

Psychosocial Perceptions as Significant Impact Modifiers A Mixed Method Research Among Hospitalized Covid-19 Patients in A Tertiary Care Hospital in Coimbatore District, Tamil Nadu

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ABSTRACT

Context: Covid 19 pandemic which evolved in successive waves had profound psychosocial impact on affected individuals. Perceptions had impact on both individual and environmental level with potential behavioural consequences. The aim of the research is to study the psychosocial perception and psychological impact of COVID-19 among hospitalized COVID-19 patients.

Methodology: The study was a mixed method research (Quan-Qual sequential design) conducted in the Covid wards of a tertiary care hospital in Coimbatore district. The psychological impact was assessed using the General Health Questionnaire, Perceived Stress Scale. The results of quantitative analyses and qualitative analyses were expressed as proportions and done using thematic analysis using grounded theory respectively.

Results: About 55% of the hospitalized Covid-19 patients had psychological impact. On multivariate analysis, the factors which emerged as independent risk factors for presence of psychological morbidities due to COVID were presence of high stress level, sleep disturbances and their perception of COVID as high threat.

Conclusions: Focussed Counselling with specific reference to attend to spiritual health component in addition, would go a long way in diminishing immediate and long-term psychological impact due to covid-19 illness.

Key-words: Covid-19, Psycho social perception, psychological impact, Coping factors, Faith, Stigma

INTRODUCTION

Covid-19 pandemic which had been devastating the globe in successive waves was indeed an indicator of vulnerability and fragility of the world and the inhabitants therein.^{1,2} Covid-19 pandemics also evolved as an infodemic in the hands of social media and the gravity of the crisis has impacted psychosocial health of both the general public and individuals³.

Psychological effects may be caused by individuals' fear of becoming ill themselves, fear that those close to them will become ill or fear of dying. Feelings of fear and helplessness together with reports of shortages in medical supplies in the current epidemic are liable to increase stress³. Indeed, previous research on viruses revealed that such situations exert an emotional impact on the stress and resilience levels of individuals around the world². During the out-

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break of flu, about 10–30% of the general public reported major fears of contracting the disease³. A study of COVID-19 conducted in China found that among 53.8% rated the psychological impact of the outbreak as moderate or severe, 16.5% reported moderate to severe depressive symptoms, 28.8% reported moderate to severe anxiety symptoms and 8.1% reported moderate to severe stress levels⁴. Another study that examined 52,730 participants in Hong Kong found that 35% reported feeling of stress from COVID-19, with women reporting higher levels of stress than men⁵

An effective pandemic mitigation and preparedness strategy requires addressing both physical and psychological impact and hence the current study is undertaken during the first wave of Covid-19 pandemic to find out the pattern and magnitude of psychological impact of Covid-19 on affected individuals. This operational research would contribute towards planning and implementation of focused psychosocial support strategies for patients.

In order to provide a holistic public health care and service to the public in this COVID-19 pandemic, there is a need to study their psychosocial perception and psychological impact. Therefore, the current study was planned with an objective of studying the psychosocial perception and psychological impact of COVID-19 among the persons affected with COVID-19 using mixed methods research.

SUBJECTS AND METHODS

A sequential explanatory design (QUAN – QUAL) was used in this mixed method research. After obtaining the Institute ethical clearance, the study was conducted in the month of July 2020 in PSGIMSR a tertiary hospital in Coimbatore, Tamil Nadu. Using the pooled prevalence of 44% psychological morbidity (distress) from a systematic review⁶ and with an absolute precision of 8%, the sample size was calculated to be 182 subjects. Adding a non-response rate of 10%, the sample size was rounded to 200 subjects. From among the 12 wards in Covid block, one ward was randomly selected and all the eligible patients were recruited by consecutive sampling till the required sample of 200 is reached. A subsample of 20 (10%) was subjected to In-depth interviews to get information on perception and explore and understand reasons associated with psychological impact. Data was collected from 200 subjects who were tested positive for COVID 19 and are admitted in COVID 19 Block of PSGIMSR. All COVID 19 patients aged ≥18yrs who are admitted in COVID 19 ward in PSGIMSR. Those who were sick and admitted in ICU were excluded.

The psychological impact was assessed using the General Health Questionnaire, Perceived Stress Scale⁷. From 10 % (20) subsample, In-depth interview was done to explore and understand the reasons and the undermined situation associated with the psychological impact using an interview guide. A

structured questionnaire was prepared, piloted and pre tested. The questionnaire included socio-demographic details of the participant, presenting complaints, psychosocial perception of COVID19. Modified Prasad's classification was used for calculating SES.⁸ 12 itemed General health questionnaires (GHQ 12) were used to screen for presence of psychological Impact.

Data analysis: Quantitative data were analyzed using SPSS version 24: IBM. For qualitative data analysis, all interviews were audio recorded and transcribed verbatim and then translated into English. A framework analytical approach was used for data analysis. This process, involving a number of highly interconnected and iterative stages, began with data immersion. This was followed by a series of other stages involving identifying a thematic framework: sifting through the data, identifying meaningful and relevant quotes; placing the quotes under the appropriate thematic category; mapping; and finally interpretation. Once all the interviews were coded, segments of text that were related to a common theme were pieced together and in this manner emergent themes were identified. The qualitative analysis was done using thematic analysis using grounded theory.

RESULTS

Among the 200 subjects nearly half were in the age group of 50 yrs and above, graduates and were in class I SES. More than half were males and were in occupation level of skill level I. Most of them were married and were in nuclear families. Three fourth of the study subjects had some co morbidities. (Table 1)

Majority of the affected subjects perceived COVID as a high threat to their life and had a high level of stress. More than half of the subjects had psychological impact. (Table 2)

On univariate analysis psychosocial perception as high threat, measure of high stress, educational status, marital status, high SES and presence of sleep disturbance were significantly associated with psychological impact. (Table 3) However on multivariate analysis, the factors which emerged as independent risk factors for presence psychological morbidities due to COVID were presence of high stress level (as measured by PSS scale), sleep disturbances and their perception of COVID as high threat.

Qualitative: From the in-depth interview (IDI) of 20 (10%) subjects, there emerged two categories like: factors related to environment and factors related to person (Table 5). Finally, all these gave rise to the thematic flow of factors influencing the process of getting psychologically affected. From the IDI the factors that led to psychological impact among the study subjects were (codes that had emerged were) shame, worry, guilt, torture, fear and stigma. These various codes gave rise to two categories, at personal level and at community level.

Table 1. Sociodemographic details of the study subjects (N= 200)

Sociodemographic variable	Participants (%)
Age	
≤30yrs	33 (16.5)
31-40yrs	42 (20.5)
41-50yrs	34 (17)
>50yrs	92 (46)
Gender	
Male	118 (59)
Female	82 (41)
Education	
Never attended	15 (7.5)
1-5th standard	20 (10)
6-12th	71 (35.5)
Graduates	94 (47)
Occupation	
Skill I	105 (52.5)
Skill II	29 (14.5)
Skill III	40 (20)
Skill IV	26 (13)
Per Capita income	
≥7533	85 (42.5)
3766-7532	31 (15.5)
2260-3765	50 (25)
1130-2259	23 (11.5)
<1130	11 (5.5)
Marital status	
Married	168 (84)
Unmarried	32 (16)
Type of family	
Nuclear	152 (76)
Joint	48 (24)
Co morbid condition	
Present	60 (30)
Absent	140 (70)

Factors at Personal level:

At a personal level the codes related to psychological perception due to covid were fear, guilt, worry, and

torture. Fear was related to fear of losing their life, leaving their loved ones, economic crisis and getting complications because of COVID. As said by one male person who was HIV positive with some complication.

“Before my marriage I came to know that I am HIV positive...with great sacrifice my wife agreed to marry me forgoing all the intimacy.... we had adopted one girl baby...all these days we struggled with this HIV its complication...somehow, we managed.... but now this dreadful COVID has come on top of it.... I don't know what will happen to me now...if I die who will be there for my wife and daughter”

Factors at Community level

At community level the codes were Stigma, shame, fear. Fear was related to their workplace, job and neighbours on the manner of their treatment, behaviours etc. With these codes and categories there emerged a conceptual model on psychological impact of Covid 19 among the affected persons.

Table 2: Perceived threat of COVID, Stress levels, and psychological morbidity among persons affected with COVID 19 (N= 200)

Factor	Participants (%)
Perceived threat of COVID 19	
Low threat	79 (39.5)
High threat	121 (60.5)
Measure of stress among COVID 19	
Low stress	65 (32.5)
High stress	135 (67.5)
Psychological morbidity	
Absent	90 (45)
Present	110 (55)

Table 3: Factors affecting psychological impact among COVID 19 affected persons

Risk factor	Psychological Impact		Total (N=200)	P value
	Absent (n=90) (%)	Present (n=110) (%)		
Psychosocial perception				
Low threat	76 (84.44)	45 (40.91)	121	<0.001
High threat	14 (15.56)	65 (59.09)	79	
Measure of stress(PSS)				
Low stress	56 (62.22)	9 (8.18)	65	<0.001
High stress	34 (37.78)	101 (91.82)	135	
Educational status				
Never attended,	8 (8.89)	28 (25.45)	36	0.002
1-5 std	82 (91.11)	82 (74.55)	164	
HSS, Professional	0	0	0	
Marital status				
Married	68 (75.56)	100 (90.91)	168	0.003
Unmarried	22 (24.44)	10 (9.09)	32	
Socio economic status				
SES I, II,III	80 (88.89)	86 (78.18)	166	0.04
SES IV,V	10 (11.11)	24 (21.82)	34	
Sleep disturbances				
Absent	83 (92.22)	58 (52.73)	141	<0.001
Present	7 (7.78)	52 (47.27)	59	

Table.4 Multivariate adjusted analysis of factors affecting the psychological impact among COVID 19 affected persons (N=200)

Variable	Adjusted OR (95%CI)	P value
Psychosocial perception		
Low threat	1	0.003
High threat	3.9(1.5-9.8)	
Measure of stress (PSS)		
Low stress	1	<0.001
High stress	17.5(6.3-48.3)	
Socio economic status (SES)		
SES I, II, III	1	0.095
SES IV,V	2.85 (0.83-9.71)	
Education		
Primary	1	0.164
Post primary	0.665(0.37-1.18)	
Currently Married		
No	1	0.168
Yes	2.086(0.73-5.92)	
Sleep disturbances		
Absent	1	0.008
Present	4.4(1.4-13.3)	

Note: Binary logistic regression analysis using enter model: The variables entered into the model were psychosocial perception, measure of stress, socio economic status, edu-

cation, current marital status, sleep disturbances which were significant during univariate analysis.

The conceptual model showed that there were always some background factors like financial crisis, chronic sickness, and emotional burdens, when there is an emerge of some triggering factors like Covid infection with symptoms of breathlessness, stigmatizing act of public and unexpected financial need there is psychological impact.

As said by a 60-year-old woman, that COVID 19 had made her to experience social rejection from her own family.

"I stay with my daughter's family, her husband, kids and in-laws since COVID lockdown. When I and my daughter were affected with COVID 19, we both were admitted in Hospital, after getting discharged we wanted to go home. But my daughter's in-laws have said that "only her daughter can come to their house and not me, as I was still sick.... I felt there is no one for me...even when I was very sick no one was there to take care of me...just because I got COVID".

Table.5. Factors that led to psychological impact among the study subjects that were obtained through IDI

CODES	SUB CATEGORIES	CATEGORIES	THEME
Fear	1a. Perception	1.Factors acting at personal level	Interplay of Factors on psychological distress
Sense of imminent death	1b. Reality		
Guilt			
Torture			
Worry			
Stigma	2a. At family level	2.Factors acting at environmental level	
Shame	2b. At community level		
Non acceptance			
Social rejection			

DISCUSSION

The present study had shown that more than half of the study participants (55%) had psychological morbidity. This finding is consistent with a systematic review that revealed the pooled prevalence rate of psychological morbidities with respect to impact of event due to COVID-19 pandemic was 44% (95%CI-42%to47%)⁶. Further various studies on psychological aspects of COVID19 and other similar outbreaks done globally have documented a range of psychological manifestations between 9.2% to 54%⁹⁻¹¹. Sleep disturbances, higher stress levels and personal perception of COVID as high threat emerged as independent risk factors for presence of psychological morbidity due to COVID. Studies in literature have recorded that sleep disturbance results in psychological problems and presence of psychological problem again results in sleep disturbance resulting in a vicious cycle.¹⁰ Kader et al⁹ had shown that people who did not perceive a greater exposure risk were less likely to experience moderate to severe psychological distress due to COVID(OR=0.22;95%CI:0.15-0.31).

However, the present study showed a higher proportion of perceived threat of COVID (60.5%) and increased stress levels (67.5%) among people with psychological impact than other studies in literature^{9-11,18}. This could be because this study was done directly among COVID 19 patients who bore the brunt of attack whereas all above studies have been done among general public and health care workers as surrogates for patients. In addition, this study was done in the initial period of the pandemic when there was abounding uncertainty and stress levels due to COVID19.

Factors acting at personal level: The predominant themes that emerged at a personal level from the qualitative results were shame, worry, guilt, torture, hopelessness, fear and stigma. Studies also had shown that Covid 19 victims have a low psychological tolerance capacity and these people are highly exposed to psychological disorders¹².

Hopelessness, sense of imminent death referred to a state of psychological uncertainty regarding their probability of survival. Confusion or uncertainty

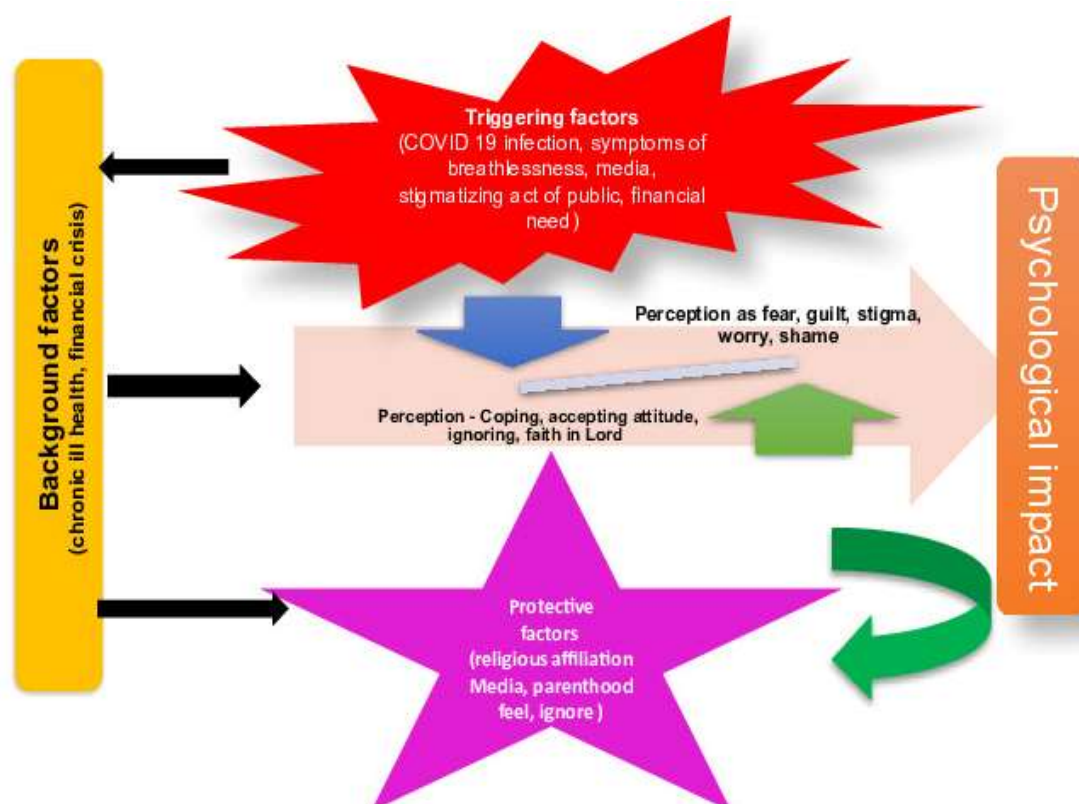
could also arise due to dilemmas of whether to confide or not confide in a wide range of first-hand information about the disease. Jakovljevic et al reported that COVID-19-related infodemic can be associated with psychological disorders and panic reactions in individuals¹⁰. Patients may also be confused, anxious, and prone to extreme behaviours. This is caused by the battle within their mind of what fate awaits them during the course of progression of the disease process. The patients would be left alone in isolation to wonder whether the conditions will worsen and they will get closer to death. This has caused a sense of struggling between life and death. However, varied emotional responses and a sense of struggling between life and death was noted among patients in other epidemics such as SARS due to the unpredictability of the situation and the uncertainty about the time for disease control and seriousness of the danger¹².

Factors acting at family and community level

The present study showed that study participants had fear of stigmatization and some had also really experienced stigmatization because of their COVID-19 disease status. Further the patients had fears of being rejected by family and fear of transmitting the

disease in addition to stigma. This confirmed the fact that COVID-19 pandemic had its impact not only on the physical health but also on psychological health due to the way people are interacting with others leading to widespread stigma and discrimination related to it. The negative consequences of stigma coupled with being infected with corona virus are extremely pernicious, the same way those were evident during SARS and H5N1 outbreak¹². The psychological burden strongly influences people's willingness to seek treatment or even let others know about. This not only impedes the process of effective management and minimization of the spread of the disease but also brings debilitating consequences for the overall well-being of the survivors and their relatives. The model of stigma-induced identity threat talks about the negative consequences stigmatization brings for the overall wellbeing of the people when they appraise the stigmatizing situations and identity them as threatening¹³⁻¹⁵. Social rejection has created a barricade between them and society with repercussions for their physical, psychological health, and well-being. The patients are fearful of being shamed and stigmatized by society, extreme enough to exhibit the symptoms of hysteria. This stigmatization poses a major threat on losing one's own life.

Figure 1: Conceptual model of interplay of various factors on psychological impact with psychosocial perception as impact modifier



The net results of our mixed method research gave rise to our own conceptual model (fig 1). This showed that there are background and triggering factors that leads to psychological impact. It was also found that there are also some protective factors like

religious affiliation, parenthood feel, sound knowledge which protected the COVID affected people from getting the psychological impact. However, in the presence of these background and triggering factors, it is the perception that played a major role

in deciding if a given individual would end up with psychological morbidity or not. It acted as a double edged sword in the way it acted as an impact modifier. If the people perceive it as fear, guilt, worry and stigma they end up in getting impacted psychologically. If they perceive it with accepting and ignoring attitude, and faith in the Lord they do not have the psychological impact. Hence it was concluded from both quantitative and qualitative results that perception acted as a significant modifier of psychological impact. Faith in the living God and firm hope on the omnipotence of the Creator God emerged as prominent resilient factors which favourably tilt psycho perception towards diminishing psychological impact.

Risk perception, or relying on individual intuitive risk judgments to assess various dangers in any given context, plays an important role in human self-protection, and social behavior¹⁶. Risk perception influences individuals' decisions and behaviours. Many studies have demonstrated a link between risk perception and prevention of COVID-19 risks and impact.¹⁶ According to Protection Motivation Theory (PMT)¹⁷ which is a social cognition theory developed to understand how people respond to health threats, an individual's intention of protective behavior is determined by threat and coping appraisal which are two parallel cognitive processes. In PMT, threat assessment emphasizes the severity of health threats, the susceptibility to threat events and the performance of maladaptive behaviors. When individuals have a high-threat appraisal, they are more likely to engage in protective behaviors. Additionally, examining the literature on terrorism risk perceptions, it is also found that risk perception is a multidimensional concept, usually measured from the dimensions of the possibility, severity, controllability and unknown factors of the perceived threat¹⁸. The main impact of COVID-19 includes risks to health and even life safety and poses high degree of risk in all the above dimensions, especially the dimension of controllability and uncertainty during the first wave of the pandemic. Hence this study concludes that virus threat perception can actively modify the magnitude of psychological impact in the presence of other background and triggering factors.

CONCLUSIONS AND RECOMMENDATIONS

This mixed method research has revealed that more than half of the patients affected with COVID 19 had some form of psychological morbidity and educational status, current marital status and socio economic status were the significant determining factors. The independent predictors of occurrence of impact of psychological morbidity were perception, stress level and sleep disturbances. The qualitative results confirmed the fact that perceptions acted as a significant impact modifier towards occurrence or non-occurrence of psychological impact. Hence the present study recommends that focused counselling

with specific reference to attend to spiritual health component in addition, would go a long way in diminishing immediate and long term psychological impact due to covid-19 illness. In addition to regular treatment for COVID-19, all patients should integrate previous and ongoing professional psychological interventions.

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