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Effect of perceived stress on psychological well-being of health care workers during COVID 19: mediating role of subjective happiness

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Abstract

The pandemic has taken a toll on the mental health of people especially health care workers like physicians, nurses and paramedical staff who have to work for long hours, in shifts and under immense stressful situations. There is ample literature available on the effect of stress on psychological wellbeing. The aim of this research paper is to find out the mediation effect of subjective happiness on the relationship between perceived stress and psychological well-being of health care workers who are engaged in COVID-19 hospital duties. The sample included 231 physicians and healthcare workers engaged in duties in two major COVID-19 medical college hospitals of Northern India. The results prove that there is a significant effect of perceived stress on psychological well- being with subjective happiness playing a mediating role. Perceived stress decreases subjective happiness which in turn affects psychological wellbeing of physicians and health care workers during COVID-19. Higher the level of subjective happiness, lesser will be the impact or there will be delayed impact of perceived stress on psychological wellbeing. Psychological Well Being (PWB) Scale (Ryff, 1989), Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) and Perceived Stress Scale (Cohen, 1994) were used to examine the mediation of subjective happiness on the relationship between perceived stress and psychological wellbeing.

Key Words: Psychological wellbeing, Perceived stress, Subjective happiness, COVID-19

Introduction

The COVID-19 pandemic has already started taking a toll on the physical and mental health of people around the world. According to WHO (2020), COVID-19 is an acute respiratory ailment whose documented symptoms are fever, cough, breathing trouble. WHO (2020), towards the end of December 2019, the office of World Health Organization in China reported cases of pneumonia like disease whose origin was in Wuhan City. The cases rose to 44 by January 3, 2020. The virus spread to various countries from Wuhan. On January 15th, 2020 first case was reported in Japan, on January 20, 2020 in Korea, and in next few days the first case was reported in Kerala, India who was a student who returned from Wuhan (India

Today, 2020) and since then till August 10, 2020, 2217649 cases have been reported with COVID with 1536259 recoveries and 636427 active cases (Statista, 2020). Within 10 days on August 21, 2020, India had 2,905,823 cases, out of which 692,028 were active cases, 2,158,946 cases recovered and 54,849 were deceased (Hindustan Times, Aug 21, 2020).

This pandemic has been reported to be a major stress factor affecting the mental well-being of people all over the world (Brooks et al., 2020) and it can lead to severe problems like acute depression, stress and anxiety (Statici et al., 2020; Gunnell et al., 2020).

A person's psychological well-being is the degree to which one has more positive interventions as compared to negative interventions (Bradburn & Caplovitz, 1965). Psychologists who patronise the hedonic view focus on the viewpoint that happiness is a combination of physical and mental satisfaction (Kubovy, 1999).The concept was further refined by Diener and Lucas, 1999 who suggested that happiness cannot be reduced merely to physical hedonism, it can rather be attained by achieving the goals and valued outcomes in varied realms. Gustems et al. (2019) used Cohen's perceived stress scale (1994) and found that stress has a physical as well as social impact on the well-being of people and there is a mediating effect of coping strategies on relationship between stress and well-being.

Perceived stress and psychological wellbeing

Aristotle (1947) states that "both the general run of men and people of superior refinement say that (the highest of all goods achievable by action) is happy…but with regard to what happiness is they differ, and the many do not give the same account as the wise." In the domain of positive psychology, Diener (1984, 2000) explains happiness as having more of life satisfaction and psychological well-being with positive effect and less of negative effect. Seligman and Csikszentmihalyi (2005) positive psychology is focused on happiness, well-being of individuals, creativity and positive experiences with life. Seligman and Csikszentmihalyi (2005) positive psychology is focused on happiness, well-being of individuals, creativity and positive experiences with life. When an individual assigns different meanings to the difficulties faced by him in life psychological sense of well-being stand out as the important one (Bradburn & Caplovitz, 1965).

Happiness results in subjective well being when it is combined with other positive emotions (Sagiv et al., 2004). Well being is said to have exist when the positive emotions of a person are stronger than the negative emotions (Diener, 2000). Quality of work life can be evaluated by focusing on both, subjective well being i.e. self-perceived happiness and satisfaction with one's life along with measures of objective well being (Myers, 2013). This broader perspective was further researched upon in subsequent years and an expanded form of well-being emerged (Ryan & Deci, 2000). Freire (2016) psychological well-being is a major factor influencing stress. Psychological stress has most significant impact on the mental health and

overall well-being of people (Moeini et al, 2008). High perceived stress is related with low psychological well-being (Burns et al., 2002; Sugiura, 2005; Suleman, 2018).

Strizhitskaya et al. (2019) emotional stability can influence the relation between perceived stress and psychological well-being and found that perceived stress has an inverse impact on emotional stability of people which further affects their psychological well-being. Kozka, & Przybyla-Basista (2016) ego-resiliency has partial mediation effect on the relationship between perceived stress and psychological well-being.

The mediating role of subjective happiness

In the domain of positive psychology, Diener (1984, 2000) explains happiness as having more of life satisfaction with positive effect and less of negative effect. Seligman and Csikszentmihalyi (2005) positive psychology is focused on happiness, well-being of individuals, creativity and positive experiences with life.

Baumeister et al, (2013) satisfaction of needs and wants increase happiness in the present but do not add to meaningfulness in life which is related not only to present but also to past and future. Thus happiness is related only to being a 'taker' whereas meaningful life is related to being a taker as well as a giver. Abe (2016), at times there may be a trade-off between "happiness and meaning-making" and a change in their patterns can occur in long-term.
Parks et al (2012) carried out three studies based on three statements: what are the traits of happiness seekers; what do they do purposefully for becoming happier; and how they make use of the self-help resources, and found a preliminary picture of the characteristics of happiness seekers' and their naturalistic behaviors.

There is significant relationship between subjective happiness, psychological domain of quality of work life, and life satisfaction (Medvedev & Landhuis, 2018).

Happiness depends on "aggregated positive and negative feelings" (Diener, 1984). It is an outcome of subjective evaluations of life experiences of an individual or his/her satisfaction with life (Diener et al., 2005). In terms of psychology, happiness is often used synonymously with subjective well-being (Lyubomirsky, 2013). Happiness is an emotion which results in an individual's subjective well-being when combined with other positive emotions (Diener, 2000).

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Research on wellbeing can be categorised into two groups: the hedonic viewpoint which focuses merely on subjective well-being, generates happiness which is the result of more positive and less negative effect leading to greater life satisfaction; The pleasure and pain continuum in human experiences can be assessed using the Subjective Well Being (SWB) scale which comprises of three components: satisfaction with life, presence of positive mood, and the non- existence of negative mood (Diener & Lucas 1999).

Happiness results in subjective well being when it is combined with other positive emotions (Sagiv et al., 2004). Subjective well being is said to have exist when the positive emotions of a person are stronger than the negative emotions (Diener, 2000). Quality of work life can be evaluated by focusing on both, subjective well being i.e. self-perceived happiness and satisfaction with one's life and objective well being (Myers, 2013). This broader perspective was further researched upon in subsequent years and an expanded form of well-being emerged (Ryan & Deci, 2000).

Some of the latest studies conducted after the outbreak of COVID-19 pandemic which deal with the stressful condition and psychological well-being of health care workers across the world have been discussed below. The effect of COVID-19 was reported to be different for different demographic profiles in various studies carried out during January 2020 to July 2020. The doctors and nurses in hospitals dealing with patients with COVID-19 in China, reported high rates of symptoms of stress, depression, anxiety and even insomnia. The major concern as of now is to promote the mental wellbeing health care workers. The results of the study show that the female health care workers who work at intermediate levels in health care sector are the most affected and exhibit symptoms of stress and anxiety (Lai et al., 2020). Badahdah (2020) female physicians were more impacted by COVID-19 and it was the older physicians in whom the level of stress was low as compared to younger physicians. Married physicians were more stressed out as compared to unmarried ones. But, the study reported that level of anxiety was the same in both male and female physicians of Oman which affected their overall well being.

Yang and Ma (2020) found that the pandemic COVID- 19 significantly influenced the emotional well being of people who reside in Hubei, considered to be the epicenter of this pandemic. And as compared to the study by Badadah (2020), here the emotional wellbeing of the elderly people were more affected by pandemic; and similar to this study here also the married suffered more in terms of emotional wellbeing. No significant difference was found between the emotional wellbeing of males and females during the outbreak of COVID-19.

Varshney et al (2020), elderly have less psychological effect of COVID-19 and majority respondents (66.8%) were minimally affected by the pandemic and (12.7%) respondents were severely psychologically hit by it. Out of a sample of 653 people, 33.2% had psychological effect due to COVID-19. Respondents who reported to be psychologically affected were younger in age, were females and also had a known physical co-morbidity.

Bansal et al (2020) a number of issues are faced by clinicians during COVID-19 like depression, burnout, grief and social distancing and isolation which further add to anxiety and suggested that mental, physical and spiritual wellness of physicians is important to fight against this pandemic. Shanker et al (2020), health care professionals have to meet this challenge with humility and compassion by taking preventive measures to keep themselves physically and mentally sound. Puppo et al. (2020), there is very high stress perceived stress prevalent among the health care professionals which was due to inconsistent policies and arrangements made by health authorities of the country.

Adams and Walls (2020), the exposure of health care workers to severe risk conditions during COVID-19 needs to be answered using measures like telemedicine, patient advice telephone lines and sophisticated triage systems. Ensuring priority health care measures to the families of physician and health care workers can also induce confidence in them and reduce their anxiety for their family who is in high risk because of them. Frequent conversation with the frontline health care professionals can also help in reducing their anxiety.

It is very important for the health care societies to acknowledge the wellbeing of physicians on priority and disseminate resources to them during this pandemic (Ferry, 2020). Brazeau (2020), the COVID-19 pandemic has actually taught everyone the relevance of wellbeing and the importance of seeking psychological advice and support if required. Wellbeing should be promoted through efficient leadership so that an optimistic picture can be seen beyond this pandemic. Various studies conducted on Physicians' and health care workers' after the outbreak of pandemic COVID 19 are shown in Table 1.

Table 1: Studies conducted on Physicians' and health care workers' after the outbreak of pandemic COVID 19:

Author	Year	Area of study	Measures	Conclusion
Lei et al	March 2020	China	Patient Health Scale, Impact of Event Scale (Revised), Generalized Anxiety Disorder scale, and Insomnia Severity Index	Majority of the physicians and nurses suffered from symptoms of depression, anxiety and insomnia.
Badahdah et al	(April, 2020)	Oman	Perceived Stress scale; Generalized Anxiety Disorders	This pandemic affected the mental health of physicians

			Scale and; The WHO Well-being Index	especially young female doctors
Yang and Ma	(April, 2020)	China	Perceived knowledge, Emotional well being	Perceived knowledge has indirect effect on emotional wellbeing of people.
Varshney et al	(May, 2020)	India	Impact of Event Scale (Revised)	COVID 19 has a significant psychological impact on one third of the sample surveyed and factors like age younger people reported to be more impacted), gender (females were reported to be more impacted) and known physical co-morbidity.
Bansal et al	(April, 2020)	U.S.A	Clinicians' wellness (mental, physical and spiritual health for prevention against burnout)	The paper addresses the various challenges ranging from social distancing to online education of children w.r.t the clinicians.
Shanker et al	(March, 2020)	U.S.A	-	The immunologists are forced to reduce direct face to face interaction with patients.
Blake et al	April, 2020	U.K	Fidelity (Delivery and Engagement); Implementation Qualities	Using Agile technology, the authors developed a digital package for supporting the psychological wellbeing of healthcare workers during the course of COVID-19.
Puppo	2020	Colombia	Perceived Stress Scale	There is high perceived stress related with COVID-19 due to inconsistent health care policies by the administrators. Also, the sample reported to be under high stress due to measures like quarantine, and fear of passing the disease to elderly in the family.
Adams and Walls	March, 2020		-	The health care workers are undergoing severe anxiety and stress and frequent conversation can be useful in reducing the anxiety level.
Ferry	July, 2020	U.S.A	-	The governments and policy makers must assign utmost priority to the wellbeing of physicians during COVID-19
Brazeau et al	June, 2020	U.S.A	-	COVID-19 pandemic has instilled the concept of wellbeing among people
Jordan et	2016		65 items self developed scale	Work performance of nurses is

al				influenced by their stress and coping abilities and affect their performance.
Arslan	June, 2020		Perceived Stress Scale (Cohen et al, 1983); Optimism and Pessimism Measure (Arslan and Yıldırım 2020); Psychological inflexibility (Bond et al, 2011); Brief Symptom Inventory (Derogatis and Fitzpatrick 2004)	Stress due to COVID-19 has a significant influence on psychological inflexibility
Brooks et al,	2020		Review of 24 papers based on stress factors	COVID-19 is an important stress factor affecting the mental well-being of people
(Statici et al; Gunnell et al	2020 2020		Warwick-Edinburgh Mental Well-Being Scale (Tennant et al. 2007); Turkish version of the FCV-19S (Satici et al. 2020) Fear of COVID-19 Scale (Ahorsu et al. 2020); Intolerance of Uncertainty Scale (Carleton et al. 2007).	Pandemic like COVID-19 leads to severe mental ailments
Kowal et al	June 2020	24 countries	Perceived Stress Scale (PSS; Cohen et al., 1983; Cohen & Williamson, 1988).	High stress is faced by young people, by females, be single people and those having more number of children.

The Present Study

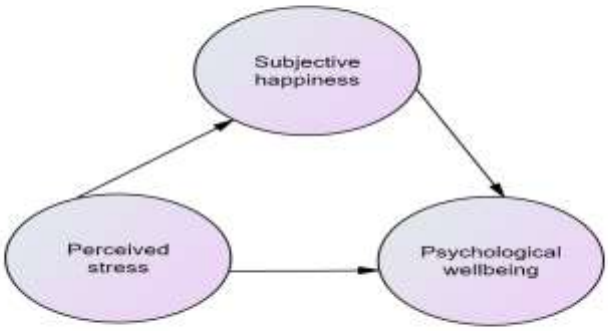
Based on the empirical and theoretical evidence, as presented above, the current study was undertaken to explore the dual objectives of finding out the impact of perceived stress on psychological well-being of the health care workers taking care of COVID-19 patients and to find out the mediation effect of subjective happiness on relationship between perceived stress and psychological well-being. The conceptual model proposed in the research is shown in Figure 1. The following hypothesis was addressed:

Hypothesis

$H_0$1: Perceived Stress has significant effect on Psychological well-being of health care workers

$H_0$2: Subjective happiness mediates the relationship between perceived stress and psychological well being.

Figure 1: The Conceptual Model



Methods

Participants and procedure

This research was carried out on a sample of 231 health care workers out of which 102 were physicians, 81 were nurses and 48 were paramedical staff. Out of the total sample 71 (69%) were females and 160 (31%) were males deployed in COVID-19 ward of a Private Medical College Hospital of Northern India.

Instruments

Psychological Well Being Scale

Famous psychologist Ryff (1989) developed a 42-item "Psychological Well Being (PWB) Scale" for measuring six measures of wellbeing and happiness. The original scale contained 8 items. As items with negative item correlation were removed from the three scales used for the study, one item was dropped from psychological wellbeing scale. The responses to the 7 item scale were sought using the 7 point scale; 7 indicating strongly agree and 1 strongly disagree. The total score ranged from 4 to 28 wherein the higher scores indicated higher psychological well being (E.g. "I lead a purposeful and meaningful life during COVID-19).

Perceived Stress Scale

Perceived stress was assessed using the Perceived Stress Scale given by Sheldon Cohen (1994). Two items were dropped after finding the results of inter- item correlation. The responses to the 8 items scale were sought using the 4 point scale; 4 indicating strongly agree and 1 strongly disagree. (e.g. In the last month, how often have you been upset because of something that happened unexpectedly?)

Subjective Happiness Scale

Happiness can be used to measure Subjective Happiness Scale (Lyubomirsky & Lepper 1999). The scale comprises of four items out of which one item was dropped on account of poor inter-item correlation. The responses were measured using a 7 point Likert rating scale (1 for very unhappy or strongly disagree and 7 for very happy or strongly agree) for the remaining 3 items. The total scores ranged from 4 to 28.
The relationship between psychological well being, Subjective happiness and Psychological well-being was assessed with the help of correlation analysis and Structural Equation Modeling.

Data Analyses

Structural equation modeling was carried out after we calculated descriptive statistics, tested internal reliability and performed correlation analysis. The values of skewness and kurtosis were normally distributed as they fall within the acceptable limit of |2| (Field, 2009). Measurement model was established to examine factor structure of CFA model. Findings from the measurement model are presented using the cut points of various indices.

RESULTS

Table 2: Frequency Distribution

Variable	Frequency	Percent	Mean	Standard Deviation
Gender				
Males	71	30.7	1.693	.4624
Females	160	69.3		
Age			1.9048	.7573
25-35	78	33.8		
36-45	97	42.0		
46 and above	56	24.2		

The preliminary analysis reflect acceptable distribution of data as the range of skewness was found as -.042 to 1.19 and values of Kurtosis ranging between -0.7 to 1.02.

Demographic distribution showed that in case of females the impact of perceived stress on psychological well being was far more than male health care workers.

Table 3: Descriptive Statistics of Perceived Stress

Perceived Stress	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis	α
In the last few months (since the onset of COVID-19), how often have you felt that you were unable to control the important things in your life? (PS 2)	1.684	1.2157	1.0	5.0	1.813	2.116	
In the last few months (since the onset of COVID-19), how often have you felt nervous and "stressed"? (PS 3)	1.7619	.96438	1.0	5.0	1.403	1.825	
In the last few months (since the onset of COVID-19), how often have you felt confident about your ability to handle your personal problems? (PS 4)	1.9481	1.08222	1.0	5.0	1.059	.452	
In the last few months (since the onset of COVID-19), how often have you felt that things were going your way? (PS 5)	2.1602	.82112	1.0	4.0	.171	-.652	
In the last few months (since the onset of COVID-19), how often have you found that you could not cope with all the things that you had to do? (PS 6)	2.3593	.91171	1.0	4.0	-.045	-.893	
In the last few months (since the onset of COVID-19), how often have you been able to control irritations in your life? (PS 7)	1.9004	1.00154	1.0	4.0	.778	-.581	
In the last few months (since the onset of COVID-19), how often have you felt that you were on top of things? (PS 8)	1.7273	.86933	1.0	4.0	1.001	.146	
In the last few months (since the onset of COVID-19), how often have you been angered because of things that were outside of your control? (PS 9)	1.4372	.77133	1.0	4.0	1.703	2.003	

Two items were dropped from the above mentioned Perceived Stress Scale after calculating the inter item correlation. Firstly, "In the last few months (since the onset of COVID-19), how often have you been upset because of something that happened unexpectedly? (PS 1)"

and secondly, "In the last few months (since the onset of COVID-19), how often have you felt difficulties were piling up so high that you could not overcome them? (PS 10)".

Table 4: Descriptive Statistics of Subjective Happiness

Subjective Happiness	Mean	Standard Deviation	Min	Max	Skewness	Kurtosis	α
Compared to most of my peers, I consider myself happier	4.0823	1.07022	2.0	7.0	.457	.172	
I am generally very happy and enjoy life regardless of what is going on, getting the most out of everything.	3.7056	.97352	2	6.0	-.008	-1.007	
I am generally not very happy. Although I am not depressed, but I am actually not as happy as I am supposed to be.	4.7706	.94372	2.0	7.0	-.090	-.385	

Table 5: Descriptive Statistics of Psychological Well-being

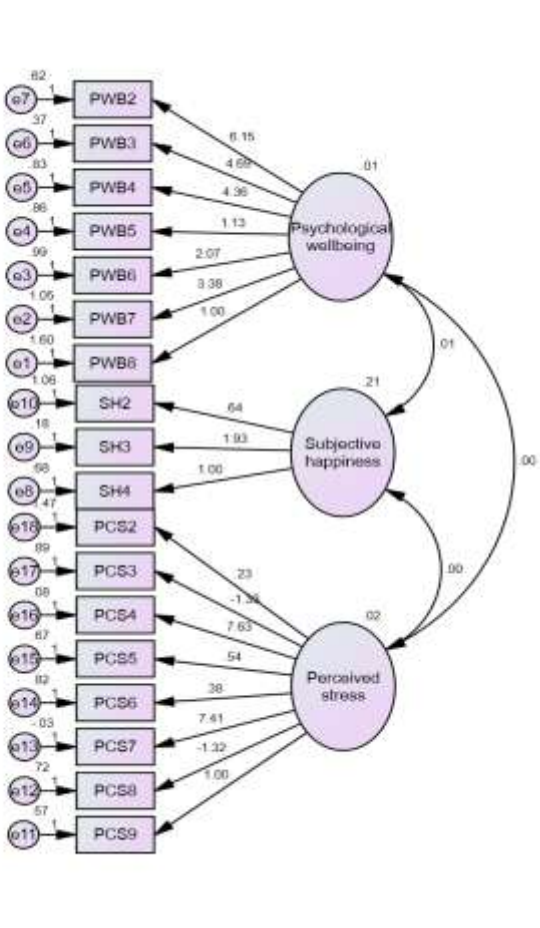
Psychological well-being	Mean	Standard Deviation	Min	Max	Skewness (b/n -1 and +1)	Kurtosis (b/n -3 and +3)
My social relationships are supportive and rewarding since the outbreak of COVID-19 (PWB 2)	4.623	1.0263	2.0	7.0	.223	-.516
Since the outbreak of COVID-19, I'm engaged and interested in my routine activities as usual (PWB 3)	3.848	.7904	2.0	7.0	.436	-.537
I actively contribute to the happiness and well-being of others during COVID-19 (PWB 4)	5.009	1.0257	3.0	6.0	.056	-.373
During COVID-19, I find myself competent and capable in the activities that are important to me (PWB 5)	4.909	.9397	2.0	7.0	-.293	.090
I am a good person and live a good life performing my duties during COVID-19 (PWB 6)	5.303	1.0189	2.0	7.0	-.139	-.460
I am optimistic about my future during COVID-19 (PWB 7)	4.874	1.0862	2.0	7.0	-.097	-.401
People respect me because of my profession and role during COVID-19 (PWB 8)	4.827	1.2702	1.0	7.0	-.030	-.177

The item, "I lead a purposeful and meaningful life during COVID-19 (PWB 1)" was removed from the above mentioned scale after inter item correlation from the scale of Psychological wellbeing. Similarly, one item from the four of Subjective Happiness scale was removed - "In general, I consider myself a very happy person".

Table 6: Descriptive Statistics of variables

Variable	Mean	Std. Dev.	Min	Max	Skewness	Kurtosis	α
Age	38	0.74	1.0	3.0	0.029	-1.18	-
Gender	1.58	0.49	1.0	3.0	-.308	-1.940	-
Perceived Stress	39.21	3.85	1/0	7.0	-.25	-.70	0.531
Subjective Happiness	16.48	4.65	1.0	7.0	-0.42	-.44	0.435
Psychological Well-being	17.50	2.47	1.0	7.0	.34	-.26	0.460

Figure 2: Confirmatory Factor Analysis



The result of test-retest reliability of the scale was (r=.78) and item total correlation varied between .75 and .80. The higher score of goodness of fit (GFI) index indicated higher level of Psychological well being (NFI=.96 CFI=.97, RFI= .95, GFI=.95, AGFI= .96, RMSEA= .056, and IFI= .95). The Cronbach Alpha which is a measure of internal consistency was .78.

The results of the regression analysis show that Perceived stress and Subjective happiness are correlated with Psychological wellbeing.

Table 7: Regression Weights of Perceived Stress

Variable	Estimate	S.E	C.R	P
PCS 2	1.000	.042	23.102	.001
PCS 3	.862	.051	23.854	.001
PCS 4	.938	.040	23.593	.001
PCS 5	.899	.038	23.777	.001
PCS 6	.895	.042	21.306	.001
PCS 7	.827	.049	23.593	.001
PCS 8	.815	.043	21.743	.001
PCS 9	.806	.051	22.309	.001

Table 8: Regression Weights of Subjective Happiness

Variable	Estimate	S.E	C.R	P
Compared to most of my peers, I consider myself happier	.951	.030	23.234	.001
I am generally very happy and enjoy life regardless of what is going on, getting the most out of everything.	.902	.031	23.912	.001
I am generally not very happy. Although I am not depressed, but I am actually not as happy as I am supposed to be.	.824	.047	21.320	.001

Table 9: Regression Weights of Psychological well being

Variable	Estimate	S.E	C.R	P
PWB 2	.878	.041	21.314	.001
PWB 3	.969	.046	20.843	.001
PWB 4	1.115	.048	23.269	.001
PWB 5	1.066	.046	23.225	.001
PWB 6	1.054	.046	22.835	.001
PWB 7	.997	.046	21.787	.001
PWB 8	1.000	.52	20.12	.001
PWB 9	.982	.046	21.787	.001

Table 10: Model Fit

Index	Value	Acceptance level	Does it meet the acceptance level?
GFI (Hu & Bentler, 1999; Hooper et al, 2008)	0.95	greater than 0.90	Yes
RMSEA (Hu and Bentler, 1999)	0.56	0.60 or less	Yes
AGFI (Hooper et al, 2008)	0.96	greater than 0.90	Yes
NFI (Hu & Bentler, 1999; Kline, 2015; Byrne 2010)	0.96	greater than 0.90	Yes
CFI (Hu & Bentler, 1999)	0.97	greater than 0.90	Yes

Further structural modeling was conducted and model fit was analysed. Thus, the values obtained in Table 10 adequately represent the sample data. The model fitting process determines the goodness-of fit between the sample data and the hypothesized model (Jang, 2008).

Goodness of fit indicates how well the specified model reproduces the observed covariance matrix among the indicator items (i.e. the similarity of the observed and estimated covariance matrices). The generally acceptable limit indicating that the fit is acceptable is when RMSEA ≤ 0.10 (Kline, 2015); RMSEA less than .10 is acceptable ((Hu & Bentler, 1999; Kline, 2015) Acceptable model fit is indicated by a CFI value of 0.90 or greater (Hu & Bentler, 1999). Similarly, alternative measures of fit, such as the NFI, the GFI are considered acceptable if above 0.90 (Hu & Bentler, 1999). The recommended level of GFI and AGFI ranges between 0, which indicates a poor fit to 1, which indicates a perfectly good fit), and the recommended acceptance level is 0.90 (Hooper et al, 2008). The hypothesized model was tested using structural equation modeling which indicated good fit.

Further, the bootstrap method is used to analyse the significance of mediation role of subjective happiness between perceived stress on psychological well being. In this case there is a possibility of partial mediation effect and full mediation effect. The difference between partial mediation effect and full mediation effect lies in the fact that direct effect becomes insignificant in the case of full mediation effect and remains significant in case of partial mediation effect. The minimum required condition in both the cases is that the total effect as well as indirect effect is to be found statistically significant. The monte carlo bootstrap method is used in the study due to its popularity and robustness of the results. The results obtained by applying monte carlo bootstrap mediation effect of perceived stress on psychological well being via subjective happiness is discussed in Table 11.

Table 11: Mediation of subjective happiness between perceived stress on psychological well being

Type of effects	Construct			Standardized Beta coefficient	P value	Remark
	Exogeneous	Mediating	Endogenous			
Total effect	Perceived stress	Subjective happiness	Psychological well being	0.500	0.021	Significant effect of Perceived stress on Psychological well being exists
Indirect effect	Perceived stress	Subjective happiness	Psychological well being	0.173	0.017	Significant mediation effect of Subjective happiness exists between Perceived stress and Psychological well being
Direct	Perceived	Subjective	Psychological	0.247	0.015	Significant Partial

effect	stress	happiness	well being			mediation effect of Subjective happiness exists between Perceived stress and Psychological well being

The results indicate that total effect of Perceived stress on Psychological well being is found to be 0.500 with p value of 0.021 indicating the existence of significant total effect in the direction of Perceived stress on Psychological well being. The results also indicate that the indirect effect of Perceived stress on Psychological well being via Subjective happiness is also found to have standardized Beta of 0.173 with p value of 0.17. Hence due to the presence of significant indirect effect along with direct effect of Perceived stress Psychological well being it can be concluded that Subjective happiness is a significant mediating construct between Perceived stress and Psychological well being.

Discussion

Results indicate that high level of perceived stress leads to feeling of low psychological well being. Also, if subjective happiness is low, the psychological well-being was found to be low among the health care workers during COVID-19. Pupo et al (2020) the high level of perceived stress was found to be related with the non compatibility between the arrangements of Columbian government and scientific findings regarding COVID-19. Xua et al (2020), the incidence of depression and anxiety was very high among the surgical staff during the outbreak of COVID-19 which is an acute respiratory disease which had a bearing on their psychological wellbeing. There is definite relationship between perceived stress and sleep quality (Zhao et al, 2020). Dua et al (2020), the frontline health care workers working in hospitals of Wuhan were undergoing severe stress and depression and were facing moderate to high level of stress which affected their subjective happiness.

Limitations and contributions

The research is based on cross sectional research design as the health care workers including the physicians, nurses and para medical staff was replaced by new ones after a working shift of ten days. So, reaching out the same team after the passage of certain time was not possible. A longitudinal study might be carried out for further exploring the mediation model. Also, convenient sampling was used which may undermine the generalization of the results. The sample was from a Private Medical College of Northern India which was converted into COVID-19 hospital by the State Government of Uttar Pradesh. Hence, geographically the study was limited.

Future research can be carried out for exploring the relationship between perceived stress and psychological wellbeing by using some other demographic moderators like age, gender, number of children etc. or more psychological factors which have influenced the health care workers during COVID-19.

Conclusion

The results show that subjective happiness fully mediates the effect of perceived stress of physicians and health care workers on their psychological wellbeing. The data suggests that perceived stress in itself do not have any effect on psychological wellbeing. The findings will go a long way in suggesting the policy makers to find out remedial measures for reducing this stress because if the frontline health care workers are not mentally happy, they may not do justice to the patients who consider them as Godsend during this pandemic.

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