it proved challenging to ascertain the impact of educational attainment on the mental well-being of Saudi laborers. It is a commonly documented phenomenon that the level of awareness regarding a pandemic directly correlates with the intensity of fear experienced towards it. In addition, the number of individuals who rely on you also has an impact on your mental well-being; the greater the number of dependents, the more detrimental it is to your mental health. The mental well-being of Saudi workers is not just determined by the current situation in their home country. The results of this study can help in the creation of programs and communities that will assist migrant workers with their state of mind. Their level of pandemic knowledge and the number of people who rely on them are two factors that significantly impact their mental health.

Economic hardship and employment distress are two pathways that lead to a decrease in persons' mental well-being, and this article conceptualizes both of them. The suggested theoretical framework clarifies how the public health response to the impacted people's mental health and how they handled the aftermath. The existing literature presents evidence that supports the notion that the COVID-19 pandemic and the methods taken to address it lead to heightened individual economic uncertainty and employment insecurity. As a result, this triggers mental health issues and coping practices. This route, which most studies agree with, starts at the beginning of the epidemic, causes economic and employment hardship, which in turn causes people's mental health to decline and their behavior to change.

10. Limitations

This study has certain constraints and the conclusions should be understood within the context of these limitations. The primary constraints of the study lie in its exclusive emphasis on Saudi laborers in Saudi Arabia, with a sample size of only 283 individuals, which is rather small. Initially, the survey was based on self-reports and was conducted by Saudi workers at a specific moment in time. It is necessary to conduct longitudinal studies that utilize several standardized measures in order to assess the financial and mental toll that the epidemic has taken on Saudi employees. Given the frequent occurrence of significant changes in the lives of Saudi workers, it is essential to continuously assess their mental health outcomes and give them high priority. This is necessary to guarantee the provision of high-quality care to Saudi workers. Furthermore, our findings are constrained to specific areas within the Kingdom of Saudi Arabia and cannot be extrapolated to other places that may have been impacted differently. Additional information regarding the work hours and

workload of Saudi workers could have offered more comprehensive insights into the anguish that is linked to it.

Future research

Legislators, health officials, and medical professionals must fully grasp how patients' fears about their health affect their actions. The methods of surveillance and risk mitigation for certain sectors or demographics should be the subject of future research. The government, service providers, and businesses can use this information to prioritize mental health support for certain groups and create more effective rehabilitation programs. The development of a multi-departmental management task force, the efficacy of risk communication with susceptible people, the assessment of pandemic threats, and further actions all necessitate additional study.

It is critical to prioritize the assessment of the psychological and people's physical and mental well-being when times are tough. It is also important to put assistance programs that target low-income people into action. When evaluating social protection measures or relief programs, future research should also consider both monetary and non-monetary types of aid. More study into staff support services that specifically target the delivery of mental wellness treatment is also required.

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