

Gender-Based Study on Anxiety in Young and Middle-Aged Adults of Delhi-NCR During the Covid-19 Pandemic

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ABSTRACT

Global pandemic- Covid-19 spread worldwide by the year 2020. Along with the massive economic burden on people, it brought with it, tragic loss of human life and mass disruption in fields such as education. With this complete change of lifestyle, people have yet not entirely adjusted to the changes. The unpredictable mutations that the virus has so far shown causes a great deal of uncertainty about the future. The complete inadequacy of medical support and infrastructure that people experienced has multiplied the levels of anxiety in the minds of people owing to the helplessness faced by them in accessing medical facilities. To add to this, the extent of the calamity flooded all information and communication channels with an incessant flow of tragic news and first-hand experiences of impacted families. This further fuelled the sense of fear, uncertainty and anxiety across society. The extended social restrictions and lack of in person social interaction with friends and family is yet another factor that has undoubtedly taken a toll on the mental health and well-being of individuals to varying degrees across demographics. The extent and severity of anxiety experienced by individuals varies from person to person and between genders. The present study conducted was aimed to objectively assess the level of difference in anxiety experienced by males and females of Delhi-NCR in the age bracket of 18 to 60 years. This study also tries to put forth the reasons behind the differences observed in the levels of anxiety among males and females.

Keywords: *Anxiety, Covid-19, Fear, Helplessness, Inadequacy, Mental Health, Social Interaction, Uncertainty, Unpredictable*

The year 2019 ended with the development of an unwelcomed strain of the corona virus. This new virus called the Covid-19 began to affect people worldwide by the end of 2019 and the beginning of 2020. It was just a matter of months for Covid-19 to be considered as a global pandemic due to its extremely fast rate of spreading worldwide. On 11th March 2020, Covid-19 was declared a global pandemic by WHO. The rapid spread of Covid-19 led to immense fear, anxiety and apprehension amongst people due to the lack of information about the virus and the adverse side effects faced by people infected and their families. Covid-19 brought with it so many unexpected deaths, children losing their parents,

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Received: May 29, 2021; Revision Received: June 15, 2021; Accepted: June 30, 2021

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tensions in families due to the lockdown etc. everything starting from newspapers to social media and even personal communications, all revolved around Covid-19 and nothing else. Not only did this virus affect the people physically but also created a huge mental burden on people. Many studies conducted also showed a rapid increase in the diagnosis of mental health disorders during this period.

There was no known cure for Covid-19, all forms of treatment were just a series of trial and error with no surety of its effectiveness. Lack of knowledge about the virus contributed to the great amount of stress and anxiety experienced by people. After immense research and testing, covid vaccines were introduced by the December 2020 and implementation started by January.

Anxiety

It has been mentioned above that the onset of Covid-19 brought with it immense anxiety and apprehension. But what exactly is anxiety?

Anxiety refers to feelings of apprehension about a potential future danger in general. According to Barlow, “the anxiety response pattern is a complex blend of unpleasant emotions and cognitions that is both more oriented to the future and much more diffuse than fear.” Anxiety not only has a cognitive component but also has physiological and behavioral components. Aspects like self-preoccupation, negative moods, worry about potential future threats, lack of control come under the cognitive component. The physiological component includes chronic overarousal, tension, rapid heartbeat, sweating etc. Lastly the behavioral component includes an increase in the avoidance of situation that are perceived to be dangerous.

Even though mild and moderate levels of anxiety can help us remain prepared to face different situations and enhance our learning but higher levels of anxiety can disrupt us from continuing daily life activities, our social interaction, lower the way we perceive ourselves etc. thus overall having a negative effect on our lives.

Fear

Fear is referred to as an emotion which has both a universal biochemical response and an individual emotional response. It can be defined as “An unpleasant feeling triggered by the perception of danger, real or imagined.” Earlier the only way in which people distinguished fear from anxiety was that a person experienced fear when a clear and obvious source of danger was present and it was real not perceived whereas in anxiety the danger cannot be exactly specified or noted. Fear plays a major role in the activation of ‘fight-or-flight response’ of the autonomic nervous system. This response is an immediate reaction to any danger or threat experienced by an individual. The symptoms of fear and panic attack are more or less the same. Fear consists of three components-

- Cognitive/subjective components
- Physiological components
- Behavioral components.

It is not necessary that an individual shows all these components while experiencing fear or panic i.e., the person may show cognitive and physiological components when faced with fear and not behavioral indications.

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An individual suffering from anxiety disorder can experience irrational fears which can lead to notable distress and cause impairments in functioning. Different people will have different degrees of intensities and different trigger points thus leading the anxiety disorders to be classified into 5 types according to DSM:

- 1. Specific Phobia**—“A specific phobia is said to be present if a person shows strong and persistent fear that is triggered by the presence of a specific object or situation and leads to significant distress and/or impairment in a person’s ability to function.” People with this phobia not only experience symptoms when faced with a stimulus but mere imagination of seeing the stimulus can also trigger the individual. This disorder generally begins in childhood or adolescence and young adulthood depending upon the type of phobia.
- 2. Social Anxiety disorder (Social Phobia)** Social phobia is characterized by disabling fears of one or more specific social situations.(eg. Public speaking, eating or writing in public or urinating in a public bathroom etc.) In these situations, a person fears that she or he may be exposed to the scrutiny and the potential negative evaluation of others or that she or he may act in an embarrassing or humiliating manner.” Due to these fears people with social phobia try to steer clear of social interactions that may trigger them and also avoid activities like public speaking or giving presentations in class, meeting up with new people etc. The occurrence of social phobia is more commonly seen in women as compared to men and the age of onset is generally found to be in between adolescence and early adulthood.
- 3. Panic Disorder**- Panic-disorder is defined and characterized by the occurrence of panic attacks that often seem to come ‘out of the blue’.” That is, an individual suffering from this disorder might experience a panic attack at any given time and the cause might be unidentifiable. One can have a panic attack even at very unexpected times such as while sleeping or relaxation but at the same time, these panic attacks can also be caused due to a situational factor. Most symptoms seen in this disorder are physical in nature. The panic attack is short but intense.
- 4. Agoraphobia**-Agoraphobia is an anxiety disorder in which an individual’s fear and avoid going to places that make them feel helpless, stuck, embarrassed etc. Generally, people with agoraphobia tend to avoid and fear going to places like the movie theatres, streets malls etc. It first, people suffering with agoraphobia avoid going to places where they did have a panic attack but this fear gradually extends to more and more places thus disrupting the daily life functioning of the person. In moderate and severe cases of agoraphobia, the individual would refuse to leave his/her home or even avoid going to some parts of their house. Agoraphobia is much more common in women than men and the age of onset is observed to be in the 20s to the 40s.
- 5. Generalized Anxiety Disorder**-Generalized anxiety disorder is characterized by unreasonable, chronic and excessive worry about many different situations in life. This worry cannot be related to the thought about another concurrent disorder such as having a panic attack. People with GAD constantly worry about what will happen in the future and feel anxious and uneasy. GAD is found to twice as common in women than in men. Though the age of onset is not entirely known but research suggests it develops in older adults.

Gender differences in anxiety disorders

Mostly conducted researches have found that females are at a higher risk of developing anxiety or anxiety disorders than males having 1.5 to 2 times higher lifetime and past-year

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rates of anxiety disorders. Some studies have shown that women are twice as likely as men to develop an anxiety disorder. The prevalence of anxiety disorders in women is 23.4 percent and for men the prevalence is 14.3 percent. There are a number of reasons why females are more anxious than males. This can be due to the different coping strategies adopted by men and women, the hormonal fluctuations as well as the difference in the activity of the brain. It has been shown through studies that due to hormonal fluctuations the fight-or-flight response is easily activated and is more prolonged. Also in males, the hormone testosterone helps them ease the symptoms of anxiety. In many societies women are not considered to be independent and strong enough and thus are at a greater risk of oppression, sexual, physical or mental abuse making them weaker and more gullible to occurrences and reoccurrences of anxiety disorders. Research has shown sex differences in the brain regions that are associated with anxiety such as the hippocampus, prefrontal cortex, extended amygdala complex etc. also the blood pressure and pulse of females is shown to be more reactive to anxiety than seen in males. Thus, in conclusion it can be said that there are significant gender differences in anxiety and females are proven to be more vulnerable to anxiety and anxiety related disorders.

A research conducted by Elsevier Public Health Emergency Collection showed that psychiatric disorders could be linked to the deadly corona virus. They conducted a study on 402 adults who had recovered from covid. Out of these 402, 265 were males with the average age of 58 years. They tried to study symptoms of PTSD, anxiety, depression, insomnia and OCD with the help of self-report questionnaires and clinical interviews. The data they collected included clinical data, sociodemographic information, baseline inflammatory markers and follow up oxygen saturation levels. Through their research they found out that a good portion of the participants self-reported themselves in the psychopathological range. About 28 percent for PTSD, 31 percent for depression, 42 percent for anxiety, 20 percent for OC symptoms and 40 percent for insomnia. About 56 percent of the sample population was included in at least one clinical dimension. It was also seen that patients who were previously diagnosed with some psychiatric problem showed an increase on most pathological measures. In addition, the female participants were shown to be more prone to anxiety and depression in comparison to the male participants.

In another cross-sectional study conducted in India, 234 participants were reached out to using the online survey method. This survey was done when India was under lockdown due to corona virus. The researchers collected data about the health anxiety, the coping mechanism used and the locus of control. In order to assess the relationship between locus of control, health anxiety, coping mechanisms and age, the researchers used structural equation modelling. They found that there were age related differences in coping strategies as well as locus of control. Furthermore, it was found that the younger people found more comfort in social media to cope with the health-related anxiety they experienced. Lastly, it could be seen that health-related anxiety could be managed with the help of mindfulness-based strategies as it helps to increase the tolerance of individuals to uncertain experiences during the pandemic.

METHODOLOGY

Participants

The study includes 146 participants, a mixture of both men and women belonging to the young-adult category (18-35 years) or the middle-aged adult category(36-60years). The sampling technique used was snowball sampling and purposeful sampling for selecting the

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participants of the study. The participants belonged to the Delhi-NCR region only. The willing consent of each participant was taken before the beginning of the study.

Tools used-

The tool used for data collection was Beck's Anxiety Inventory. This inventory was created by Aron T. Beck along with his colleagues in 1988. It consists of 21 items and is a self-report measure of anxiety. The items include rating common symptoms of anxiety on a scale from 0 to 3, where 0 refers to 'not at all' and 3 refers to 'severely- it bothered me a lot', each item is scored on this basis. The common anxiety symptoms include wobbliness in legs, nervousness, shaking of hands, numbness and tingling etc. The total score for the anxiety test is found out by adding the scores of all 21 items. A score obtained between 0-21 signifies low levels of anxiety, a score of 22-35 points to moderate anxiety and a score of 36 and above signifies potentially concerning levels of anxiety. Thus, the greater the score the higher is the level of anxiety. The test-retest reliability for Beck's Anxiety inventory is 0.75 (1 week) and the internal consistency that is Chronbach's alpha coefficient is 0.92. in terms of validity for the inventory it correlated moderately with the revised Hamilton Anxiety Rating Scale (0.51) and was mildly correlated with Hamilton's Depression Rating Scale (0.25).

Procedure

The survey research method was used to collect data. The sample was decided upon. The medium used for data collection was google forms. The informed consent was taken from the participants before the beginning of the Anxiety inventory and the participants were briefed about the nature of the study. Instructions regarding the anxiety test were clearly given to the participants on the google form and the participants were requested to fill the form. The efforts and time spent by the participants were acknowledged at the end of the form. A total of 146 responses were received in a spreadsheet managed by the researcher. The responses of each participant were recorded on the google forms. This data recorded provided an opportunity to export data to other statistical packages for analysis.

RESULTS

Table 1 shows the Mean, standard error of the mean and t- value on the construct of anxiety between male and female young and middle-aged adults.

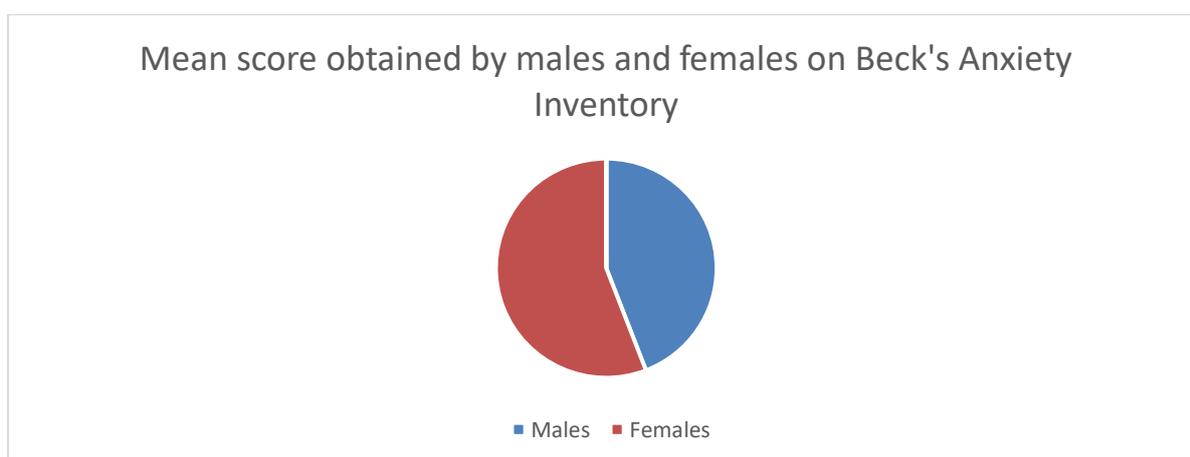
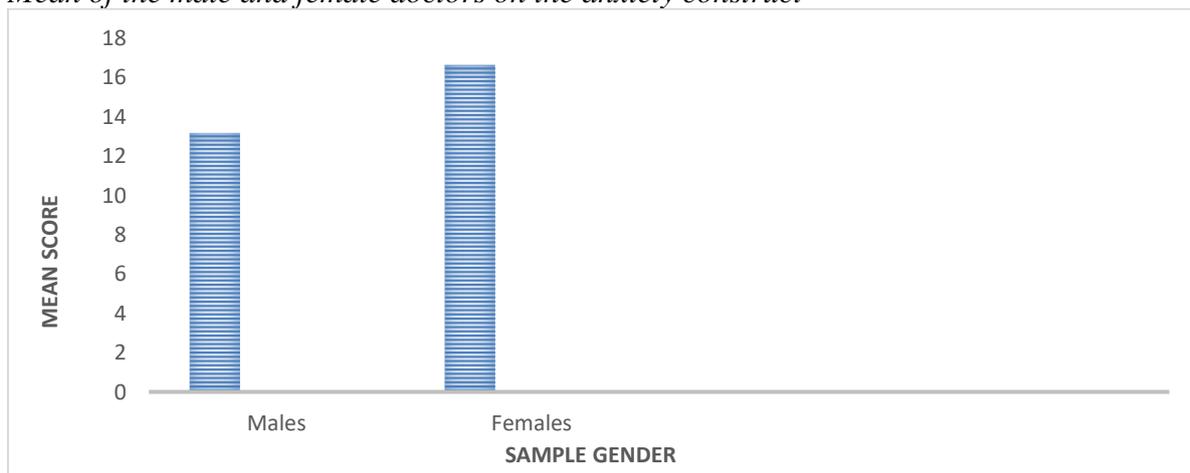
SNo.	Dimension	Males	Standard error of the mean	Females	Standard error of the mean	t-value
		Mean		Mean		
1	Anxiety	13.15	1.63	16.64	1.50	<u>t obtained</u> +1.572 <u>t critical</u> - +/- 1.976

Table 1 shows that in the dimension of anxiety the mean score for males on the Beck's Anxiety Inventory was 13.15 and the mean score for females was found to be 16.64. the standard error of the mean for males and females was also different. For males it was calculated to be 1.63 and for females it was calculated to be 1.50. on calculating the t-value for independent samples the obtained value of t score was found to be + 1.572 and the value of t critical at 0.05 level of significance was +/- 1.976.

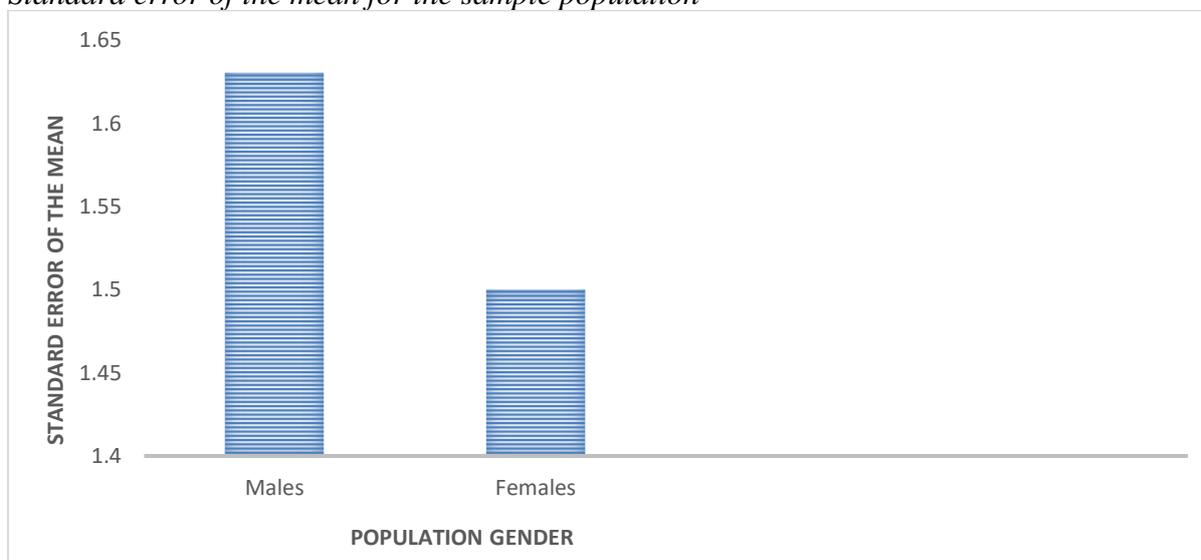
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Graphical representation

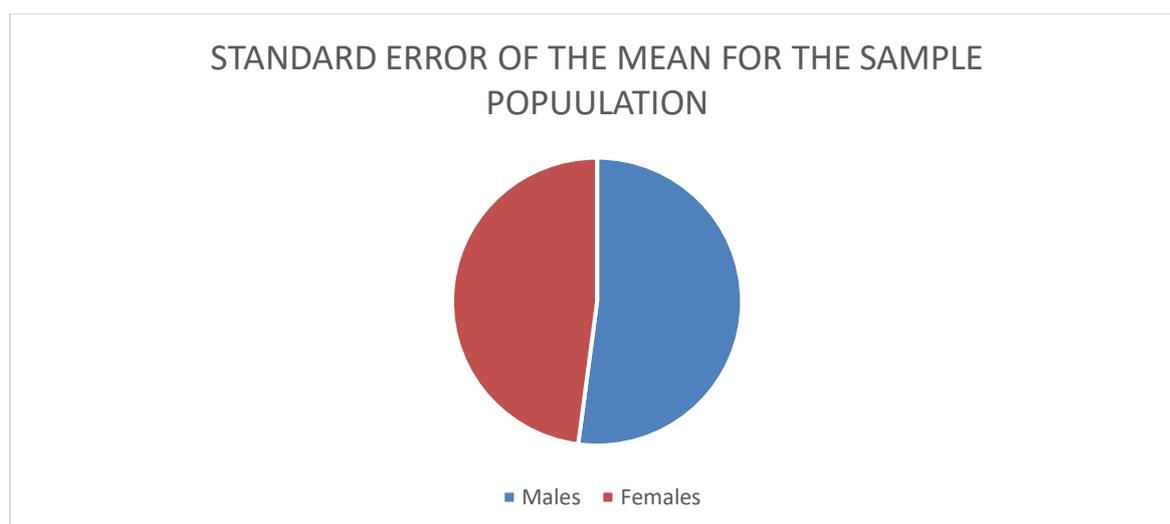
Mean of the male and female doctors on the anxiety construct



Standard error of the mean for the sample population



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Interpretation

The aim of this research study was to find out if there were any gender differences in the levels of anxiety experienced by the population during the period of the global pandemic of corona virus. In order to do this the participants were supposed to fill out Beck's Anxiety Inventory which was provided to them through the online mode keeping in mind the current conditions.

While tallying the results obtained, the researcher found the raw scores obtained by the female participants were higher than those obtained by the male participants which further pointed out to show that females tend to be more anxious as compared to males. This was further supported by obtaining the mean score. The female participants obtained a mean score of 16.64 and the male participants obtained a mean score of 13.25. This showed that the female participants of the study experienced more anxiety and apprehension during the covid-19 pandemic as compared to the males. For statistical validity of the data, it was decided that the t-test would be applied. Considering the two samples to be independent samples, the standard error of the mean of two independent samples was found to be 2.22 and the value for the obtained t-score was + 1.572. Taking the level of significance as 0.05 and the hypothesis to be non-directional the critical value of t was noted to be +/- 1.976. On plotting the normal probability curve the statistical conclusion was to retain the hypothesis and the research conclusion was that a difference does exist between the levels of anxiety experienced by males and females.

Even though the level of anxiety in females was found to be higher than the male participants, it was seen that the male participants also showed high levels of anxiety. The mean score of the two genders is not vastly different but there is some difference. Many studies of also being previously conducted that show the relationship between covid-19 and anxiety amongst people. A study was conducted by Kannampallil et al. (2020). They studied medical trainees who were exposed to patients having covid-19 on their anxiety, depression, stress, work-life fulfillment and burnout levels. They studied 393 participants divided into two groups, those exposed to covid-19 patients and those who were not exposed. The results they obtained showed that higher levels of stress and burnout was prevalent in trainees who were exposed to covid-19 patients than those who were not.

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A study conducted by Carmen P. McLean, Anu Asnaani and Stefan G. Hofmann showed that women have shown higher rates of anxiety disorders in a consistent fashion. They took a large sample size of 20,013 adults. They found that the lifetime prevalence of anxiety disorders in male:female ratios was 1:1.17 (males) and 1:1.79 (females). They concluded that apart from Social Anxiety Disorder women have shown a higher diagnosis of lifetime prevalence of most anxiety disorders. They further found that no such gender differences were prevalent in the age of onset as well as the chronicity of the illness. Also, women specifically belonging to European and American societies have shown significantly higher illness burden than men. This further points out that along with higher prevalence of anxiety disorders in women they also cause more damage to women.

Another study conducted by A.A. Marques (2016) represents the neurobiology behind gender differences in anxiety. Taking in account the view that females tend to be more susceptible to anxiety disorders, they focused on the neurobiological cause underlying this view. Their aim was to study the anxiety related behavior, physiology with a special focus on adult hippocampal neurogenesis (AHN). They found that hormones play a major role in way males and females behave. They also found that during sexual maturity there is a cyclic fluctuation of hormone levels in females as compared to males which leads to higher levels of stress response and makes them more prone to anxiety.

A study conducted by the University of Cordoba (2020) showed similar results to the study presently conducted. The aim of their study was to study the levels of fear, anxiety, and depression related to covid 19 among undergraduate students from Ecuador. The sample size was 640 with 72% women under the age category of 18 to 47. They found that the mean levels of anxiety, stress and depression were higher than those found non-pathologically. In this study as well, gender differences were seen. Women experienced greater levels of fear towards the pandemic than men. This further was seen in anxiety and depressive dimensions as well.

The present study conducted also points out that such gender differences do exist. Though prevalence of anxiety can be seen in both genders results have also indicated that the female participants have higher levels of anxiety and stress response. During this period of the covid-19 pandemic it can be seen through this study that in addition to the physical health of the people the mental well-being of individuals is also severely affected.

LIMITATIONS OF THE STUDY

The errors of the study should be included to understand the results in a better way. One limitation of the study is that it was conducted on participants only belonging the Delhi-NCR region thus limiting the sample variety and generalization cannot be done. Secondly, the sample population consisted of 146 participants which is a small sample thus making it difficult to generalize the findings of the research conducted. Thirdly, keeping in mind the current situation the study was conducted through online mode which increases the chances of error. Another limitation to the study was the lack of availability of Indian researches which lead to cultural differences and a delay in the research. Personal errors can also be seen as a hinderance to the study.

Suggestions for future research

Our survey sample was just limited to Delhi NCR therefore the results could not be generalized to a larger population. Hence, for the further research one of the major

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suggestions could be selecting a larger survey sample and not restricting within a particular area.

Another suggestion can be that we can consider people belonging to different social status and compare the findings on the basis of gender, how burdens such as economic, emotional and social affect different people and its correlation with anxiety. This will help bring a broader perspective to the study.

CONCLUSION

From this research study on gender differences on anxiety in young and middle-aged adults it can be concluded that yet indeed there are gender differences in the levels of anxiety experienced by males and females. Through the study it was found that females tend to show higher levels of anxiety than males during the ongoing covid-19 vaccine. This result was validated with other research studies conducted showing similar results regarding gender differences and anxiety. A possible reason for higher levels of anxiety in females can be differences of hormones in men and women, the differences in the neurobiology and structure of certain brain regions and different coping mechanism used by men and women to deal with stressful experiences.

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Acknowledgement

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Kaur S. & Kaur Sran S. (2021). Gender-Based Study on Anxiety in Young and Middle-Aged Adults of Delhi-NCR During the Covid-19 Pandemic. *International Journal of Indian Psychology*, *9*(2), 1676-1685. DIP:18.01.167.20210902, DOI:10.25215/0902.167