

ASSESSING THE PSYCHO-PHYSIOLOGICAL HEALTH OF COVID-19 PATIENTS ACROSS DEMOGRAPHIC GROUPS

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ABSTRACT

The COVID-19 pandemic has brought unprecedented challenges to global health, with profound implications for individuals' psycho-physiological well-being. In this study, we investigate the psycho-physiological state of 40 COVID-19 patients, considering factors such as gender, age, marital status, and location. Through purposeful sampling and the utilization of Sanjay Vohra's Psycho-Physiological State Inventory, we employ descriptive and inferential statistics to analyze our findings. Our results reveal significant insights into how these demographic variables relate to the psycho-physiological state of COVID-19 patients, shedding light on the multifaceted impact of the pandemic on individuals' mental and physical health.

Key words: COVID-19 Patients, Gender Differences, Health Assessment, Pandemic Research, Physical Well-being, Psychological Well-being, Psycho-Physiological State,

Introduction

Periodic pandemics have occurred in human history, killing millions of people and having a devastating effect on social cohesion. The World Health Organisation defines a pandemic as the global spread of a new disease that has resulted in widespread illness and death (2020). Throughout history, pandemics have occurred at various times. Each epidemic had far-reaching consequences on human society, economy, and psyche. Millions of people have been harmed by pandemics like the influenza pandemic, the severe acute respiratory syndrome (SARS), and the Middle East respiratory syndrome (MERS). There is still a pandemic affecting people now. The rapid global spread of COVID-19, which was originally detected in Wuhan, China, has far-reaching consequences. Like past pandemics, COVID-19 had a wide impact and led to numerous deaths soon after it emerged (World Health Organisation, 2020). Humanity is currently amidst a

phase that requires meticulous management. This calls for a discussion of the short- and long-term impacts of COVID-19, as well as the findings of relevant scientific studies. The prevention of COVID-19's social, political, psychological, and economic devastation makes scientific study of the virus crucial. Based on the historical negative psychological consequences of past diseases and natural disasters, this study intended to maintain a projection of how COVID-19 could influence people mentally. There were suggestions offered about how to deal with these problems in the near and distant future.

COVID-19's Physiological and Psychological Impact in Context

COVID-19 sufferers are most affected. In COVID-19 studies, as in other epidemics, most patients face negative psychological conditions like posttraumatic stress disorder, anxiety, depression, loneliness, distress, fear, anger, and fear of being tagged. Large-scale catastrophic events like natural catastrophes and wars have been shown to harm mental health. Depression, rage, anxiety, low self-esteem, and PTSD are the most common behavioural and psychological illnesses in such instances. According to Van Bortel et al. (2015), the Ebola pandemic had psychosocial repercussions. In their study, Ebola has personal, societal, and global repercussions. Fear, worry, embarrassment, grieving, confidence loss, trauma, discrimination, and psychological problems are common impacts. According to various studies, the COVID-19 pandemic has caused anxiety, depression, stress, PTSD, sleep disorders, and more in healthcare workers and the public. Meanwhile, experts expect the COVID-19 pandemic to bring intense dread of sickness, hostility, increased alcohol and tobacco usage, acute stress disorder, schizophrenia, and suicidal tendencies. However, hypochondrias can occur in recovered patients or those who have never been affected. Continuous exposure to disease information, news, and films, like COVID-19, produces hypochondrias (Marcus et al. 2007). Over the past six months, COVID-19 has dominated the media. Therefore, strong COVID-19 exposure is expected to exacerbate hypochondrias in today's people.

Psychological Effect of COVID-19 on Children

COVID-19 will affect everyone psychologically, like traumatic events have in the past. Children are particularly affected by pandemics, conflict, forced migration, and natural disasters. Children may be more mentally affected than other age groups because to the difficulties of making sense of COVID-19 and lack of self-expression. In their 2004 study on the psychological effects of the SARS pandemic on children, Tsang, Scudds, and Chan found that children in pandemic families weep excessively, have trouble sleeping, and feel ashamed. Wang, Zhang, Zhao, Zhang, and Jiang (2020) reported that children may have psychological issues like COVID-19 dread, worry, frustration, and social isolation. Therefore, future adults' children are at severe psychological risk.

Statement of the Problem: The COVID-19 pandemic has posed an unprecedented global health disaster, impacting individuals both physically and mentally. The psychological and physiological consequences of COVID-19 are multifaceted, affecting various demographic

groups differently. Understanding these psycho-physiological implications is crucial for devising effective strategies to support affected individuals and improve their overall well-being. Therefore, the present study aims to investigate the physiological state among COVID-19 patients and explore variations based on demographic factors.

Objectives: The primary objectives of this study are as follows:

1. To examine whether there are significant differences in the psycho-physiological state among COVID-19 patients based on gender.
2. To assess whether there are significant differences in the psycho-physiological state among COVID-19 patients based on their location.
3. To investigate whether there are significant differences in the psycho-physiological state among COVID-19 patients based on their age.
4. To determine whether there are significant differences in the psycho-physiological state among COVID-19 patients based on their marital status.
5. To explore the existence of significant relationships between physiological state and psychological state in relation to socio-demographic variables.

Through these objectives, this study aims to provide valuable insights into how various demographic factors influence the psycho-physiological state of COVID-19 patients, thus contributing to a more comprehensive understanding of the pandemic's impact on individuals' mental and physical health.

Hypotheses:

1. There will be significant differences in the psycho-physiological state between male and female COVID-19 patients.
2. There will be significant differences in the psycho-physiological state between rural and urban COVID-19 patients.
3. There will be significant differences in the psycho-physiological state between COVID-19 patients aged 20-40 and those aged 41-60.
4. There will be significant differences in the psycho-physiological state between married and unmarried COVID-19 patients.
5. There will be significant relationships between physiological state and psychological state concerning socio-demographic variables.

Methodology:

Study Design: This study employs a cross-sectional research design to investigate the psycho-physiological state among COVID-19 patients. A cross-sectional approach allows for the examination of the variables of interest at a single point in time, providing insights into the current state of the study population.

Study Participants: The study participants consist of 40 COVID-19 patients, including 20 males and 20 females, aged between 20 and 60 years. Participants were selected from various government healthcare centers and private COVID-19 hospitals in and around Kadapa city, using a purposeful sampling technique. The sample is diverse in terms of gender, age, and marital status, ensuring a representative representation of the study population.

Data Collection Instrument: Data for this study was collected using Sanjay Vohra's Psycho-Physiological State Inventory (PPSI), which was originally developed in 1990. The PPSI consists of 102 items, categorized into Part-1 and Part-2, aimed at assessing the psycho-physiological state of individuals. The inventory includes items related to psychological well-being, emotional state, and physical health.

Data Collection Procedure:

- Prior to data collection, ethical approval and informed consent were obtained from the relevant authorities and participants, respectively.
- Trained research assistants administered the PPSI questionnaire to the selected COVID-19 patients in a structured interview format, ensuring clarity and consistency in responses.
- Participants were briefed on the purpose of the study and assured of data confidentiality.
- Data collection took place within a specified timeframe to minimize variations due to external factors.

Data Analysis: Data collected were analyzed using both descriptive and inferential statistical techniques. Descriptive statistics, including mean and standard deviation, were computed to summarize the participants' psycho-physiological state. Inferential statistics, such as t-tests, were employed to test the hypotheses formulated in this study.

Table I: Socio-Demographic Characteristics of the Sample

S.No	Variable	N	Percentage	
01	Gender	Male	20	50
		Female	20	50
02	Location	Urban	20	50
		Rural	20	50
03	Age	20-40	20	50
		41-60	20	50
04	Marital Status	Married	20	50
		Unmarried	20	50

From the above population 40 covid-19 patients were selected by purposive random sampling technique. The sample consists of 50% of male and 50% of female covid-19 patients, 50% belongs to urban area 50% belongs to rural area, and 50% married and 50% unmarried covid-19 patients. The sample distribution is presented in the table-I.

Independent Variables: Gender, Location, Age, and Marital Status.

Dependent Variables: Physiological state, and Psychological state.

Tool: Psycho-Physiological state inventory (PPSI) constructed and standardized by Sanjay Vohra (1990) it consists of 102 highly discriminating often, sometimes, seldom, never items across two areas of Psycho-Physiological state inventory that part-1 and part-2.

Statistical analysis: The data are analysed using descriptive statistics like mean and standard deviation and inferential statistics like t-test and correlation.

Results and Discussion: The collected data were quantitatively analyzed to test the hypotheses and the results were presented in the following.

Hypothesis-1: There would be significant differences between Male and Female Covid-19 Patients in their Psycho-Physiological state.

Table II: Comparison of Psycho-Physiological State by Gender

Variable	Sub-group	Mean's	SD's	t-value
Gender	Male	270.22	50.26	0.574@
	Female	261.69	48.67	
@ not significant				

Table II shows that male covid-19 patients have a higher mean value (270.22, SD 50.26) than female covid-19 patients (261.69, SD 48.67), indicating that the former group is dealing with more severe psychological and physiological issues. The calculated t-value of 0.574 from table-II is smaller than the value of 2.66 in the table. that is, not significant at the 0.05 level. As a result, we cannot accept Hypothesis-1, which states that Male and Female covid-19 patients will not differ significantly in their Psycho-Physiological state.

According to the first hypothesis, there are substantial gender-based differences in the psychological and physiological status of male and female covid-19 patients. Gender is a non-significant variable, as its t-value of 0.574 indicates. The findings cast doubt on the first hypothesis, which hypothesised that male and female covid-19 patients would differ significantly in their Psycho-Physiological condition. Inferential and descriptive statistics, including the mean, standard deviation, and t-test, as well as correlation, are used to the collected data.

Hypothesis-2: There would be significant differences between urban and rural Covid-19 Patients in their Psycho-Physiological state.

Table III: Comparison of Psycho-Physiological State by Location (Urban/Rural)

Variable	Sub-group	Mean's	SD's	t-value
Location	Urban	275.87	42.47	1.512@
	Rural	245.81	43.60	
@ not significant				

Table III shows that the urban COVID-19 patients have a mean score of 275.87, with a standard deviation of 42.47, whereas the rural COVID-19 patients have a score of 245.81, with a standard deviation of 43.60, indicating that the urban COVID-19 patients are dealing with more severe

Psycho-Physiological issues. Table III yields a t-value of 1.512, which is lower than the value of 2.66 in the table. that is, not significant at the 0.05 level. For this reason, we cannot accept H0-2, which states that the Psycho-Physiological state of covid-19 patients in urban and rural areas varies significantly.

The second hypothesis hypothesised that covid-19 patients in urban and rural areas would have distinct differences in their psychological and physiological functioning. Location is not statistically significant ($t = 1.512$). The results do not support the second hypothesis, which hypothesised that there would be a substantial difference in the Psycho-Physiological state of urban and rural covid-19 patients.

Hypothesis-3: There would be significant differences between ages 20-40 and 41-60 Covid-19 Patients in their Psycho-Physiological state.

Table IV: Comparison of Psycho-Physiological State by Age Group

Variable	Sub-group	Mean's	SD's	t-value
Age	20-40	281.85	41.13	2.189*
	41-60	253.05	42.20	
* significant @ 0.05 level				

Table-IV shows that patients between the ages of 20 and 40 have a high mean value (281.85) with a standard deviation (SD) of 41.13, while patients between the ages of 41 and 60 have a low mean value (253.05) with an SD (42.20). This suggests that patients between the ages of 20 and 40 have more severe Psycho-Physiological problems. The calculated t-value of 2.189, based on data in table-IV, is larger than the nominal t-value of 2.66. Indicative of significance at the 0.05 level. Therefore, we believe H3: There would be considerable variations in the Psycho-Physiological state of covid-19 patients between the ages of 20 and 40 and between 41 and 60.

The third hypothesis hypothesised that covid-19 patients' psychophysiological states would vary significantly between the ages of 20 and 40 and 41 and 60. Age is a statistically significant variable, with a t-value of 2.189. The results support the third hypothesis, which expected a substantial change in the Psycho-Physiological state of covid-19 patients between the ages of 20 and 40 and between 41 and 60.

Hypothesis-4: There would be significant differences between married and unmarried Covid-19 Patients in their Psycho-Physiological state.

Table V: Comparison of Psycho-Physiological State by Marital Status

Variable	Sub-group	Mean's	SD's	t-value
Marital Status	Married	261.91	43.64	4.401**
	Unmarried	306.20	15.30	
** significant @ 0.01 level				

Table V shows that the unmarried Covid-19 patients have a high mean value of 306.20 with a standard deviation of 15.30, while the married Covid-19 patients have a low mean value of 261.91 with a standard deviation of 43.64, indicating that the unmarried Covid-19 patients are

dealing with more severe Psycho-Physiological issues. The calculated t-value of 4.401 from table-V is larger than the expected t-value of 2.66. that indicate significance at the 0.01 level. Therefore, we adopt the fourth hypothesis, which states that married and unmarried covid-19 patients will differ significantly in their Psycho-Physiological condition.

The fourth hypothesis hypothesised that covid-19 patients who were married compared favourably to those who were single. The variable marital status is statistically significant, with a t-value of 4.401. The results support the fourth hypothesis, which hypothesised a difference in Psycho-Physiological state between married and unmarried covid-19 patients.

Hypothesis-5: There would be significant relationships between Physiological state and Psychological state with regards to socio demographic variables.

Table VI: Correlation Matrix between Physiological State and Socio-Demographic Variables

S No	Variable	Physiological State	Psychological state
1	Gender	0.093	0.087
3	Location	0.239	0.178
4	Age	0.344*	0.156
5	Marital status	0.340*	0.050

Physiological state: The correlation matrix related to Physiological State and other Socio demographic variables are presented in Table VI. Result related to Physiological State shows that the gender ($r = 0.093$) is not significant associated with Physiological State and the Marital status (0.340^*) is a significantly associated with Physiological State and the age (0.334^*) is a significantly associated with Physiological state, and the Location (0.239) is no significant associated with Physiological state.

Psychological state: The correlation matrix related to Psychological State and other Socio demographic variables are presented in Table VI. Result related to Psychological State shows that the gender (0.087) is not significant associated with Psychological State and the Marital status (0.050) is a significantly associated with Psychological State and the age (0.156) is a significantly associated with Physiological state, and the Location (0.178) is not significant associated with Psychological state.

Summary of Findings and Hypothesis Testing:

The study aimed to investigate the psycho-physiological state among COVID-19 patients and test several hypotheses. The results revealed that there is no significant difference between male and female COVID-19 patients or between rural and urban COVID-19 patients in their psycho-physiological state. However, significant differences were observed between COVID-19 patients aged 20-40 and those aged 41-60, with the former group experiencing more pronounced

psycho-physiological issues. Additionally, a significant difference was found between married and unmarried COVID-19 patients, with the married individuals reporting milder psycho-physiological problems. Furthermore, the study established a partially significant relationship between physiological state and psychological state concerning socio-demographic variables. These findings provide valuable insights into the complex interplay of factors affecting the well-being of COVID-19 patients.

Results Interpretation: The results of the data analysis will be interpreted to draw conclusions regarding the psycho-physiological state of COVID-19 patients and the impact of various demographic factors. The significance level for hypothesis testing was set at $p < 0.05$.

Limitations:

- The study's cross-sectional design limits the ability to establish causal relationships.
- Data collection relies on self-reported responses, which may be subject to recall bias or social desirability bias.
- The sample size is relatively small and may not fully represent the entire population of COVID-19 patients.

Ethical Considerations: The study adhered to ethical guidelines, ensuring informed consent, privacy, and confidentiality for all participants.

Conclusion:

This study explored the psycho-physiological state among COVID-19 patients, shedding light on various demographic factors. While no substantial differences were observed between male and female patients or between urban and rural patients in terms of their mental and physical well-being, age and marital status emerged as influential factors. Patients aged 20-40 experienced more pronounced psycho-physiological issues than those aged 41-60, highlighting the need for age-specific interventions. Moreover, married patients reported milder psycho-physiological problems compared to unmarried individuals, suggesting the potential buffering effect of marital support. Although there is a partially significant relationship between physiological and psychological states concerning socio-demographic variables, this relationship is intricate and requires further investigation. These insights emphasize the multifaceted nature of the psycho-physiological state in the context of a pandemic, providing a foundation for targeted interventions and support systems to address the diverse needs of COVID-19 patients as they navigate the challenges posed by this global health crisis.

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