Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/15106
DOI URL: http://dx.doi.org/10.21474/IJAR01/15106

RESEARCH ARTICLE

ASSESSMENT OF THE PSYCHOLOGICAL IMPACT OF THE COVID-19 PANDEMIC ON HEALTH CARE WORKERS

Adil EL Ammouri[1,3], Imane Agdai[1,3] Ouissal Radouane[1,3], Hana Abrebak[1,3], Yassine Rassame[1,3], Fatima Zahra Chamsi[1,3], Farah Nsabi[1,3], Fadela Bousgheiri[2,3] and Adil Najdi[2,3]

1. Research Team for Mental Health, University Psychiatric Hospital, Tangier, Morocco (CHU-TTA).
2. Laboratory of Epidemiology and Public Health.
3. Faculty of Medicine and Pharmacy of Tangier (FMPT), Abdelmalek Essaadi University (UAE), Tangier, Morocco.

Manuscript Info

Manuscript History
Received: 30 May 2022
Final Accepted: 30 June 2022
Published: July 2022

Key words:-
Anxiety, Depression, Burn out, Healthcare workers, Covid 19

Abstract

In addition to being a public physicalhealth emergency, Coronavirus disease 2019 (COVID-19) affected global mental health as cases increased.

Objectives: The aim of thisstudyis to determine the psychologicalimpact on mental well-being and associatedriskfactorsamonghealthcareworkers.

Researchmethodology: a cross-sectional studyamongMoroccanhealthcareworkerswasconducted to measureprevalence rates of symptoms of anxiety,depression, burn out and theirassociatedfactors, objectified by the Hospital Anxiety and DepressionScale(HADS), Maslach Burnout Inventory(MBI) and a questionnaire, respectively.

Results: Symptoms of anxiety, depression, and emotional exhaustion werereported by 38.5%, 28.1% and 85.4% of the 96 respondents,respectively. Beingyoung and having a psychiatrichistorywereassociatedwith more anxietysymptomatology. Whileworking in the intensive care unit, feeling obliged to work in the covid circuit, living withfamilywereassociatedwithdepressionsymptoms. The factorsstatisticallyrelated to burnout wereyears of work, having an organichistory; working in intensive care unit and consideringthat the number of staff isinsufficient, that the communication withtheircolleagues and superiorsisinadequate and that the training theyhadbeforejoining covid was not sufficient

Conclusion: The COVID-19 pandemichad a high impact on the mental well-being of healthcareworkersincreasing the risk of dropout and compromisescontinuity of care. Efforts must be made to optimize working conditions and reduceworkload.

CorrespondingAuthor:- Adil El Ammouri
Address:- UniversityPsychiatric Hospital. BP 398 Gzenaya, Route de Rabat Km 17 Tangier, Morocco.
Mail:elammouri.adil@gmail.com

Introduction:-

The WHO declared the pandemic covid 19 on March 11, 2020 (WHO, 2021). Sincethen the spread of thisunknowndisease has continued to propagatearound the world causing a major healthcrisis and quarantining more thanhalf the world's population. The COVID-19 disease has shown high rates of contagion, associatedwithdeadly virulence.

To date, the virus has infected over 500 million people worldwide and killed over 6 million(WHO, 2021).

Since March 2020, Morocco has experiencedthreewaveswith 16,101 deaths (Le Portail Officiel du Coronavirus au Maroc). The large number of infected people and deaths have contributed to considerableemotional stress among the general population (Y. Huang et al, 2020).

During the pandemic, healthcareworkersfacedseveral challenges including: the increase in the number of patients and deathsrelated to the pandemic, the exhaustingworkload (doubledworkhours, postponeddays off and reducedhours of sleep), the lack of ventilators and beds in intensive care units (ICUs), and the shortage of personnel protective equipment (PPE), whichled to emotional and physical exhaustion (Y. Huang et al, 2020; R.Y. Elbay et al 2020). In addition, the increased rate of infection amongmedical staff and the fear of transmitting the infection to theirfamilieswasanother factor thatcontributed to their exhaustion (M.S. Spoorthy et al, 2020).

These challengesmakehealthcareworkers (HCW) vulnerable to mental healthproblemsincludinganxiety, depression, insomnia (P. Wu, et al,2009), and post-traumatic stress symptoms (PTSS) (Y. Baiet al, 2004;S.M. Lee et al, 2018).

Few studies in Morocco have addressed the psychological impact of the pandemic on health care workers, thereforeourstudyaimed to determinethis impact by assessing the prevalence of depressive and anxioussymptomatology, burnout and theirassociatedfactors.

It will enableusto betterunderstand in somedepth the impact of thislatestpandemic,to put in place recommendations and improvepreparation for furtherpandemics to bettersafeguard the psychologicalwellbeing of healthworkers.

Materials And Methods:-

Study design and participants:

This is a cross-sectional, descriptive and analyticalstudyconductedduringMayandJune 2020. The participants werehealth care workers in public hospitals in Morocco (interns, residents, specialists, generalpractitioners, emergency physicians; nurses and otherhealth care workers).

Data collection

Given the pandemic situation of the country, a face-to-face surveywas not feasible. Data collection wasdonethrough an online questionnaire on Google forms : Participants wereencouraged to share links from the online Google formwithothercolleagues and to theirprofessional groups.

The questionnaire had four sections:

socio-demographic data (age, gender, marital status...); clinical information (diagnosis of a previousphysical and psychiatricdisorder, history of substance use) ; socio-professional data (professionalcategory, years of work in the healthsector, whether the participants have integrated the Covid 19 circuit, theirdegree of satisfaction regarding communication betweenthemselves and theircolleagues and superiors, the number of health personnel, training beforeintegrating the Covid 19 circuit, their perception of the risk of contamination) and psychometricscales (Maslachburn out inventory, Hospital Anxiety and DepressionScale)

Maslachburn out inventory MBI

This instrument was first validated by Maslach and Jackson (1981)(C Maslach1981;M do Socorro and al, 2016). In ourstudy,weused the French version of the MBI adaptedwith 22 items(R.Tessier and al 1994), a rating of responsesfrom 0 to 5 on the 3 dimensions and 3 levels of burn-out: low, moderate, severe. The scores are obtained by summing the responses to the items. The threelevels of burnout (low, moderate and high) are defined by specificthresholds: emotional exhaustion (EE) (low BO: score < 18, moderate BO: 18 to 29, high BO: > 29); depersonalisation / loss of empathy (DP) (low BO: < 6, moderate BO: 6 to 11, high BO: > 11); accomplishmentassessment (PA) (high BO: < 34, moderate BO: 34 to 39, low BO: > 39).

In ourstudyweusedonly the 9 items thatconcernedemotional exhaustion (EE)

Hospital Anxiety and DepressionScale HADS

For assessingdepression and anxiety HADS scaleconsisted of 14 items dividedintotwosubscaleswithseven items for depression and seven for anxiety. Each item israted on a four-point Likert scale (0–3) with total scores of depression and anxietysubscalerangingfrom 0 to 21 individually. The depression and anxietybeingclassified as normal (0–7), borderline abnormal (8–10), and abnormal (11–21).(Spinhoven et al 1997; D white et al, 1999)

A. Analysis

Data analysiswasperformedusing SPSS version 25. The descriptive analysisincluded all variables of interest (socio-demographic and professionalcharacteristics) in the total sample (percentages, means, and standard deviation).

For univariateanalysis, the chi-square test wasused to compare the percentages of variables. Wealsoused an independentsamples t-test to compare the means. For the variables thatwere not normallydistributed (burnout score for the disturbedsleep variable) a non-parametricstatisticalanalysis, the "Mann Whitney U test", wasadopted.

A multivariateanalysiswasalso run, using the multiple linearregression to adjust on confoundingfactors (i.e., gender, age, living, work unit, risk of contamination, psychiatric and organichistory, length of service, sleepdisorder, work in the Covid19 circuit, voluntary participation) on depression, anxiety and burnout scores. All factorswith a $p<0.2$ wereincluded in the model as well as the variables of interest. The total depression, anxiety and burnout scalewereused as dependent variables.

B. Ethics

Our studyrespected the principles of informed consent and the guarantee of anonymity and confidentiality of responses via an anonymous questionnaire. The objectives of the researchwereexplained to the participants.

II. RESULTS:

A. Sociodemographic and professionalfindings

A total of 96 healthcareworkersparticipated in the studywith the meanage of 36 ± 10. Ratio of females (67,7%) washigherthan males (32,3%).

Married people werepredominant (54.2%). The dominant professionalcategorywasspecialistphysicians (46,9%), interns (24%), residentphysicians (8,3%), generalpractitioners (7,3%), nurses (5,2%) followed by emergency physicians (2,1%).

A total of 50.8% of healthprofessionalshad a length of service of more than 10 years. 62.5% worked in the covid 19 circuit: 18% in a hospitalward, 13% in triage, 11% in the emergency department, 9% in the intensive care unit, followed by 5% in non-hospital structures.

More thanhalf of the healthprofessionalswhoworked in the covid 19 circuit (34.4%) feltobliged to work in the covid circuit. 38.6% judged the number of staff per team to beinsufficient. 50% found the risk of contamination to be maximum. 38.4% feltthat the training theyreceivedbeforejoining the covid circuit was not satisfaying. 53.28% weresatisfiedwith the communication withtheircolleagues and superiors. 66.3% have a disturbedsleep. (Table 1)

Variables	n (%)
Gender	
Male	31 (32,3)
Female	65 (67,6)
Age	
< 40 yearsold	62 (64,6)
> 40 yearsold	34 (35,4)
Marital status	
Single	41(42,7)
Married	52 (54,2)
Divorced	3 (3,1)
Do you live alone?	
Yes	57 (58,7)
No	39 (41,3)
Professional category	
SpecialistPhysicians	45 (46.9)
Interns	23 (24)
ResidentPhysicians	8 (8,3)
General Practitioners	7 (7,3)
Nurses	5 (5,2)
Emergency physicians	2 (2,1)
Length of service	
< 10 years	51 (53,1)
> 10 years	45 (46,9)
Psychiatrichistory	
No history	80 (83)
Depression	10 (10)
Anxiety	4 (4)
Substance use	
No	89 (92,7)
Tabac	1 (1)
Alcohol	1 (2,1)
Heroine	1 (1)
Organichistory	
Yes	77 (80,2)
No	19 (19,8)
Didyouwork in the Covid 19 circuit ?	
Yes	60 (62,5)
No	36 (37,5)
Work Unit	
Hospitalization Service	18(18,8)
Triage	13 (13,5)
Emergency	11 (11,5)
Intensive care	9 (9,4)
Non-hospital structure	5 (5,2)
Didyoufeelobliged to work in the covid 19 circuit?	
Yes	33 (34,4)
No	27 (28,8)
How do youjudge the number of healthprofessionals per team?	
Sufficient	31 (32,3)
Insufficient	27 (28,1)
How do youjudge the risk of contamination?	
Important	30 (31,3)
Medium	21 (21,9)
Low	9 (9,4)
How wouldyou rate the quality of the training youreceivedbeforejoining the covid 19 circuit?	
Good	14 (14,6)
Average	23 (24)

Insufficient	23 (24)
How wouldyou rate communication withyourcolleagues and superiorsduring the pandemic?	
Good	32 (33,3)
Average	20 (20,8)
Poor	8 (8,3)

Table 1:- Sociodemographic and professionalcharacteristics of the healthworkers' sample.

Anxious and depressivesymptoms :

The significant HADS scores for anxiety and depression are given in Table 2.

Our resultsindicatesignificant scores for anxiety (38.5%) and depression (28.1%). The comorbidity of anxiety and depressionisestimated at 22.92%. This indicates a significantthreat to the mental health of health care workers (Table 2).

Table 2:- Anxious and depressivesymptomatologyaccording to HADS and emotional exhaustion according to MBI.

	Depression n (%)	Anxiety n(%)
Normal	33 (34,4)	39 (40,6)
Borderline abnormal	36 (37,5)	20 (20,8)
Abnormal	27 (28,1)	37 (38,5)
Emotionalexaustion n (%)		
Low degree	14(17,1)	
Moderatedegree	26 (31,7)	
High degree	42 (51,2)	

Weanalyzed the influence of factorssuch as gender, age group, marital status, professionalcategories, integration of the covid circuit, differentworkunits, in the appearance of symptoms of depression and anxiety.

The data indicatethatagefavors the appearance of anxietysymptoms in medical staff ($p < 0.02$). It isobservedthathealthprofessionalsbelowfortyyearsold have more anxietysymptomatologythanthosewho have more thanfortyyearsold (Table 3).

Table 3:- Association betweendepression, anxiety, emotionalexaustion and different variables.

Variables	Depression		Anxiety		Emotionalexaustion	
	Mean	p	Mean	p	Mean	p
Gender		< 0,58		< 0.079		< 0.089
Male	8.25		8.12		23.77	
Female	8.75		9.75		29.86	
Age		< 0.056		**< 0.02**		**< 0.01**
< 40 yearsold	9.19		9.96		31.04	
> 40 yearsold	7.5		7.88		22.14	
Marital status		< 0.44		< 0.93		< 0.2
Single	9.19		9.41		31.36	
Married	8.19		9.09		25.32	
Divorced	7.33		9		25	
Do you live alone?		**< 0.016**		< 0.095		< 0.18
Yes	9.82		10.10		30.59	
No	7.75		8.63		26.05	
Professional		< 0.73		< 0.83		<0.48
categorySpecialist	10.2		11		34.4	
Physicians	9.04		8.6		23.91	
Interns	7.85		9.71		24.85	
Resident	9.87		9		31.87	
Physicians	8.35		9.26		28.35	
General	8.5		12.5		46.5	

Practitioners		<0.06				
Nurses	9.33		10.17	< 0.19	31.11	**< 0.04**
Emergency	7.75		8.15		24.24	
physiciansLength of		< 0.33				
service	8.32		8.77	**<0.018**	26.02	**< 0.012**
< 10 years	10.3		11		39.6	
> 10 years	8		13		36.5	
Psychiatrichistory		< 0.59				
No history	8.58		9.09	< 0.67	27.62	**< 0.58**
Depression	8		15		50	
Anxiety	5		10		21.5	
Substance use No	9		11		42	
Tabac		<0.25				
Alcohol	9.57		9.01	< 0.31	26.19	**< 0.04**
Heroine	8.35		10.10		34.79	
Organichistory Yes		<0.15				
	9.06		9.46	< 0.48	29.03	< 0.38
	7.8		8.83		26	
No		**< 0.001**				
Didyouwork in the Covid	8.66		8.72	< 0.14	25.33	**< 0.001**
19 circuit ?	9.84		9.84		31.76	
Yes	9.54		10.09		34	
No	12.33		11.55		38.33	
Work Unit	1.8		5		0.6	
Hospitalization						
Service		**< 0.004**				
Triage	10.48		9	< 0.58	24.74	< 0.12
Emergency	7.33		9.84		32.54	
Intensive care						
Non-hospital						
structure	9.03	< 0.3	8.93		23.06	
Didyoufeelobliged to work	9.22		10.22	< 0.35	35.85	**< 0.008**
in the covid 19 circuit?						
Yes						
No	11.11	<0.437	10.66		33.83	
How do youjudge the	8.79		9.27	<0.22	27.82.	< 0.3
number of	8.23		8.23		25.07	
healthprofessionals per						
team?						
Sufficient						
Insufficient How		**< 0.01**			21.21	
do youjudge the risk of	6.86		7.79	**< 0.003**	25.26	**< 0.004**
contamination?	8.48		8.35		37.57	
Important	11		11.61			
Medium						
Low						
How wouldyou rate the		**< 0.012**				
quality of the training	7.72		8.54		23.28	
youreceivedbeforejoining	9.95		9.75	<0.49	34.10	**< 0.009**
the covid 19 circuit?	12.25		9.84		39.38	
Good						
Average						
Insufficient						
How would you						
rate						
communication						
withyourcolleagues and						
superiorsduring the						

pandemic? Good Average Poor						

Psychiatrichistoryisalsorelated to anxietysymptomatology p<0.018. Indeed, people with a psychiatrichistory have more anxietysymptomatology.
The factorsassociatedwithdepressiveexperiences are mainly the work unit, in fact, people working in intensive care had a higheraveragedepressionthanother personnel working in otherunits (p<0.001)

Otherfactors are statisticallyassociatedwithdepressivesymtomatologysuch as feeling obliged to work in the covid circuit (p<0.004), living withfamily (p<0.016). People whojudged communication withtheircolleagues and superiors in the covid circuit as unsatisfyingalsohad more depressivesymptomatology (p<0.012)

Emotional exhaustion
Analysis of the Maslachsubscale : emotional exhaustionrevealedthat the majority (85.4%) of participants were in burnout. The severelevel of burnout wasfoundin 42 (43.8%) of the cases, the moderatelevelin 26 (27.1%) of the cases and the lowlevelin 14 (14.6%) of the cases.

Among the socio-demographic and professionalfactors, the factorsstatisticallyrelated to burnout wereyears of work (<0.023): health personnel withfeweryears of workhad a higheraverage burnout; psychiatric (p<0.012) and organic (p<0.04) history; work unit (p<0.001): intensive care personnel had more burnout compared to otherunits.

Thosewhoconsiderthat the number of staff isinsufficient (p<0.008), and that the communication withtheircolleagues and superiorsisinadequate (p<0.009) and that the training theyhadbeforejoining covid was not sufficient (p<0.004) have a higheraverage burnout than the otherhealthcareworkers (Table 3)

Table 4:- Comparisonbetween the results of the univariate and multivariateanalysis.

Variables	Depression		Anxiety		Emotionalexaustion	
	Univariatean alysis p	Multivariatea nalysis p	Univariatean alysis p	Multivariatea nalysis p	Univariatean alysis p	Multivariatea nalysis p
Depression	-	-	**<0,001**	**<0,001**	Non sig	**0,001**
Anxiety	**<0,001**	**<0,001**	-	-	Non sig	Non sig
Emotionalexaustion	Non sig	Non sig	**<0,001**	Non sig	-	-
Age	Non sig	Non sig	**<0,008**	Non sig	Non sig	Non sig
Psychiatrichistory	Non sig	Non sig	**<0,018**	Non sig	**<0,012**	Non sig
Organichistory	**<0,04**	Non sig	Non sig	Non sig	**<0,04**	Non sig
Didyoufeeloblige d to work in the covid 19 circuit?	**<0,004**	**<0,001**	Non sig	Non sig	Non sig	Non sig
Work unit	**<0,001**	**<0,01**	Non sig	Non sig	**<0,001**	Non sig
Do you live alone ?	**<0,016**	Non sig	Non sig	Non sig	Non sig	Non sig
How wouldyou rate communication withyourcolleagu es and superiorsduring the pandemic?	**<0,012**	Non sig	Non sig	Non sig	**<0,009**	Non sig
How do youjudge the risk of contamination?	Non sig	Non sig	Non sig	Non sig	Non sig	Non sig
How wouldyou rate the quality of the training	**<0,01**	Non sig	**<0,003**	Non sig	**<0,004**	Non sig

youreceivedbefor ejoining the covid 19 circuit?						
Length of service	Non sig	**<0,035**	Non sig	Non sig	**<0,023**	Non sig
How do youjudge the number of healthprofessiona ls per team?	Non sig	Non sig	Non sig	Non sig	**<0,008**	**<0,045**

Discussion:-

The currentstudy'sconcern about depression, anxiety and burnout amonghealth care workers. Wefoundthat 38.5% of health care workersexperiencedanxiety, whichis consistent with the results of a study in Pakistan whichshowed an anxiety rate of 50.4% (I.Ullah et al, 2022). Anotherstudyfound an anxiety rate of 41.8% (C.PierreMboua et al, 2021) amonghealth care workers. Our studyshowedthatthereis a statisticallysignificantrelationshipbetweenanxiety and psychiatrichistory ($p<0.018$); in fact, people with a psychiatrichistory have a higheraverageanxietysymptomatologythan people without a history; thisis in line with the results of a study in China which shows thatcurrentmedicaldisease (includingpsychiatricdisorders and substance abuse), and a pastmedicalhistory (includingpsychiatrichistory and substance abuse) wereassociatedwithincreasedrisk of depression and/or anxiety (Wang, C. et al, 2020).

With regard to depression, ourresults show a prevalence of 28.1%. A review of the literatureconducted on 10 studiesshowedpooledprevalence of depression of 22.8% amonghealth care workers (S.Pappa et al, 2020). Anotherreview of literature in China showed a prevalence of depressionamonghealthcareworkersrangingfrom 4% to 82 % depending on the timing of the study in relation to the peak; with a pooledprevalence of 31 %(Yong yan et al, 2021)

Among the factorsstatisticallyassociatedwithdepressionwefind the fact of living withfamily ($p<0,016$), contrary to whatwefind in the studieswhere living alone and being single exposes more to the risk of depressionbecause of the absence of family support (I.Ullah et al, 2022; M.Alegría et al, 2022;Emily Zhang et al, 2020). In fact; ourresults can beexplained by the fear of contaminatingtheirfamilieswhichaggravatestheirsymptomatology.

Another factor wasalsoassociatedwithdepressivesymptomatology: training beforejoining the circuit, whichwasunsatisfying ($p<0.010$). The lack of training worsened the climate of anxiety; in fact, itadded to severalstressfulfactors - such as the lack of protective equipment, the workload, the reduced teams, the fear of contaminatingtheir relatives - the feeling of insecurity and incompetence in the face of the patient (W.El-Hage et al, 2020).

We note the presencein 22.92% of our population of a comorbidity of depression and anxiety. Depression and anxiety are two pathologies with points in common in theirphysiopathology, in fact, the disturbances of the neurotransmission of serotonin and norepinephrine are bothimplicated in anxiety and depression, and the changes in one system are reflected in the other (D.S. Baldwin et al, 2002). The association betweenanxiety and depressionisveryfrequentaccording to severalstudies (V. Lenzo et al, 2021;S.Motahedi et al, 2021). This association is a factor of severity, chronicity and poorresponse to treatment, as well as an increasedrisk of suicide. (J.M. VANELLE, 2005)

Out of the 96 responsesrecovered, 82 cases, or 85.4% of ourrespondentswereaffected by burnout, thisis in line with the results of a studyconducted in Morocco whichshowed a burnout rate of 84.44% amonghealthprofessionalsworking in health monitoring units (R.L.Kapasa et al, 2021). In ourstudy, the severelevel of burn-out wasfoundin 42 (43.8%) of the cases, the moderatelevel of burn-out in 26 (27.1%) of the cases and the lowlevelin 14 (14.6%) of the cases. This clearlyindicates the importance of the psychological impact of the pandemicamong thehealthprofessionalswhoparticipated in ourstudy.

Furthermore, the majority of professionals (64.6%) in oursamplewereunder 40 years of age. Our results show thathealthprofessionalsunder 40 years of age have a higher rate of burnout thanthose over 40 years of age ($p<0.01$), theyalso show that people with more years of work in the healthsector have less burnout ($p<0.023$). Studies support thisresult and show thatyounger and thereforelessexperienced people have more burn out (Kamal AH et al, 2022)

Anotherstatisticallysignificant factor in burnout waswork unit (p<0.001);indeed, healthcareworkersworking in the ICU had more burnout thanotherworkers in otherunits. This maybeexplained by the factthatthiscategoryis more in contact withdeaths, had to workunderextremelystressfulcircumstances and takedramaticdecisions, including how to provide care to severalseriouslyill patients withconstrainedresources.

Preventivemeasures are specificallyrecommended for front-line professionals to reduce the double psychological and professionalburden, in terms of listening, psychological and psychiatric support, valuing the efforts made and multiform motivation. Sports rooms, meditationrooms and group therapy for discussion and expression withpreventive and therapeuticaimsshouldbe made available to them. The establishment of a psychological support system isnecessary.

The presentstudy has some limitations. First, given the particularity of the pandemic, itwasdifficult to collect data through a face-to-face meeting, soweused online questionnaires. Hence, the sample size wassmall and thismay lead to a negativebias. In addition, itis possible that people with more psychologicalproblemswhohadparticipated in the study, thustheymight not berepresentative of the study population. Finally, the type of study, whichis cross sectional, does not allow a cause-and-effectrelationship to beestablished and does not enable for long-term follow up of participants.

Conclusion:-

In conclusion, the studyhighlighted the high prevalence rates of depression, anxiety and burn out amongHCWs and findingsshowedthatbeingyoung, having a psychiatrichistory, working in the ICU, feeling obliged to work in the covid circuit, living withfamily, consideringthat the number of staff isinsufficient, that the communication withcolleagues and superiorsisinadequate and that the training beforejoining covid was not sufficientwereriskfactors and have an inevitableemotional impact on HCWs. The mostimportant recommendationwouldbeawarenessamongHCWsregarding use of personal protective equipment and infectivity of the virus. Mental health courses and workshops shouldbecarried out amongst the HCW for helpingthem to cope up withtheir mental exhaustion

References:-

1. C Maslach,SE Jackson, The measurement of experienced burnout , Journal of organizationalbehavior, 1981, Volume2,Issue2, Pages 99-113
2. Célestin Pierre Mboua, François Roger, Sylvain Gautier. Anxiété et dépression associées à la prise en charge de la COVID-19 chez les personnels de santé au Cameroun. L'Évolution Psychiatrique. Volume 86, Issue 1, March 2021, Pages 131-139.
3. D.S. Baldwin, D.L. Evans, R. Hirschfeld and S. Kasper. Can wedistinguishanxietyfromdepression? Psychopharmacol. Bull., 36 (2002), pp. 158-165
4. David white. chrisleach, ruthsims, michelleatkinson and davidcottrell. Validation of the Hospital Anxiety and DepressionScale for use with adolescents. British journal of psychiatry (190). 175, 452-454
5. Emily Zhang Ga Tin Fifi Wong SunahHyunHyeouk ―Chris‖ Hahm. Factorsassociatedwithdepression, anxiety, and PTSD symptomatologyduring the COVID-19 pandemic: Clinical implications for U.S. youngadult mental health. PsychiatryResearch 290(2020) 113172
6. IrfanUllah,Kiran Shafiq KhanIftikharAlieArslanRahatUllahSoniaMukhtarRenato de FilippisNajma Iqbal MalikiMohammadrezaShalbafanZairHassanMuhammadSohaibAsghar.Depression and anxietyamongPakistanihealthcareworkersamid COVID-19 pandemic: A qualitative study., Annals of Medicine and Surgery.Volume 78, June 2022, 103863
7. J.-M. VANELLE. Comorbidité, dépression et anxiété : les liaisons dangereuses L'Encéphale, 2005 ; 31 : 34-6, cahier 3
8. Kamal AH, Bull JH, Wolf SP, et al. Prevalence andpredictors of burn-out among hospice and palliative care clinicians in the U.S. J PainSymptom Manage 2020;59:6—13.
9. M.S. Spoorthy, S.K. Pratapa, S. Mahant, Mental healthproblemsfaced by healthcareworkers due to the COVID-19 pandemic–A review [Internet], Asian J Psychiatr 51 (2020 Jun), 102119. Availablefrom: https://linkinghub.elsevier.com/retrieve/pii/S1876201820302306.
10. Margarita Alegría Mario Cruz ShaheenO'MalleyaKiaraAlvareza Gabriela LivasSteindLarimarFuentesa and al. Role of social determinants in anxiety and depressionsymptomsduring COVID-19: A longitudinal study of adults in North Carolina and Massachusetts..BehaviourResearch and Therapy. Volume 154, July 2022, 104102
11. Maria do Socorro da Silva Valente, Cláudia S. Lopes, Maria Pastor-Valero, Paulo Rossi Menezes, Psychosocial Work Conditions and Burnout AmongBrazilian Bank Employees: A Cross-Sectional Study, The Annals of OccupationalHygiene, Volume 60, Issue 5, June 2016, Pages 567–580

12. Ministère de la santé et de la protection sociale. Le Portail Officiel du Coronavirus au Maroc. Situation Covid 19. http://www.covidmaroc.ma/Pages/SituationCovid.aspx
13. P. Wu, et al., The psychological impact of the SARS epidemic on hospitalemployees in China: exposure, risk perception, and altruistic acceptance of risk, Can. J. Psychiatr. 54 (5) (2009)302–311
14. R.L.Kapasa,A.Hannoun,S.Rachidi,M.K.Ilunga,S.E.Toiramb,C.TadyaM.T.Diamou,M.Khalisa. Évaluation du burn-out chez les professionnels de santé des unités de veille sanitaire COVID-19 au Maroc. Archives des Maladies Professionnelles et de l'Environnement. Volume 82, Issue 5, October 2021, Pages 524-534
15. R.Y. Elbay, A. Kurtulmus¸, S. Arpacıo˘ glu, E. Karadere, Depression, anxiety, stress levels of physicians and associatedfactors in Covid-19 pandemics [Internet], Psychiatr. Res. 290 (2020 Aug), 113130. Availablefrom: https://linkinghub.elsevier.com/retrieve/pii/S0165178120312038.
16. Rejean Tessier,Guylaine Dion, Validation de la traduction de l'Inventaire d'épuisement professionnel de Maslach et Jackson. / Validation of a French translation of the Maslach Burnout Inventory (MBI), April 1994, Canadian Journal of Behavioural Science/Revue canadienne des sciences du comportement26(2):210-227
17. S.M. Lee, et al., Psychological impact of the 2015 MERS outbreak on hospitalworkers and quarantinedhemodialysis patients, Compr. Psychiatr. 87 (2018) 123–127
18. SaeidehMotahedi, NasrinFadaeAghdam, MahboobehKhajeh, RobabeBaha, RoqayehAliyari, Hossein Bagheri, Abbas mardani. Anxiety and depressionamonghealthcareworkersduring COVID-19 pandemic: A cross-sectional study, Heliyon 7 2021
19. Sofia Pappa, VasilikiNtellac, TimoleonGiannakasc, Vassilis G. Giannakoulisc, Eleni Papoutsic, ParaskeviKatsaounou. Prevalence of depression, anxiety, and insomniaamonghealthcareworkersduring the COVID-19 pandemic: A systematicreview and meta-analysis. Brain, Behavior, and Immunity 2020
20. Spinhoven, j. ormel, sloekers, m. kempen, m. speckens, van hemert. A validation study of the Hospital Anxiety and DepressionScale (HADS) in different groups of Dutch subjects, PsychologicalMedicine, 1997, 27, 363–370. 1997 Cambridge UniversityPress
21. V. Lenzo, M.C. Quattropani, A. Sardella, G. Martino and G.A. Bonanno Front. Depression, anxiety, and stress amonghealthcareworkersduring the COVID-19 outbreak and relationshipswith expressive flexibility and contextsensitivity. Psychol., 12 (2021), p. 348
22. W.El-Hage,C.Hingray,C.Lemognedand al. Les professionnels de santé face à la pandémie de la maladie à coronavirus (COVID-19) : quels risques pour leur santé mentale ?. L'EncéphaleVolume 46, Issue 3, Supplement, June 2020, Pages S73-S80
23. Wang, C. et al.,. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. Brain. Behav. Immun. 2020https://doi.org/10.1016/j.bbi.2020.04.028
24. WHO (World Health Organsiation) 2021. WHO Coronavirus (COVID-19) Dashboard. WHO Coronavirus(COVID-19) Dashboard With Vaccination Data. Available at: https://covid19.who.int
25. Y. Bai, et al., Survey of stress reactionsamonghealth care workersinvolvedwith the SARS outbreak, Psychiatr. Serv. 55 (9) (2004) 1055–1057.
26. Y. Huang, N. Zhao, Generalizedanxietydisorder, depressivesymptoms and sleepqualityduring COVID-19 outbreak in China: a web-based cross-sectional survey [Internet], Psychiatr. Res. 288 (2020 Jun), 112954. Availablefrom: https://linkinghub.elsevier.com/retrieve/pii/S0165178120306077
27. Yongyan Deng Yifang Chen Bin ZhangLi et al. Differentprevalence trend of depression and anxietyamonghealthcareworkers and general public before and after the peak of COVID-19 occurred in China: A metaanalysis. Asian Journal of Psychiatry 56 (2021).