

Perception of Healthcare Workers on Psychological Effects and Coping Strategies of COVID-19 Pandemic in Ogun East Senatorial District, Nigeria

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ABSTRACT:- Several psychological problems among the general population including healthcare workers have causes and/or effects of covid-19. This study aimed at assessing the perceived psychological effects, mental well-being and coping strategies of covid-19 pandemics among healthcare workers in Ogun East Senatorial District of Ogun State, Nigeria. This study employed a descriptive cross-sectional survey, which was targeted among the 224 selected health workers using a self-developed questionnaire. A multi-stage sampling technique was employed to gather the data, and the collected data were analysed using descriptive and inferential statistical techniques. The findings of this study also revealed that 67.9% of respondents perceived that COVID-19 had a low impact on them, 20.1% perceived it as an average impact, and 12.1% of healthcare workers perceived high psychological effects. The results of this study also revealed that 37.5% of health workers had good mental health, 6.7% perceived to have average mental health, and 55.8% had poor mental health. The results further showed that 37.5% of health workers had good mental health, 6.7% perceived to have average mental health, and 55.8% had poor mental health. There was also a significant psychological impact of Covid-19 and the mental health well-being of health care workers ($\chi^2 = 35.8, p = 0.01$). The study concludes that government and hospital management should come up with policies and clinical strategies that help to reduce the psychological effect of any future occurrence of diseases.

Keywords: Strategies, COVID-19, Health Workers, Perception, Psychological Effects.

I. INTRODUCTION

All over the world, the period of coronavirus disease (COVID-19) was unforgettable in the lives of many nations and individuals due to its unprecedented effects. The coronavirus disease (COVID-19) was first identified in Wuhan, China in December 2019 and has since become a global health problem [1]. In March 2020, WHO declared Covid-19 as a pandemic [2]. About 2.99 million cases were been reported globally by the end of April 2020. It has been reported to have claimed more than 207,000 lives and over 876,000 people recovered from the disease. The spread from China in 2019 reaches more than 100 countries within three months of initial notification [3].

Being an international public health emergency that is considered as unprecedented in modern history, it causes several health and psychological problems among the general population [4] including the healthcare workers [5]. For example, poor patients' access to healthcare, shortage of resources (hospital beds, ventilators, oxygen, PPE), controversial treatment protocols and the economic burden of the pandemic exert a profound burden on the health system with the healthcare workers having a greater share of the burden psychologically. The consequences of diseases have revealed that lack of support in the workplace with consequent severe psychological symptoms [6]. For example, the study showed an increased long-term risk of developing post-traumatic stress disorder (PTSD) among medical staff during the 2015 Middle East Respiratory Syndrome (MERS) outbreak [7].

Medical professionals caring for patients who are afflicted by epidemiological emergencies like the Covid-19 pandemic have a substantial level of psychological unbalance, anxiety, and stress. The likelihood of panic episodes, a bad attitude at work, and an increase in patient aggressiveness have all been influenced by the fear of contracting the infection, spreading it to their families, and possibly losing their life [8]. There have been reports of psychiatric conditions such as sadness, anxiety, panic attacks, somatic complaints, delirium, PTSD, psychosis, and suicide [9].

In addition to making healthcare personnel more vulnerable to contracting the disease through touch, epidermic emergencies expose them to unanticipated workload increases in an uncertain and powerless

environment [10]. This increases the vulnerability of their close relatives and coworkers as well. More than 12000 doctors and nurses contracted Covid-19, and as of April 2020, 228 doctors and 26 nurses have passed away [11]. These critical conditions are exacerbated by the need of wearing personal protective equipment, which cause discomfort and difficulties in breathing.

Additionally, there is rising concern over how well-prepared the health systems in low- and middle-income nations are for the Covid-19 pandemic at the start of the virus's transmission. Personal protective equipment was scarce in hospitals, and protocols or treatments were not well established. As a result, many experts felt uneasy and unprepared to handle patients who had been exposed to the new virus.

Healthcare professionals had to deal with loneliness, stigmatization, and inflexible expectations as a result of the COVID-19 pandemic, which could result in a variety of emotional and psychological problems like rage, anxiety, insomnia, and stress due to the unpredictability of the epidemic [11].

Several studies have been conducted on covid-19 across the world. This study assesses the perceived psychological effects of covid-19 on health workers in Ogun State, Nigeria. This study is significant as it aids the government and hospital management to come up with policies and clinical strategies that help to reduce the psychological effects experience during this period, as well as help formulate strategies for subsequent unforeseen pandemics or epidemics.

II. MATERIALS AND METHODS

The study was conducted in four (4) selected healthcare institutions in Ogun East Senatorial District of Ogun State, Nigeria namely Olabisi Onabanjo University Teaching Hospital; Ogun State General Hospital, Omu-Ijebu; Ogun State General Hospital Ode-Lemo; and State Hospital Ikenne. Ogun state is located in the South Western part of Nigeria with a total land area of 16, 980.55km² and a population of 3,751,140 [12]. This study employed a descriptive cross-sectional survey, which targeted only the healthcare workers who were 18 years and above in the four (4) selected healthcare institutions in Ogun East Senatorial District of Ogun State. Since the total number of healthcare workers in the study area was Four Hundred and Eighteen (418), Taro Yamane's sample size determination was used as stated in equation 1. This sample size method has been used in previous studies [13, 14, 15].

$$n = \frac{N}{(1 + Ne^2)}$$

Where n is the sample size, N is the total population, and e is the margin error at a 95% confidence level, 0.05. Applying this, the sample size of health workers in the study was Two Hundred (200). An attrition rate of 12%, which represents Twenty-Four (24), was added, making it Two Hundred and Twenty-Four (224) selected health workers in the study area. Determining the number of health workers per institution and ensuring representativeness of the sample, a proportionate sampling technique was used to select the number of respondents. A self-developed questionnaire containing the Warwick-Edinburgh Mental Well-being Scale; Depression, anxiety and stress scale; and a German-language version of the ways of coping scale, were used as the instrument. The mental well-being of health workers was grouped into 'good mental health ranged from 39-56 (above 70%), average mental health ranged from 28-38 (50% - 70%) and poor mental health ranged from 0-27 (Below 50%). 224 copies of the questionnaire were administered to the sampled health workers using a multi-stage sampling technique. The purposive sampling technique was used to select four hospitals in Ogun State, one from each according to the political distributions in the district; a simple random sampling technique was used to select five units from each hospital, and a convenient sampling technique was used to select respondents for the study. The collected data were sorted, arranged serially and coded for analysis using descriptive and inferential statistical techniques.

III. RESULTS

Socio-demographic Characteristics of Respondents

The results revealed that the majority (70.1%) of respondents were within the age bracket of 30-49 years, 76.3% of them were females, and 58.5% were married (Table 1). The results further showed that 76.8% were Christians, 85.7% were Yoruba ethnic group, and 58.9% of them were Nurses. The majority (84.4%) of the healthcare workers had working experience within 10 years, while the majority of the healthcare workers worked at OOUTH and GH Ijebu.

Table 1. Demographic characteristics of the respondents

VARIABLES	FREQUENCY	PERCENT (%)
AGE		
20-29	11	4.9
30-39	79	35.3
40-49	78	34.8
50-59	46	20.5
60 AND ABOVE	10	4.5
SEX		
MALE	53	23.7
FEMALE	171	76.3
MARITAL STATUS		
SINGLE	90	40.2
MARRIED	131	58.5
DIVORCED	1	0.4
WIDOWED	2	0.9
RELIGION		
CHRISTIANITY	172	76.8
ISLAM	51	22.8
OTHERS	1	0.4
ETHNICITY		
YORUBA	192	85.7
IGBO	27	12.1
HAUSA	2	0.9
OTHERS	3	1.3
PROFESSION		
MEDICAL DOCTORS	50	22.3
NURSES	132	58.9
*8LAB SCIENTIST S	19	8.5
PHYSIOTHERAPISTS	18	8.0
RADIOGRAPHERS	3	1.3
OTHERS	2	0.9
YEARS OF WORKING EXPERIENCE		
1 – 10	189	84.4
11 – 20	31	13.8
20 AND ABOVE	4	1.7
HEALTH FACILITY		
OOUTH	1	0.4
GH EDE	13	5.8
GH IJEBU	57	25.4
GH OMU	3	1.3
GH ODOGBOLU	1	0.4
OGSON	4	1.8
OOUTH	79	35.3
GH IJEBU	66	29.5

Psychological Effects of Covid-19 on Health Workers

The results of the perceived psychological effects of COVID-19 on health workers are presented in Table 2. The results showed that 35.3% of healthcare workers perceived the psychological effect of the COVID-19 pandemic some of the time, 28.0% did not perceive the effect at all, 22.1% perceived the effects some of the time, while fewer (14.6 %) of the healthcare workers perceived the effects most of the time (Table 2).

Some the time, 39.3% of healthcare workers perceived that they found it difficult to relax when attending to patients during this COVID-19 pandemic, and 38.8% of healthcare workers were aware of the action of their hearts in the absence of physical exertion at the sight or hearing of covid-19 patient, 38.4% of them could not seem to experience any positive feelings concerning COVID-19, while only 9.8% could experience the positive feelings concerning COVID-19. The majority (37.9%) of respondents did not experience breathing difficulty at all when they heard that a patient was a COVID-19 suspect (Table 2). The findings of this

study also revealed that 67.9% of respondents perceived that COVID-19 had a low impact on them, 20.1% perceived it as an average impact, and 12.1% of healthcare workers perceived a high psychological impact (Figure 1).

Table 2: Psychological Effects of Covid-19 on Health workers

VARIABLE	NOT AT ALL	SOME OF THE TIME	A GOOD PART OF THE TIME	MOST OF THE TIME
I EXPERIENCED BREATHING DIFFICULTY (E.G., EXCESSIVE RAPID BREATHING, BREATHELESSNESS IN THE ABSENCE OF PHYSICAL EXERTION) WHEN HEAR THAT A PATIENT IS A COVID-19 SUSPECT	85 (37.9)	83 (37.1)	30 (13.4)	26 (11.6)
I COULD NOT SEEM TO EXPERIENCE ANY POSITIVE FEELING CONCERNING COVID-19	74 (33.0)	86 (38.4)	42 (18.8)	22 (9.8)
I TEND TO OVER REACT TO PATENTS DURING THE PANDEMIC TIME ESPECIALLY TO COVID-19 SUSPECT PATIENTS.	62 (22.7)	59 (26.3)	63 (28.1)	40 (17.9)
I FOUND IT DIFFICULT TO RELAX WHEN ATTENDING TO PATIENTS DURING THIS COVID-19 PANDEMIC	49 (21.9)	88 (39.3)	60 (26.8)	27 (12.1)
WHEN I AM IN THE HOSPITAL, I BECOMES SO ANXIOUS AND WAS RELIEVED WHEN MY SHIFT ENDS	69 (30.8)	78 (34.8)	46 (20.5)	31 (13.8)
I FIND IT HARD TO RELAX AT HOME AFTER EACH ENCOUNTER WITH COVID-19 PATIENT	48 (21.4)	74 (33.0)	65 (29.0)	37 (16.5)
I FELT THAT I HAD LOST INTEREST IN JUST ABOUT EVERYTHING DURING THIS PERIOD	68 (30.4)	77 (34.4)	40 (17.9)	39 (17.4)
I PERSPIRED NOTICEABLY (E G, HANDS SWEATY) IN THE ABSENCE OF HIGH TEMPERATURES OR PHYSICAL EXERTION WHEN I SEE OR HEARS ABOUT THE PRESENCE OF COVID-19 PATIENT IN MY WARD OR HOSPITAL.	54 (24.1)	80 (35.7)	55 (24.6)	35 (15.6)
I WAS AWARE OF THE ACTION OF MY HEART IN THE ABSENCE OF PHYSICAL EXERTION (E.G, SENSE OF HEART RATE INCREASE, HEART MISSING A BEAT) AT THE SIGHT OR HEARING OF COVID-19 PATIENT	56 (25.0)	87 (38.8)	44 (19.6)	37 (16.5)
AVERAGE PERCEIVED PSYCHOLOGICAL EFFECTS OF COVID-19 ON HEALTH WORKERS	62 (28.0)	79 (35.3)	49 (22.1)	32 (14.6)

State of Mental Health of Workers during the Covid-19 Pandemic

In the past four months, 35.3% of respondents often felt optimistic about the future, 45.1% some of the time felt useful, especially in helping covid-19 patients, 48.2% often feel relaxed after work, 38.4% often felt interested in other people especially patients, 48.7% often had to deal with problems well while 36.6% some of the time often thought clearly (Table 3). Some of the time, the results showed that 34.8% of respondents had been feeling good about themselves, 46.4% of health workers had been feeling good about others, 41.1% had been feeling good about everything, 34.8% had been feeling confident, 45.5% have been able to make up their mind about things, and 39.3% had been feeling loved.

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The results of this study also revealed that 37.5% of health workers had good mental health, 6.7% perceived to have average mental health, and 55.8% had poor mental health (Figure 2).

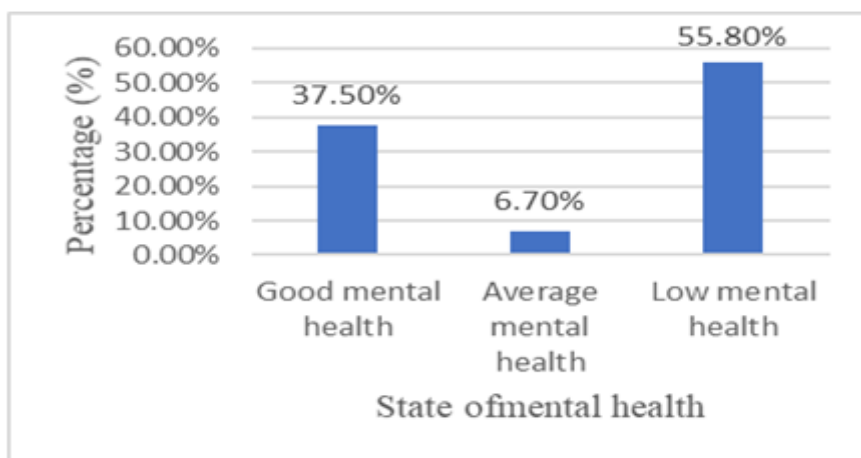


Figure 2: State of Mental Health of Health Workers

Coping Strategies Used by Health Workers

The results in Table 4 showed that 55.8% of the health workers agreed with the coping strategies used during Covid-19, 28.6% of them did not agree with the strategies used, while only 15.6% of the health workers were undecided. The majority of the respondents (>44%) agreed with all the coping strategies used except for two strategies where the respondents disagreed with the strategies put in place and used during the covid-19 pandemic. Details of the coping strategies are presented in Table 4.

Table 3: State of Mental Health of Workers during the Covid-19 Pandemic

VARIABLES	NONE OF THE TIME	RARELY	SOME OF THE TIME	OFTEN	ALL OF THE TIME
IN THE PAST 4 MONTHS HOW OFTEN DID YOU FEEL OPTIMISTIC ABOUT THE FUTURE	14 (6.3)	18 (8.0)	75 (33.5)	79 (35.3)	38 (17.0)
IN THE PAST 4 MONTHS HOW OFTEN, DID YOU FEEL USEFUL ESPECIALLY HELPING COVID-19 PATIENTS?	2 (0.9)	27 (2.1)	101 (45.1)	56 (25.0)	38 (17.0)
IN THE PAST 4 MONTHS HOW OFTEN DID YOU FEEL RELAXED AFTER WORK?	5 (2.2)	33 (14.7)	108 (48.2)	60 (26.8)	18 (8.0)
IN THE PAST 4 MONTHS HOW OFTEN DID YOU FEEL INTERESTED IN OTHER PEOPLE ESPECIALLY PATIENTS?	4 (1.8)	16 (7.1)	86 (38.4)	69 (30.8)	49 (21.9)
IN THE PAST 4 MONTHS HOW OFTEN DID YOU DEAL WITH PROBLEMS WELL?	4 (1.8)	22 (9.8)	109 (48.7)	53 (23.7)	36 (16.1)
IN THE PAST 4 MONTHS HOW OFTEN DID YOU THINK CLEARLY?	4 (1.8)	13 (5.8)	82 (36.6)	83 (37.1)	42 (18.8)
I HAVE BEEN FEELING GOOD ABOUT MYSELF	5 (2.2)	20 (8.9)	78 (34.8)	51 (22.8)	70 (31.3)
I HAVE BEEN FEELING GOOD ABOUT OTHERS	3 (1.3)	17 (7.6)	104 (46.4)	62 (27.7)	38 (17.0)
I HAVE BEEN FEELING GOOD ABOUT EVERYTHING	3 (1.3)	18 (8.0)	92 (41.1)	64 (28.6)	47 (21.0)
I HAVE BEEN FEELING CONFIDENT	3 (1.3)	19 (8.5)	78 (34.8)	64 (28.6)	60 (26.8)
I HAVE BEEN ABLE TO MAKE UP MY OWN MIND ABOUT THINGS	3 (1.3)	38 (12.5)	102 (45.5)	49 (21.9)	42 (18.8)
I HAVE BEEN FEELING LOVED	6 (2.7)	16 (7.1)	88 (39.3)	71 (31.7)	43 (19.2)
I HAVE BEEN INTERESTED IN NEW THINGS	4 (1.8)	20 (8.9)	87 (38.8)	68 (30.4)	45 (20.1)
I HAVE BEEN FEELING CHEERFUL	4 (1.8)	17 (7.6)	82 (36.6)	57 (25.4)	64 (28.6)

Table 4: Best Coping Strategies Used by Health Workers during COVID-19

VARIABLES	STRONGLY AGREE (%)	AGREE (%)	INDECISIVE (%)	DISAGREE (%)	STRONGLY DISAGREE (%)	TOTAL (%)
IT WILL BE OFF OVER TIME; I.E., THERE IS NOTHING MORE TO DO BUT TO WAIT	30.4	37.1	18.3	8.9	5.4	100.0
I TURN TO MY WORK OR OTHER ACTIVITIES TO DISTRACT MYSELF	35.7	28.6	14.7	17.0	4.0	100.0
I IMAGINE HOW THE WHOLE THING WOULD END	18.8	38.8	23.7	16.1	2.7	100.0
I IMAGINE THINGS THAT IMPROVE MY MOOD	20.1	50.9	14.7	8.9	5.4	100.0
I SUBMIT TO MY FATE; SOMETIMES YOU HAVE JUST UNLUCKY	22.8	16.1	17.4	31.3	12.5	100.0
I TELL MYSELF THINGS THAT MAKE IT EASIER FOR ME	27.2	41.1	14.3	10.7	6.7	100.0
I DO THINGS THAT ARE PROBABLY OF NO USE, BUT I FEEL LIKE AT LEAST, AM DOING SOMETHING.	24.1	20.5	12.9	26.8	15.6	100.0
I WISH I COULD CHANGE MY WORRIES AND FEELINGS	13.4	44.2	14.7	18.8	8.9	100.0
I HOPE FOR A MIRACLE	26.3	32.6	19.6	14.3	7.1	100.0
I TRY TO MAKE MYSELF FEEL BETTER BY EATING, DRINKING, SMOKING OR TAKING MEDICATION	15.2	24.6	12.1	24.1	24.1	100.0
I TAKE REFUGE IN DAYDREAMS AND IMAGINE TIMES WHEN IT WAS BETTER THAN TODAY	13.8	30.4	16.5	21.9	17.4	100.0
I TRY TO LEAVE THE WHOLE THING BEHIND AND WANT TO REST OR GO ON VACATION	24.1	37.9	9.8	18.3	9.8	100.0
I REFUSE TO BELIEVE WHAT IS HAPPENING	25.0	25.9	13.8	20.5	14.7	100.0
Overall coping strategies	22.8	33.0	15.6	18.3	10.3	100.0
	55.8			28.6		

Hypotheses Testing

Hypothesis I: There was no significant relationship between socio-demographic variables and psychological effects of Covid-19.

The results of the Chi-square test in Table 5 showed that there was a significant association between profession ($p < 0.05$) and the psychological impact of Covid-19. No significant relationship was found between age ($p > 0.05$), religion ($p > 0.05$), religion ($p > 0.05$) and the psychological impact of Covid-19.

Table 5: Hypothesis testing between socio demographic variables and effects of Covid-19

VARIABLES	PSYCHOLOGICAL IMPACT			X ²	P-VALUE
	High Impact	Average Impact	Low Impact		
AGE					
0-20	1	1	9	7.69	0.46
21-30	8	17	54		
31-40	12	18	48		
41-50	6	9	31		
51-60	0	0	10		
PROFESSION					
MEDICAL DOCTORS	14	11	25	26.65	0.03
NURSES	7	26	99		
LAB SCIENTISTS	1	4	14		
PHYSIOTHERAPISTS	5	3	10		
RADIOGRAPHERS	0	0	3		
OTHERS	0	1	1		
RELIGION					
CHRISTIAN	21	29	122	5.75	0.21
MUSLIM	6	16	29		
OTHERS	0	0	1		
YEARS OF WORKING EXPERIENCE					
0 – 10	25	41	123	9.72	0.12
11 – 20	2	3	26		
21 – 30	0	0	3		
31 - 40	0	1	0		

Hypothesis II: There was no significant relationship between the psychological impact of Covid-19 and the mental health well-being of health care workers.

The results of the Chi-square test in Table 6 showed that there was a significant association between the psychological effects of Covid-19 and the mental health wellbeing of healthcare workers ($\chi^2= 35.8$, $df = 2$, $p=0.01$).

Table 6: Hypothesis testing between psychological effects and mental health wellbeing

PSYCHOLOGICAL IMPACT	MENTAL HEALTH WELLBEING			X ²	DF	P-VALUE
	Good health	Average health	Poor health			
HIGH IMPACT	47	13	92	35.8	4	0.01
AVERAGE IMPACT	13	2	30			
LOW IMPACT	24	0	3			
TOTAL	84	15	125			

IV. DISCUSSION

The covid-19 pandemic brought unprecedented effects on many nations and individuals including health workers. Assessing the psychological effects of covid-19 is essential. The result of this study showed that 67.9% of health workers perceived that Covid-19 had a low impact on them, 20.1% of them said it has an average impact while 12.1% of them have a high impact. This is supported by the previous studies which revealed that there was an increased rate in the psychological impact of a pandemic on health care workers as the anxiety and depression prevalence rates ranged from 15.7% to 44.6% and from 10.6% to 50.4% in frontline staff, and 7% to 18.1% and 25% to 29.5% in non-frontline staff, respectively [16]. Similarly, 14.5% of participants screened positive for anxiety, 8.9% for depression, 6.6% for stress, and 7.7% for clinical concern of PTSD on the psychological impact of Covid-19 [17]. Another study revealed that out of 230 healthcare workers

who responded to the mental health assessment scales, 53 (23.04%) had psychosocial problems such as overall anxiety (23%), stress disorder (27.4%), depression (50.4%) and insomnia (34.0%) [18].

Higher rates of psychological impact were reported that 56.59% of the healthcare workers had symptoms of anxiety, depression or insomnia, including 38.47% with mild symptoms and 18.12% with moderate/severe symptoms [19]. This is corroborated by the study of Barbara & Tania who revealed that a significant proportion of health workers have depression symptoms (50.4%), anxiety (44.6%), insomnia (34%), and discomfort (71.5%) [20].

The result of this study revealed that 37.5% of them have good mental health, 6.7% of them said they have average mental health and 55.8% of them have poor mental health. The majority of respondents always feel confident and cheerful. A study acknowledged that health workers who care for Covid-19 were vulnerable to some level of psychological distress [18]. Similarly, the concern of psychological distress was found among the respondents in China [21] in their study also expresses. In addition, the psychosocial impact of covid19 revealed that a good percentage of their respondents have psychological distress [20].

Furthermore, this study also revealed that there was a significant association between profession ($P < 0.05$) and the psychological impact of Covid-19. Further, no significant relationship was found between age, religion, religion and the psychological impact of Covid-19 ($p > 0.05$). These were supported by several studies, which have found a relationship between the professions of medical workers and the psychological impact of Covid-19. For example, there was a higher prevalence of anxiety, fear, depression, insomnia, somatization and obsessive-compulsive symptoms among medical staff (predominantly doctors and nurses) compared with non-medical staff [22].

A similar study reported that healthcare workers have a much higher risk of psychological problems (anxiety, depression and insomnia) during the epidemic [19]. In contrast to a study, which revealed that non-medical health care workers had a higher prevalence of anxiety than medical health workers did [23]. Regarding the coping strategies, a study revealed that religion was the most used by respondents [24]. Similarly, a study reported that the majority of respondents “refuse to believe what is happening” while others tend to focus on appreciable challenges (Chandra et al. 2020).

V. CONCLUSION AND RECOMMENDATIONS

Poor patients' access to healthcare, shortage of resources, controversial treatment protocols and the economic burden of the pandemic exert a profound burden on the health system with the healthcare workers having a greater share of the burden psychologically. The perceived psychological effects and coping strategies of a covid-19 pandemic on health workers who were 18 years and above in the Ogun east senatorial district have been assessed. The results showed that 35.3% of healthcare workers perceived the psychological effect of the COVID-19 pandemic some of the time. The results of this study also revealed that 37.5% of health workers had good mental health and 55.8% had poor mental health. The best coping strategies adopted by respondents were “I tell myself things that make it easier for me”, “I turn to my work or other activities to distract myself”, “I imagine things that improve my mood”, and “It will be off over time; i.e., there is nothing more to do but to wait” and “I hope for a miracle”. Furthermore, there was a significant association between profession and the psychological impact of Covid-19 ($p < 0.05$). No significant relationship was found between age, religion, religion and the psychological impact of Covid-19 ($p > 0.05$). This study concludes that there should be the provision of adequate PPE for healthcare workers, and access to adequate psychological therapists the hospital for health workers.

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