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A correlational study on level of anxiety, depression and stress and the quality of lives with physical activity of health care workers during Covid-19

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Abstract
Introduction: The World Health Organisation (WHO, 2020) classified the coronavirus disease (COVID-19) outbreak that began in December 2019 in Wuhan, China, to be a public health crisis requiring international attention on January 30, 2020. Healthcare professionals who are afflicted with SARS have gradually endured psychological distress. In several instances, dread and anxiety surfaced right away and subsided in the early phases of the epidemic; but, in the latter stages and for an extended period of time, sadness, psychiatric symptoms, and symptoms related to traumatic stress occurred, which had a significant impact.
Aims: To correlate the level of anxiety, depression and stress and the quality of life with physical activity.
Objectives: To measure the level of depression, anxiety and stress, quantify the level of quality of lives and physical activity and correlate DAS and quality of lives with physical activity.
Methodology: This study is a non-experimental correlational research study. Convenience sampling technique was used to measure 30 participants. The information was collected through online survey
Results: Correlation coefficient values of 0.05 and 0.18 seem to show that there might be a positive correlation between stress and depression with physical activity. But since the values are quite low, the correlation is not significant. The value of correlation coefficient between anxiety and physical activity is a negative value i.e, -0.03. There might be a negative correlation between anxiety and physical activity but again the value is very less indicating insignificant correlation.
Conclusion: It can be concluded that the correlation between physical activity and DAS as well as quality of life is uncertain and more studies need to be conducted in this area for gaining clarity of the same.

Keywords: Physical activity, level of depression, anxiety and stress, quantify the level of quality of lives, COVID19, health care workers

Introduction

Coronavirus disease (COVID-19) out-break emerged in China (Wuhan) in December 2019 and on 30 January 2020 was declared a public health crisis of international care by the World Health Organization (WHO, 2020). Countries with confirmed cases and suspected cases are many (WHO, 2020). United States, Spain and Italy have reported the highest ratio in cases of covid19. Sudden onset of severe interstitial pneumonia regularly requires ventilatory support [1].

The Positive singular isolated ribonucleic acid virus also known as the coronavirus affects pulmonary infections such as the common cold, flu, uncommon pneumonia, and lastly *Severe Acute Respiratory Syndrome* (SARS). It belongs to the Coronaviridae group in the Nidovirales order. The outermost surface is made up of crown-like a spikes of 9–12 nanometer long(Latin: corona means crown). The length of the genome nucleic is 26 to 32 KBS. There are four subfamilies, namely alpha-, beta-, gamma and delta. In humans the transmission of coronaviruses is from one infected person to another mainly by direct contact through saliva, coughing or sneezing (range 1–1.5 m). The main clinical features of COVID-19 are dyspnea, dry cough, fever, muscle soreness, headache, anosmia, ageusia and weakness [2].

There has been an increasing burden on the medical systems. Health care workers all over the world have been facing continuous mental challenges, including high fear of infection (lack of insufficient protection equipment), anger, fatigue, injustice, isolation from family members or tension about infecting them, and indirect trauma. Medical workers in Italy reported the physical as well as the mental burden of communicating with families, especially when they were getting bad news, as they became the only thing between isolated patients and their families [3].

Some studies show that health care providers who are having a high-risk infection of their near ones, experienced increased levels of stress, anxiety, and depression symptoms, which could affect prolong psychologically consequences. Health care workers, who are struggling with SARS, experienced psychological worrying steadily. In some cases, fear and anxiety appeared immediately and decreased in the first stages of the outbreak, but depression, psychological symptoms, and traumatic stress symptoms caused in the later moments and lasted for a long time, leading to a huge effect [4].

Aims: To correlate the level of anxiety, depression and stress and the quality of life with physical activity.

Objectives: To measure the level of depression, anxiety and stress.

- To quantify the level of quality of lives and physical activity.
- To correlate DAS and quality of lives with physical activity.

Purpose of the study

To identify how health care workers are suffering from anxiety, depression, stress and how much physically active they have been during the pandemic. Also, the purpose is the to determine the impact of DAS and physical activity on quality of life.

Significance of the study

The main significance of the study will include the impact on the overall output of health care workers.

- Impacts on immunity and health of generation ahead
- Impacts on social harmony among individuals due to decreased mental health
- Impacts on physical activity
- decrease in number of working hours of workers in private and public sectors
- impacts on GDP and economic development of the country

Definitions

Depression: Depression is defined by the WHO is a common mental disorder that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration. Moreover, depression often comes with symptoms of anxiety. These problems can become chronic or recurrent and lead to substantial impairments in an individual's ability to take care of his or her everyday responsibilities. At its worst, depression can lead to suicide.

Stress: Stress as a response to noxious or aversive stimuli. This is the aspect of stress emphasized by Selye (1956), who measured stress in terms of physiological responses, such as those represented by sympathetic adrenal-medullary activity or by pituitary-adrenal-cortical activity. Selye observed what he called the general adaptation syndrome (GAS) during which the physiological response to stress progresses through three stages.

First, the body is alerted and responds with an alarm reaction. Next, autonomic activity is triggered as the body prepares to deal with the stress. This is the stage of resistance. Finally, if the stress continues beyond the capacity of the body to respond, the system is damaged and collapse. This is the stage of exhaustion

Anxiety: Anxiety is defined by the American psychological association that an emotion characterized by feelings of tension, worried thoughts and physical changes like increased blood pressure.

People with anxiety disorders usually have recurring intrusive thoughts or concerns. They may avoid certain situations out of worry. They may also have physical symptoms such as sweating, trembling, dizziness or a rapid heartbeat.

Quality of Life: *Quality of life is defined by the Britannica that* inherently ambiguous, as it can refer both to the experience an individual has of his or her own life and to the living conditions in which individuals find themselves. Hence, quality of life is highly subjective. Whereas one person may define quality of life according to wealth or satisfaction with life, another person may define it in terms of capabilities (e.g., having the ability to live a good life in terms of emotional and physical well-being). A disabled person may report a high quality of life, whereas a healthy person who recently lost a job may report a low quality of life. Within the arena of health care, quality of life is viewed asmultidimensional, encompassing emotional, physical, material, and social well-being.

Physical Activity: WHO defines physical activity as any bodily movement produced by skeletal muscles that requires energy expenditure. Physical activity refers to all movement including duringleisure time, for transport to get to and from places, or as part of a person's work. Both moderate- and vigorous-intensity physicalactivity improve health. Popular ways to be active include walking, cycling, wheeling, sports, active recreation and play, and can be done at any level of skill and for enjoyment by everybody. Regular physical activity is proven to help prevent and manage noncommunicable diseases such as heart disease, stroke, diabetes and several cancers. It also helps prevent hypertension, maintain healthy body weight and can improve mental health, quality of life and well-being.

Methodology

- **Study Approach-** NON-Experimental Study
- **Study Design- Design:** Corelational Study
- **Sampling Technique-**Non Probability
- **Sample Size –** 30
- **Sample Source:** Through online survey
- **Method of Sampling:** sample of convenience
- **Outcome Measures:** Quality of life and physical activity

Criteria

Inclusion Criteria

- **Age**- 20-50 years old.
- **Gender**- Both male and female
- **Healthcare workers**- Nurses, Doctors (all specialities).
- who did not have a history of psychiatric illnesses.

Exclusion Criteria

- Presence of chronic medical disorders including neurological, cardiovascular, respiratory, endocrine and inflammatory disorders.
- Inability to complete an online survey.
- Lack of mobile phone number and Internet access.
- Suspected or confirmed cases of COVID-19.

Procedure

with the help of inclusion criteria

⇩

the target group has been told

⇩

the Aim of the research

⇩

Link has been given to the target population

⇩

They filled the consent form and socio-demographic data

⇩

Target group fill the questionnaire of depression, anxiety and stress

⇩

Quality of life questionnaire

⇩

Physical activity questionnaire.

Result

Correlationmatrix

	Stress	Anxiety	Depression	PA	QL
Stress	1.00	0.91	0.92	0.05	0.75
Anxiety	0.91	1.00	0.84	-0.03	0.76
Depression	0.92	0.84	1.00	0.18	0.68
PA	0.05	-0.03	0.18	1.00	-0.13
QL	0.75	0.76	0.68	-0.13	1.00

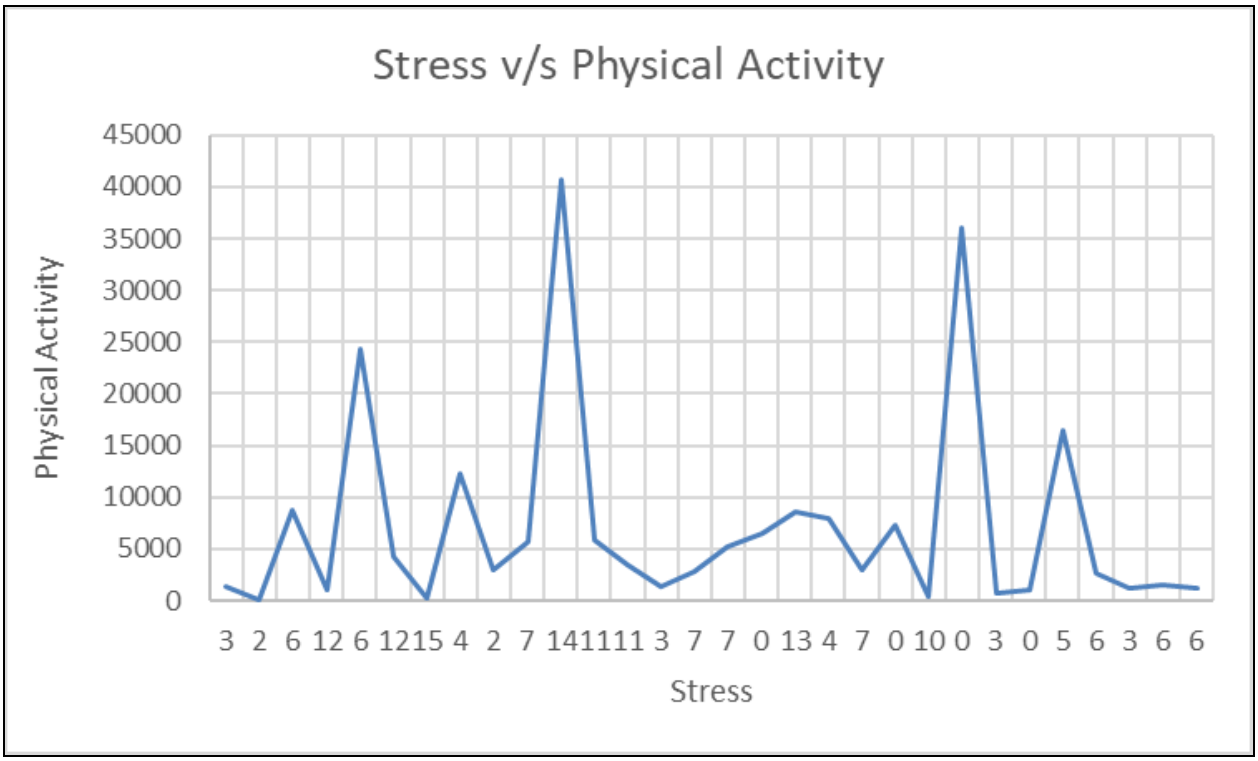

Fig 1

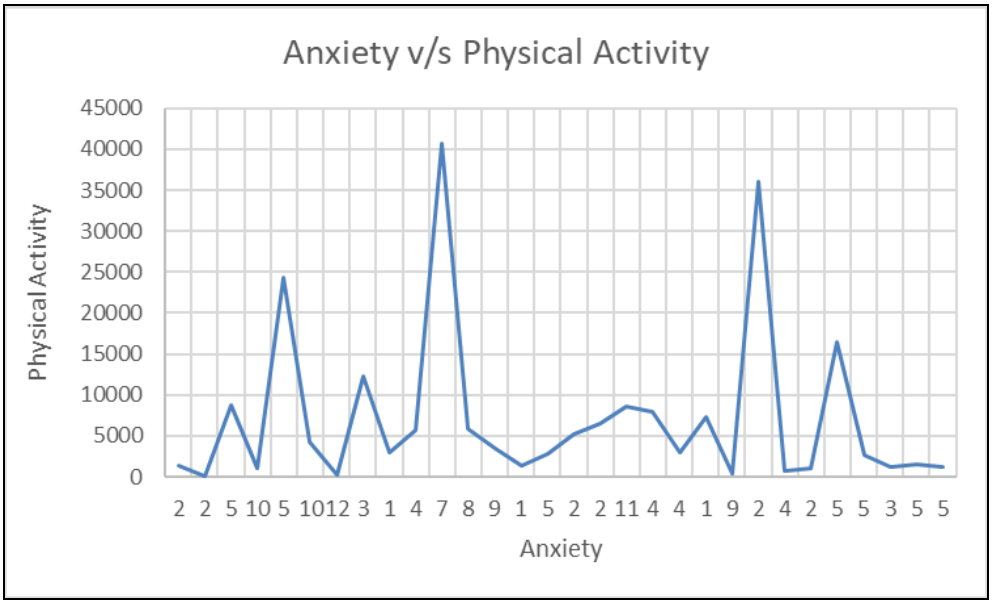

Fig 2

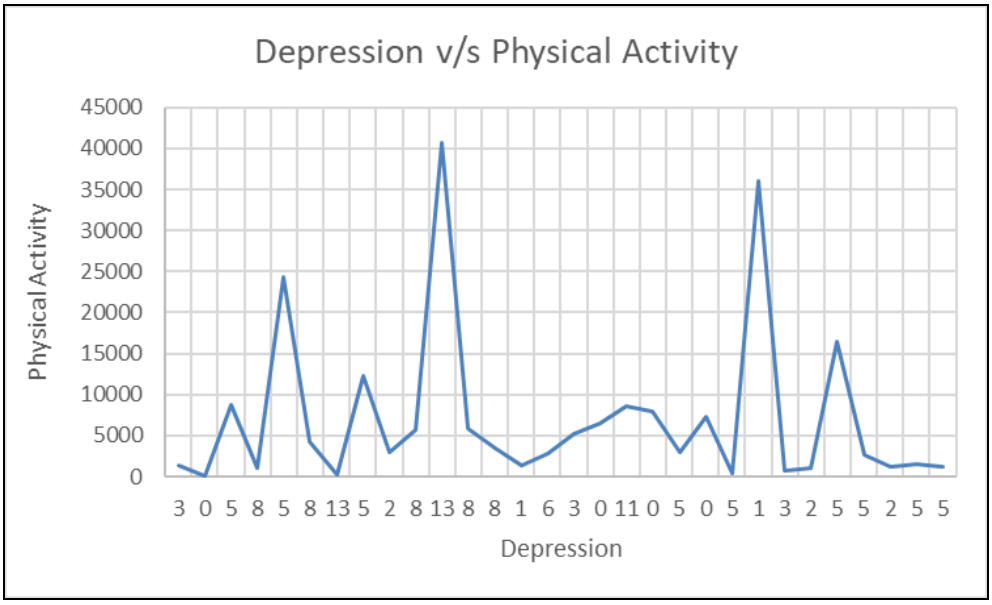

Fig 3

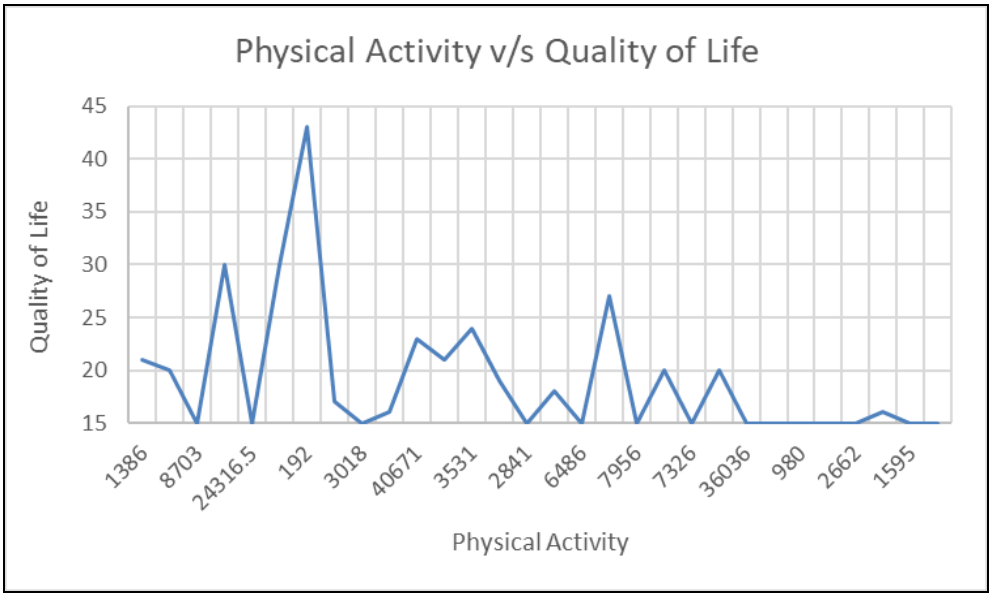

Fig 4

Discussion

General discussion

The present study aims to correlate physical activity with depression, stress and anxiety as well as with the quality of life of the health care workers during the pandemic situation in the country. The study was conducted in online mode since it was not possible to carry out offline face to face surveys. The wide spread disease has been a nightmare for the governments around the world and there has been a loss of the most important resource, the human resource. The study was conducted in order to understand how the healthcare workers have been fighting mental and physical fatigue during long working hours and stressful situations.

The sample size for the study was taken to be 30 and the sampling method used was convenience sampling which is a type of non-probability sampling method. Since the disease is highly contagious as well as fatal and also since there was lockdown situation in the country at the time of sampling, the best method of sampling was convenience sampling. Online Google form was generated which was circulated to various healthcare workers as per convenience.

Specific criteria were chosen to narrow down the sampling process. All relevant questions related to the history of any physical or mental ailment were included in the questionnaire. The questionnaire has been attached in the appendix and prior to answering the questions, a consent form was provided with the Google form. There were separate questionnaires for measuring depression-anxiety-stress, quality of life and physical activity.

Studies related to the long term impacts on the pandemic need to be given support by the research fraternity in order to understand the indirect loss that the entire world as a whole has to bear in the near future. Even though studies have shown that the prevailing pandemic situation has resulted in unexpected anxiety, depression and stress in health-care workers, there is little or no evidence of its relation with their physical activity. Also there is merely any past study based on the relation between physical activity and quality of life.

Correlation between depression-anxiety-stress and physical activity

Wilson, Than, Sahin and many others have clearly justified that long working durations, no contact with family and saddening deaths have taken a toll on the mental health of frontline worriers. Anxiety and stress disorder have been reported to be higher in women health care workers but the reason of this is beyond the scope of discussion here. The point to be stressed here is that even though there have been long working hours leading to tiredness and fatigue in healthcare workers, the results of this study do not correlate stress with physical activity.

As given in the correlation table in the results section and also in figures 1, 2 and 3, there is no correlation between stress and physical activity, anxiety and physical activity and depression and physical activity. Correlation coefficient values of 0.05 and 0.18 seem to show that there might be a positive correlation between stress and depression with physical activity. But since the values are quite low, the correlation is not significant. The value of correlation coefficient between anxiety and physical activity is a negative value i.e, -0.03. There might be a negative correlation between anxiety and physical activity but again the value is very less indicating insignificant correlation.

Correlation between quality of life and physical activity

Talking about quality of life, Moitra pointed that there has been a decrease in the pay scales of healthcare workers during pandemic situations. This may have indirectly affected the quality of life but again no relation has been found between quality of life and physical activity. Studies have shown that there has been a decrease in job performance and creative outcomes during situations of mental stress as well as physical fatigue. Because data has been on February 2021 during that time the covid19 cases are not on peak level.

As shown in the correlation table given in the result section, the value of correlation coefficient between physical activity and quality of life is -0.15. This indicates that there is an insignificant negative correlation between the two.

Although thinking logically it can be said that there must be a relation between increasing DAS and physical activity because tired, fatigued and over-worked workers who are not well-rested tend to lose their emotional balance. This would indirectly result in a long term impact on the quality of life these workers. The results of this study do not correlated either DAS or quality of life with physical activity maybe because of experimental flaws. The limitations in sampling (due to current pandemic situation in the country) could be the reasons of such results.

Also, since the survey was online, one cannot determine what kind of mental or physical state the respondent might be in while answering the questions. The questions in DASS questionnaire are not yes or no type. This might have confused some respondents.

Even though studies have shown that the prevailing pandemic situation has resulted in unexpected anxiety, depression and stress in health-care workers, there is little or no evidence of its relation with their physical activity. Also there are very few past studies based on the relation between physical activity and quality of life. As per Shaukat *et al*, fever, cough and weakness were the most common physical symptoms identified in health care workers working close to covid patients. Also, long durations of wearing PPE kits, resulted in subcutaneous infections of skin. These are physical health impacts and not exactly a representative of physical activity of the HCWs.

Significance of the study-

Covid-19 has so far been a grave challenge facing the humanity all around the world. The health care workers as well as the other front line warriors have been hit hard during this time. Although the infected person is at high risk of death but the people working close to the infected person are also at the same level of risk. The pandemic has completely changed the way of living of the entire world and shown us that we are still not well equipped and prepared to face such situations. The health care workers are no less than soldiers fighting for the lives of others while putting their own lives at risk.

Since there has been a huge loss of not only human resource but also other resources, immediate actions need to be taken to curb the growing pandemic. The pandemic has highlighted the need for real-time research and the need for quick technological development in order to control the devastating impacts. It has made important the need to strengthen the research and development departments of other sectors too including healthcare. Life-saving therapies, clinical trials, extensive research outcomes, everything has been challenged by the pandemic.

It becomes the duty of each and every researcher in the need of the hour to join hands with other industries and come out with solutions. The short-term impacts are clear in terms of death and compromised health but long term impacts still need to be uncovered and researched upon. This calls for studies such as those related to the quality of life of health care providers and the compromised mental health impacting the performance outcomes. The pandemic has shown the humanity that not only is it important to maintain a healthy life style on the outside but also developing a healthy state of mind is very important.

Studies related to the long term impacts on the pandemic need to be given support by the research fraternity in order to understand the indirect loss that the entire world as a whole has to bear in the near future.

Future studies can be conducted to compare with the leisure times.

Conclusion

It can be concluded that the correlation between physical activity and DAS as well as quality of life is uncertain and more studies need to be conducted in this area for gaining clarity of the same.

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