



A comparative study on Psychological Immunity, Personality and Anxiety in covid-19 Recovered Persons and Normal Persons

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ABSTRACT:

The purpose of this research is to find out the Psychological impact Anxiety, Stress, Depression, Psychological immunity and various personalities like neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness of Covid-19 recovered persons. The data was collected from June 5, 2020 to August 15, 2020 in Urban and Rural areas of District Jind, Haryana. The data was collected through random sampling from 128 respondents out of which 64 were Covid-19 recovered and 64 were those not infected by Covid-19. The each 64 were further divided in 32 of male and 32 of females. The data had been collected via direct face to face interactions and filling of questionnaire. The level of anxiety, depression, and, stress was measured by the scale, ADSS-BSPSA developed by Pallavi Bhatnagar et al., Department of Psychology at Lucknow University. The various Personalities was measured by the scale NEO FFI-3 developed by Paul T. Costa et al. The psychological immune system was measured by the scale Psychological Immune Stress Inventory (PISI) developed by Attila Olah et al. Hypothesis Testing and t-test were applied for data analysis.

The results reveal that there is a significant difference on the level of anxiety, depression, and stress among Covid-19 recovered persons and normal persons. The persons with less Psychological immunity were more infected than those were high. On behalf of personality it is found that the Neuroticism of Covid-19 recovered is high at significant level whereas Openness and Conscientiousness is less at significant level and there is no significant impact of Extraversion and Agreeableness.

Introduction

Corona virus also known as Covid-19 is an infectious disease caused by a newly discovered corona virus. Most people that were infected with the Covid-19 virus will experience mild to moderate respiratory problems and recover without requiring special treatment.

People with old age and those who have past medical problems like cardiovascular disease, diabetes, severe

respiratory disease, and cancer are more prone to develop serious illness (WHO 2020).

Psychological immune system:

Psychological immunity is a term given by Olah in 2000. It is defined as “a system of adaptive resources and positive personality characteristics that acts as psychological strength at the time of stress.” It includes various positive characteristics such as positive thinking, sense of coherence, sense of control, emotional regulation, goal orientation, positive self efficacy, and



problem solving methods. As the physical immunity protects individuals from different infections of the environments, similarly, psychological immunity also acts as a buffer against environmental stressors, day to day hassles, and negative feelings. (Anubhuti Dubey and Darshana Shahi, 2011)

Psychological Immunity is defined as a complex procedure that runs in parallel with biological immunity. Its primary functions are said to be the recognition, projection, and management of fearful situations to maintain the integrity of anybody personality when interacting with the external environment. Psychological immunity helps develop appropriate behaviour and boost adaption to changing situations or circumstances. (Tanveer Kaur and Rajashree Roy Som, 2020)

The proactive mechanisms involved in psychological immunity help boosting an individual's wellbeing. Psychological immunity have been identified as a safeguard that prevents various risks, there are very few studies that investigate this. Olah psychological immune system is one synthesized framework that includes many characteristics that are related to psychological immunity.

According to Kiecolt Glaser et al. the recent studies in **Psychoneuro-immunology** (PNI) has illustrate that stress delays the recovery of wound healing process.

According to Tanu Gupta and Naresh Nebhinani, 2020. Building of psychological immunity is a process that can be targeted through various deliberate and useful interventions. However, considering the current crisis situation of Covid-19, few simple tips can help an individual to remain strength from Covid-19.

Personality refers to individual differences in particular patterns of thinking, feeling and behaving. The study of personality focuses on two broad areas. One is to understand individual differences in particular personality characteristics, such as sociability or irritability. The other understands how the numerous parts of a person come together as a whole. (American Psychological Association)

Big 5 Personality traits with facets

Neuroticism: Anxiety, Hostility, Depression, Self-consciousness, Impulsiveness, Vulnerability

Extroversion: Warmth, Gregariousness, Assertiveness, Activity, Excitement-Seeking, Positive Emotions

Openness to Experience: Fantasy, Aesthetics, Feelings, Actions, Ideas, Values

Agreeableness: Trust, Straightforwardness, Altruism, Compliance, Modesty, Tender-mindedness.

Conscientiousness: Competence, Order, Dutifulness, Achievement Striving, Self-Discipline, Deliberation.

According to Gordon Allport (1937), "Personality is the dynamic organization within the individual of those psycho-physical systems that determine his unique adjustment to his environment". Revised Definition of Gordon Allport is as a Personality is the dynamic organization within the individual of those psycho-physical systems that determine his actual behavior and thought".

Anxiety is manifested by feelings of tension, anxious thoughts and physical changes such as an increase in blood pressure. Fear and anxiety in society affect everyone to a great extent. Recent evidence shows that people who are isolated were experience extreme levels of anxiety, anger, confusion and stress.

Mahmoud K. AL-Omiri et al. 2021, highlighted that the quarantine might associated with fear, stress, depression, mood problems, lack of self control, psychological distress, anger, low self esteem, insomnia, confusion, nervousness, sadness, and irritability. The psychological consequences of quarantine might be result due to fear of getting infected, extended quarantine time, frustration, financial burden, stigma, dullness, and insufficient supplies and resources. Also, among the self isolated persons, decreased levels of social capital were accompanied with increased stress, anxiety and insomnia.

Review of Literature

According to Nader salari et al. 2020, concluded that in addition to the physical impacts, Covid-19 can have serious psycho effects on people's mental health. A wide



range of psychological problems have been found during the Viral spread, at individual, community, national and international levels. At the individual level, people are more likely to experience fear of getting sick or dying, anxiety, feeling helpless, and being stereotyped by others. This pandemic releases the harmful effect on the public mental health which can even lead to psychological crises. Early identification of individuals in the early stages of a psychological disorder makes the controlling strategies more effective. Health hazards such the Covid-19 pandemic lead to psychological changes, not only in the medical staff, but also in the population, and such psychological changes are instigated by fear, anxiety, depression or stress.

Covid-19 and Stress

Saladino et al. 2020 reveals that Most of the Covid-19 recovered patients are experiencing stress for several weeks and this usually disappear within a short period, but the psychophysical symptoms including depression, fear and anxiety may persist for a longer time. During the quarantine period, the infected, as well as few recovered patients, are devoid from human contact, which might increase the chances of psychological symptoms. Many rehabilitation services have not been accepting patients recovering from the virus because of the risk of infection and social distancing orders in place. This would make the Covid-19 recovered patients prone to physical, cognitive as well as few psychological problems which could also be termed as post intensive care syndrome.

A recent surveys from Ecuador have also shown that people diagnosed with Covid-19 commonly experience anxiety, insomnia, depression, and post traumatic stress disorder. Though researchers are still working to understand exactly how the new corona virus impacts not just the mind but brain function, this new research helps to further establish the link. Covid-19 can result in psychological issues due to both pandemic stress and the physical effects of the disease. The Covid-19 pandemic has disrupted or halted critical mental health services in 93% of countries worldwide while the demand for mental health is increasing, according to a new WHO survey (www.healthline.com, 2020)

Covid-19 and Anxiety

According to Monika Devi et al. 2020, “there is a significant impact on anxiety, depression, and stress among the people of Delhi and Himachal Pradesh during the Covid-19 period. Since the start of the world’s major lockdowns, the said two regions have seen significant increases in mental disorders such as anxiety, depression, and stress as a result of the epidemic”.

The findings suggest that out of the 300 respondents of Delhi, 132 have symptoms of anxiety, from which 67 have Mild, 50 Medium, and 15 have severe. Out of the 100 respondents of Himachal Pradesh, 46 had symptoms of anxiety, among them 40 had Mild, 4 moderate, and 2 have a high level of anxiety. Out of the 300 respondents of Delhi, 164 showed signs of depression, from which 67 had Mild, 56 Medium, and 41 have severe. Out of the 100 respondents of Himachal Pradesh, 47 had depressive symptoms, among them 28 had Mild, 14 moderate, and 5 have a high rate of depression. If we compare the levels of depression, anxiety and stress the percentage of moderate and severe is comparatively high in Delhi. The intensity of psychological problems is alarmingly high, which is a matter of concern and urgent attention.

The Lancet Nov 9, 2019, volume 394 reported that the 18 percent of Covid-19 patients developed a mental health issue like depression, anxiety, or dementia within 3 months of diagnosis. Their risk was doubled compared to people who didn’t have Covid-19. Doctors have suspected that Covid-19 was linked to higher rates of mental health problems.

Sarah Barber et al. 2020 found that the impacts of suspected SARS-CoV-2 infections have three times the broader impact of the Covid-19 epidemic in people with severe mental illness. There are no data available to assess whether people with severe mental illness are at greater risk of acquiring SARS-CoV-2, and as a result, are at greater risk of serious infections and complications, than other groups.

Personality and Anxiety

Sutin et al. 2013, focuses on the chronic illness and personality traits relations. Here it is observed that the basic personality as a predictor of disease in the most recent visits. This research indicates that personality



traits confer risk for disease through health risk behaviours. These traits, however, were relatively resistant to the effect of serious disease.

Covid-19 pandemic impacted mental health status

Xiong et al. 2020 explain the mental health, General population, Anxiety, Depression and Post traumatic stress disorder. Also the results show that demographic characteristics specific to Covid-19 pandemic have impacted mental health status. For instance, age was positively correlated with the emotional, psychological and social well-being of the participants. This is in line with previous studies showing the association between age and mental health during Covid-19 pandemic. Also, the existence of domestic conflicts negatively affected the emotional, psychological and social well being of the participants. This is also in line with previous studies during Covid-19 pandemic indicating that domestic conflicts during the pandemic such as have resulted in deteriorated mental health.

Anahita Shokrkon and Elena Nicoladis 2021 find that personality traits of neuroticism and extroversion are related with the current mental status of Canadians during Covid-19 pandemic. The extroversions positively related to the three subscales of emotional, psychological and social well-being; and neuroticism negatively related to the said three subscales.

The previous research results demonstrating neuroticism and extroversion are impactful on mental health. The results indicated that persons, who scored high on neuroticism, experiencing more mental health issues and in contrast persons who scored high in extroversion, experiencing less mental health issues. These relationships are similar to the before the pandemic times, it believe that the pandemic has not changed the association between the extroversion trait and mental health. People whose score is high in extroversion generally undergo more positive affect, and keep their affect longer, mainly in more emotionally stressful situations. They have also more friends and social networks, high social support and higher quality relations, they may depend on their social support to maintain his/her positive mental health.

Covid-19 and Personality

Mahmoud et al. 2021 study showed that Covid-19 was associated with changes and impacts on precautions to avoid infection, distress and behavioural changes, fears concerns and effects on opinions and beliefs. Also, significant relationships were identified between personality factors and Covid-19 related impacts. The NEO-FFI test was used in this study because it permits a comprehensive measurement of personality dimensions following the Five Factor Model of Personality, and it is simple, reliable, valid, and sensitive. It was used in previous studies among Jordanian, British, Saudi, and Palestinian populations. Information regarding personality scores prior to Covid-19 is not available due to the unexpected fast spreading outbreak of the Covid-19 pandemic. It is important to notice that personality factors are stable and they might take a long time to change. Further prospective exploration is required in this regard.

Eugenio Proto and Anwen Zhang 2021, studied on Covid-19, mental health, Big 5 factor model of personality and cognitive skills. The results show that openness is a strong predictor of mental health deterioration during the pandemic period. Openness is the trait that reflects preferences for exploration and new experiences; in fact this trait is often called "Openness to Experience". The pandemic period is characterized by several constraints that limit the capacity of making new experience or seeking new sensations and the fact that openness is positively associated with mental health deterioration reflect this view. Furthermore, openness is among the Big Five trait the one that is more consistently positively associated with intelligence in fact openness is sometime referred as "Intellect". Cognitive skills like fluid intelligence and working memory seem to be related primarily to the aspect of Openness that can be described as Intellect, which can be separated by the artistic and contemplative traits that characterize the openness aspect.

Khosravi et al. 2020, article about impact of corona virus on neuroticism, known as one of the Big Five personality traits, represents the tendency of individuals towards experiencing negative emotions, including depression, anxiety, and anger. Individuals with high neuroticism scores perceive the world to be threatening, they are



quickly distressed, and it is difficult for them to cope with stressful situations. This argument has been supported by studies on neuroticism mechanisms, which have highlighted the critical role of affective reactivity and preoccupation processes. In this respect, individuals with high neuroticism might further concern themselves in the Covid-19 related information and pandemic consequences and experience more adverse impacts during this preoccupation.

According to Sarin et al. 2020, the main finding in the articles shows that among the 653 respondents 33.2% had significant mental impact regarding Covid-19. This finding was different from the study conducted in china by Wang which reported 53.8% of respondents suffered a psychological impact from the outbreak, ranging from moderate to severe among 1210 respondents. Since these findings were during the early phase of Covid-19 outbreak in the country, chances are they could have changed over time and hence, should be interpreted accordingly.

Zettler et al 2020, studied Personality and Covid-19, the finding are that people with higher levels in the Emotionality or Neuroticism reported more worries and risks. The meta analytic results linking Emotionality to various domains of insecurity and Neuroticism to anxiety.

Mohammadi et al. 2020, the work in this paper is focusing on Corona-virus prevalence, Stress, Anxiety and Depression in general population analysed by meta analysis and provide there systematic review. Further it states that nervousness and anxiety in a society affect everyone to a large extent. Recent evidence suggests that people who are kept in isolation and quarantine experience significant levels of anxiety, anger, confusion, and stress. At large, all of the studies that have examined the psychological disorders during the Covid-19 pandemic have reported that the affected individuals show several symptoms of mental trauma, such as emotional distress, depression, stress, mood swings, irritability, insomnia, attention deficit hyperactivity disorder, post-traumatic stress, and anger. Research has also shown that frequent media exposure may cause distress. Nevertheless, in the current situation, it is challenging to accurately predict the psychological and emotional consequences of Covid-19.

Rationale of Study

Covid-19 (Corona Virus Disease 2019) has significantly resulted in a large number of mild to severe Psychological consequences. The aim of this study is to explore the impacts of Covid-19 on people's mental health like psychological immune system, personality and anxiety after the recovery from Covid-19 to assist policy makers to develop actionable policies, and help clinical practitioners (e.g., social workers, psychiatrists and psychologists).

Considering several reported psychological consequences of Covid-19 and its spread and the lack of general statistics on the topic globally, we decided to conduct a systematic review of the existing studies in this field, with a view to providing a holistic, yet comprehensive statistics on the impact of the Virus on recovered population mental health.

Methodology

Research problem:

The present research aim is to study to compare the Psychological Immune System, Personality and Anxiety in covid-19 recovered persons and normal persons.

Objectives of the Study:

- To compare the level of psychological immune system of the participants of Covid-19 recovered persons and normal persons.
- To compare the different dimensions of the personality of the participants of Covid-19 recovered persons and normal persons.
- To compare the level of anxiety, depression, and stress of the participants of Covid-19 recovered persons and normal persons.

Hypothesis:

- There will be a significant difference in the level of psychological immune system in the participants of Covid-19 recovered persons and normal persons.
- There will be a significant difference in the dimensions of personality of the participants of



Covid-19 recovered persons and normal persons.

- There will be a significant difference in the level of anxiety, depression, and stress of the participants of Covid-19 recovered persons and normal persons.
- There will be a significant difference in the level of Physical immune system and Anxiety, depression, stress of the participants of the Covid-19 recovered persons and normal persons.

Sample:

A sample of 128 Persons selected randomly by purposive sampling method from district Jind, Haryana, out of which 64 Covid-19 recovered persons (32 male and 32 female) and 64 Normal persons (32 male and 32 female) from same locality. They are further divided in to 16 male and 16 female from rural area and 16 male and 16 female from urban area. The Age, Socio economic status, occupation, religion, education qualification and Blood group of all persons will be taken.

Research design:

Descriptive Research Design: In the present research the descriptive research design used. Descriptive research is defined as a research method that describes the characteristics of the population or phenomenon studied. This methodology focuses more on the “what” of the research subject than the “why” of the research subject.

Tools to be used:

Psychological Immune System Inventory (PISI). The scale was developed by Olah (1996, 2005) and is operationalized to measure the mental resistance and coping capacity of the individual. It consists of 80 items that stand for 16 different factors. These 16 subscales are comprised into three subsystems based on their main psychological functions. The Monitoring Approaching Subsystem includes Positive Thinking, Sense of Coherence, Sense of Control, Sense of Self Growth, Change and Challenge Orientation, Social Monitoring, and Goal Orientation. The Creating-Executing Subsystem includes Creative Self-Concept, Problem Solving, Self Efficacy, Social Mobilizing Capacity and Social Creating Capacity. The Self Regulating

Subsystem contains Synchronicity, Impulse Control, Emotion Control and Irritability control. The items are simple statements that the participants required to respond to on a 4 point scale.

Besides the individual scales, the reliability of the three subsystems was also found high, $\alpha=.81$ for MAS, $\alpha=.85$ for CES, $\alpha=.86$ for SRS which confirms the overall reliability of the instrument.

Anxiety Depression Stress Scale (ADSS-BSPSA). The scale was developed by Pallavi Bhatnagar, Megha Singh, Manoj Pandey, Sandhya and Amitabh in 2011 and is operationalised to measure the Anxiety, Depression and stress of a person. The Responses of the items are in terms of yes or no format, for yes given score one and for no given score is zero. ADSS comprises of 48 items divided in to three subscales which are

1. Anxiety subscale comprises of 19 items covering various symptoms that are manifestation of anxiety.
2. Depression subscale comprises of 15 items representing the different symptoms of depression.
3. Stress subscale having 14 items and they are covering the symptoms that people experience in the state of stress.

The NEO Five-Factor Inventory-3

The NEO-FFI-3 developed by Paul T. Costa, Jr., and Robert R. McCrae in 2010. It is a 60-item version of the NEO-PI-3 that provides a quick, reliable, and accurate measure of the five domains of personality (Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness). All updates made in the NEO-PI-3 are reflected in this instrument provides information on five personality domains. It is designed for use in employment and personal counselling settings involving activities such as career counselling, career development, and employee training, where these four domains are the main focus. Items, norms, and scoring are taken from the E, O, A, and C factors of the NEO-FFI-3.

Statistical techniques:

To analyze the data Mean, Standard deviation, t test was applied.



Procedure:

For the purpose of the study, the researcher approach to different private hospital located in Jind District, Haryana . Explain about the research purpose than the Hospitals administration agreed to give the details about the recovered Covid-19 patients name, address etc.

To collect the information about the approach to the recovered persons individually, established the rapport and with the instructions to took the data. Similarly, the normal person's data were taken.

Doubts & queries around the tests were resolved before the responses were collected. Assurance of confidentiality of information was assured and maintained. Purpose of the study and instructions of the tools, was explained before administration of the questionnaires.

The collected t was analysed and compared to achieve the objectives of the study; subsequently using appropriate statistics the research hypotheses were tested.

Results and Discussion

Table: 1. Showing the data of Covid-19 recovered persons and Normal Persons on Psychoneuroimmunology

PISI	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	211.391	11.992	62	3.329	0.05
Normal persons	64	243.250	18.793			

The above data indicate that the Covid-19 recovered persons mean score is 211.391 and the Normal persons mean score is 243.250 on Psychoneuro-immunology. The standard deviation is 11.992 and 18.793 respectively. The t value is 3.329, which is significant on 0.05 level. It means that the covid-19 recovered persons have less psychological immunity than the Normal persons.

Nebhinani, N., & Gupta, T. 2020 Psychological immunity includes various positive characteristics such

as positive thinking, sense of coherence, sense of control, emotional regulation, goal orientation, positive self-efficacy, and problem-solving skills. As physical immunity protects individuals from different viral infections of the environment, similarly, psychological immunity also acts as a buffer against environmental stressors, day to day hassles, and negative emotions.

The hypothesis that there will be a significant difference is proved. Therefore null hypothesis is accepted and alternative hypothesis are rejected.

Table: 2. Showing the data of Covid-19 recovered persons and Normal Persons on Neuroticism

Neuroticism	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	26.109	3.896	126	3.195	0.05
Normal persons	64	21.922	2.978			

The mean result of Covid-19 recovered persons is 26.109 and the Normal persons is 21.922 on Neuroticism. The standard deviation is 3.896 and 2.978 respectively. The t

value is 3.195, which is significant on .05 level. It means that the covid-19 recovered persons have high Neuroticism than the Normal persons.



According to khoshravi M., Neuroticism, known as one of the Big Five personality traits, represents the tendency of individuals towards experiencing negative emotions, including depression, anxiety, and anger. Individuals with high neuroticism scores perceive the world to be threatening, they are quickly distressed, and it is difficult for them to cope with stressful situations.

According to Al-Omiri, M. K., Alzoubi, et al. Higher neuroticism scores were associated with more Covid-19-related concerns, distress, worries, fears, and negative impacts on daily life and habits.

The hypothesis that there will be a significant difference is proved. Therefore null hypothesis is accepted and alternative hypothesis are rejected.

Table: 3. Showing the data of Covid-19 recovered persons and Normal Persons on Extraversion

Extraversion	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	26	4.190	126	0.203	0.05
Normal persons	64	25.141	3.366			

As per the figures in table 7, the Covid-19 recovered persons mean score is 26.0 and the Normal persons mean score is 25.141 on Extraversion. The standard deviation is 4.190 and 3.366 respectively. The t value is 0.203, which is not significant on .05 level. It means that the covid-19 recovered persons have not much impact on Extraversion than the Normal persons.

The six facets of extraversion are activity, assertiveness, excitement seeking, gregariousness, positive emotion and warmth. Here it is found that there is a difference in the mean value on extraversion but not at significant level. Therefore null hypothesis is rejected and alternative hypothesis are accepted. It means that there is no significant difference on extraversion in Covid-19 recovered persons and normal persons.

Table: 4. Showing the data of Covid-19 recovered persons and Normal Persons on Openness

Openness	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	22.906	3.816	126	2.155	0.05
Normal persons	64	27.734	3.609			

The above data indicate that the Covid-19 recovered persons mean score is 22.906 and the Normal persons mean score is 27.734 on Openness. The standard deviation is 3.816 and 3.609 respectively. The t value is 2.155, which is significant on .05 level. It means that the covid-19 recovered persons have less Openness than the Normal persons.

According to Beatrice Rammstedt et al. a higher Openness to Experience will help people to establish a

new daily routine and adapt to novel situational demands. The six facets of openness are active imagination, attentiveness to inner feelings, aesthetic sensitivity, adventurousness, preference for variety, liberal ideas, and intellectual curiosity.

The hypothesis that there will be a significant difference is proved. Therefore null hypothesis is accepted and alternative hypothesis are rejected.

**Table: 5. Showing the data of Covid-19 recovered persons and Normal Persons on Agreeableness**

Agreeableness	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	22.047	3.640	126	0.027	0.05
Normal persons	64	23.391	3.140			

According to table 13 shows that the Covid-19 recovered persons mean score is 22.047 and the Normal persons mean score is 23.391 on Agreeableness. The standard deviation is 3.640 and 3.140 respectively. The t value is 0.027, which is not significant on .05 level. It means that the covid-19 recovered persons have not much impact on Agreeableness than the Normal persons.

The six facets of agreeableness are: Trust, straightforwardness, Altruism, Compliance, Modesty, and Tender-Mindedness. According to results in table 13, the hypothesis that there will be a significant difference is not proved. Therefore, null hypothesis is rejected and alternative hypothesis are accepted.

Table: 6. Showing the data of Covid-19 recovered persons and Normal Persons on Conscientiousness

Conscientiousness	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	23.938	4.294	126	1.969	0.10
Normal persons	64	27.781	3.57			

The result shows that the Covid-19 recovered persons mean score is 23.938 and the Normal persons mean score is 27.781 on Conscientiousness. The standard deviation is 4.294 and 3.570 respectively. The t value is 1.969, which is significant on .10 level. It means that the covid-19 recovered persons have less Conscientiousness than the Normal persons.

this reason, they manage better the negative feelings due to the pandemics. Conscientiousness six facets are Competence, Order, Dutifulness, Achievement Striving, Self-discipline, and Deliberation.

Therefore, null hypothesis is accepted and alternative hypothesis are rejected.

According to Proto and Zhang et. al. Conscientiousness reflects a tendency to maintain motivational stability. For

Al-Omiri, M. K., Alzoubi, et al., also found that higher conscientiousness was associated with more precautions.

Table: 7. Showing the data of Covid-19 Recovered persons and Normal Persons on Anxiety

Anxiety	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	7.344	2.198	126	2.215	0.05
Normal persons	64	4.234	1.650			



The result shows that the Covid-19 recovered persons mean score is 7.344 and the Normal persons mean score is 4.234 on Anxiety. The standard deviation is 2.198 and 1.650 respectively. The t value is 2.215, which is significant on .05 level. It means that the covid-19 recovered persons have more Anxiety than the Normal persons.

According to Dr Manish Kandpal, Assistant Professor, Psychiatry at Ram Manohar Lohia Hospital, anxiety is seen among recovered people. Due to long hospitalisation and isolation, several people are grappling with trauma, stress, fear, depression and anxiety after recovery.

Therefore, null hypothesis is accepted and alternative hypothesis are rejected.

Table: 8. Showing the data of Covid-19 Recovered persons and Normal Persons on Depression

Depression	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	5.078	1.776	126	3.300	0.05
Normal persons	64	2.547	1.391			

As per above figures in table the Covid-19 recovered persons mean score is 5.078 and the Normal persons mean score is 2.547 on Depression. The standard deviation is 1.776 and 1.391 respectively. The t value is 3.300, which is significant on .05 level. It means that the covid-19 recovered persons were more depressed than the Normal persons.

People who have been ill with Covid-19 can experience depressive symptoms for many months after their initial illness," said lead researcher Dr. Roy Perlis a professor of psychiatry at Harvard Medical School in the department of psychiatry at Massachusetts General Hospital, in Boston.

Therefore, null hypothesis is accepted and alternative hypothesis are rejected.

Table: 9. Showing the data of Covid-19 Recovered persons and Normal Persons on Stress

Stress	N	Mean	SD	DF	t value	LOS
Covid-19 Recovered persons	64	4.984	1.83	126	2.280	0.05
Normal persons	64	2.969	1.709			

Table 25 shows that the Covid-19 recovered persons mean score is 4.984 and the Normal persons mean score is 2.969 on Stress. The standard deviation is 1.830 and 1.709 respectively. The t value is 2.280, which is significant on .05 level. It means that the covid-19 recovered persons were more stressed than the Normal persons.

According to Nirmita Pachal et al., While most people are dealing with more mental health issues than usual during the pandemic, the anxiety and stress that come with a Covid-19 diagnosis is significant, even for those who recover.

Therefore null hypothesis is accepted and alternative hypothesis are rejected.



Conclusions

1. There is significant difference in psychological immunity of Covid-19 recovered persons and normal persons. It means that the normal persons have better psychological immunity than Covid-19 recovered.
2. There is significant difference in neuroticism of Covid-19 recovered persons and normal persons. It means that the normal persons have less neuroticism than Covid-19 recovered.
3. There is significant difference in openness of Covid-19 recovered persons and normal persons. It means that the normal persons have more openness than Covid-19 recovered.
4. There is significant difference in Conscientiousness of Covid-19 recovered persons and normal persons. It means that the normal persons have more Conscientiousness than Covid-19 recovered.
5. There is significant difference in anxiety of Covid-19 recovered persons and normal persons. It means that the normal persons have less anxiety than Covid-19 recovered.
6. There is significant difference in depression of Covid-19 recovered persons and normal persons. It means that the normal persons have less depression than Covid-19 recovered.
7. There is significant difference in stress of Covid-19 recovered persons and normal persons. It means that the normal persons have less stress than Covid-19 recovered.

LIMITATION OF THE STUDY

Any kind of survey or study or research project can never be perfect, there shall always remain some areas and aspects which are not touched or some aspects of the research question that remain unanswered, or certain conditions that are not in our control and or the finding were not as per the expectation of the research work. This particular study is no different and there were definitely some limitations. Following are some areas which would have definitely enhanced this project and would have provided much better results:

Sample Size: For any research and analysis a large sample always gives better conclusive results and hence

it is advisable as well. The researcher also finds faith in studies with larger samples. The same cannot be said for this study. Although sample size of 128 is reasonable but it would have been better to have more sample size for the study.

Correct and True Responses: Any research cannot guarantee 100% correct responses from its sample. There is no way to identify corrupt answers. Even though most of the participants were briefed about the project, its purpose and objective, it cannot be denied that some responses may not be true facts hence the results could have been impacted. All the doubts of the participants were cleared.

Current State of Mind of the Sample: When the participants were filling their responses, at that point of time what was their state of mind (happy, sad, irritated, relaxed, tensed etc.) cannot be predicted nor assessed.

Scales & Tools used that are not created or standardized for Indian Population: Both scales that are the PISI Scale and the NEO PI 3 designed by non-Indian researchers. There is quite a possibility that the Items are not applicable in Indian context or population since they have not been standardized for Indian population.

Limited to small demographic area: The present study is conducted in a very small demographic area i.e. Jind, a District of Haryana. Study therefore, cannot claim to have comprehensiveness. Its conclusion may not be universally valid.

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