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Stress Resilience as a Tool to Combat the COVID-19 Pandemic

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Abstract: The COVID-19 pandemic has not only affected the world in terms of their physical health but has also been a strain on our mental well-being. Individuals who have showcased the tendency to bounce back from this situation have been real survivors of this pandemic. With this background in mind, this research aimed to study the gender differences and age differences in stress resilience. The Stress Resiliency Profile by Thomas and Tymon (1992), Jr. was used for this purpose. An equal number of males and females (n=60; N=120) were evaluated for the study. To assess the age differences, the participants were divided into two age groups: 15-22 years and 22-30 years of age. There were an equal number of individuals in each group (n=60, N=120). The subjects were assessed on the three dimensions of Stress Resiliency Profile-Necessitating, Skill Recognition and Deficiency Focusing. Results indicated significant differences in the Deficiency Focusing dimension among males and females. In the age difference evaluation, significant differences were found in the Skill Recognition dimension. The findings have been discussed within the framework of previous research. The current research findings have significant implications for the study of stress and resilience.

Keywords: Pandemic; Stress resilience; Gender difference; Age difference

1. Introduction

The Wuhan Municipal Health Commission in China reported multiple cases of pneumonia on December 31, 2019. This pneumonia was later identified as SARS-CoV-2, coronavirus. WHO later announced it as the COVID-19 pandemic on March 11, 2020 [1].

The negative psychological implications have not only been reported by the frontline workers, but also by the general population.

Stress has been a major component of examining the adversity of the pandemic. In the lieu of the severity of the pandemic, various governments issued guidelines to administer social distancing and hygiene, however, seeking social support stands as the most adaptive way to cope with stress [2].

Adverse stimuli have a strong connection with the consequences of stress [3] and the 4 major pathways to process any adversity is labelled as establishing and maintaining self-esteem and self-efficacy, exploring new opportunities, reducing the negative chain reaction and risk impact [4].

Various studies have emphasised the importance of

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resilience as a tool to improve personal development and attain a better quality of life [5] and the orientation of the students pursuing their degrees at a university [6].

Although various factors may be difficult to study in animals, various psychological and social factors have been associated with the development and establishment of resilience [7].

Resilience

A personal quality that helps individuals face adversity and adapt to sudden circumstances and changes is what represents resilience [8].

Resilience research has always been emphasised as finding its meaning in positive adaptation [9]. It has always been after certain pioneering research that emphasis has been put on raising children and youngsters are resilient beings [10].

The course of resilient studies has found a major shift from identifying protective factors to examining how a person would overcome adverse situations, and examining the role of psychosocial determinants of resilience in trauma-exposed individuals [11-13].

Many believe that stress resilience has two elements in common- adversity and positive adaptation [14]. It was found that resilience studies have 4 aspects: pre-adversity, the adversity itself, post-adversity and the predictors of resilient outcomes [13].

Empirical research established three critical conditions in the conceptualisation of resilience-finding oneself in adversity, internal and external protective factors, and adapting positively to the adversity [6].

The various psychosocial factors that have found their contributions to resilience are active coping, prosocial behaviours, cognitive reappraisal, and social support [15-18]. Social support has been an extremely pertinent protective factor/element that facilitates the well-being of a family, quality of parenting and resilience among children [19].

Research indicates that a considerable amount of importance needs to be given to interventions that promote resilience. These should address the policies and programs that target the enhancement and establishment of protective factors that span across home and school environments [20-22].

Studies show that safe and nurturing homes and supportive parent-child relationships help in the development of higher levels of self-esteem, self-efficacy and formation of positive self-identity [23-25]. There is also evidence that proves that if parents have their psychosocial needs met, they tend to be more effective in their roles as caregivers [26,27].

It is believed that men and women are socialised differently and play different roles in their lives thereafter,

behavioural genetic research does not take one's sex as an environmental moderator. One's biological sex acts as a representative of the environment men and women are socialised. Their sex acts as an enabler of resilience amongst men and restricts resilience building amongst women. This is also evident in depression studies where the heritability of depression is 30% among girls and not relevant enough among boys [28].

Hence, both gender and age play a crucial role in determining how an individual deals with various stressors in life. The pandemic gave individuals unprecedented amounts of strain. As per research, individuals with high resilience levels were the only ones who were able to bounce back.

2. Aim and Hypotheses

With this background in mind, the purpose of the current study is to find:
-To assess gender differences in stress resilience during the COVID-19 pandemic.
-To assess age difference in stress resilience during the COVID-19 pandemic.
 Based on the review of literature, the following hypotheses were proposed:
-Males would score higher on stress resiliency as compared to their female counterparts.
-Participants in the older age group would score higher on stress resiliency as compared to younger individuals.

3. Methodology

3.1 Sample

A total number of 230 questionnaires were sent to males and females falling in the age bracket of 15 to 30 years, out of which 196 were received. 34 out of 196 questionnaires were found to be incomplete and were not eligible for further analysis. Out of the remaining 162 questionnaires, 120 were selected, 60 representing the males and females above the age of 22 and 60 representing males and females below the age of 22. Individuals belonging to the northern states of India (Panjab, Haryana, Himachal Pradesh, Chandigarh, and Delhi) were approached for the current research. The sample consisted of individuals pursuing their higher education (ages 15-22) and/ or young adults in the early stage of their career (ages 23-30). Individuals falling outside the set age bracket were ruled out from constituting the sample.

3.2 Design

The study aimed to analyse the gender differences and

age differences in stress resilience to combat the COVID-19 pandemic using the Stress Resiliency Profile. The data for the current research were collected using google forms. Responses were arranged and scored according to the instructions in the manual. Scores were calculated, tabulated, and interpreted to find the significant differences in scores of males and females falling in the age bracket of 15 to 30 years; and age differences between individuals below the age of 22 and above the age of 22 using -way ANOVA for all the three sub-dimensions of the Stress Resiliency Profile. The three dimensions are- deficiency focusing, necessitating and skill recognition.

3.3 Tools Used

- **Stress resiliency profile (Kenneth W. Thomas and WalteR G. Tymon, JR, 1992)**

Stress is a complex condition which involves 3 different kinds of events

1) Stressful events in the environments
2) Events in our minds as we try to interpret and cope with those stressors
3) Physiological events in your body (inclusive of tension, fatigue, and other symptoms of strain).

Stress occurs when people perceive their events are placing excessive demands upon them. The degree of stress experienced depends on one's perception. Perception determines whether a given situation is experienced as an 'excessive demand' at all as opposed to a challenging task or even an opportunity.

These perceptions depend upon the way one goes about interpreting the facts of the situation. Our research has identified three specific thought patterns or 'interpretive habits' which influence stress: deficiency focusing, necessitating and low skill recognition.

The three interpretive habits will be discussed in order of their importance. While all three contribute to stress, research shows that the deficiency focusing has the strongest and most persistent effect on stress, followed by necessitating and then low skill recognition.

I. DEFICIENCY FOCUSING: This is the habit of focusing on the negatives at the expense of the positive.

II. NECESSITATING: This occurs when we think it is necessary or imperative that we do something/ that we 'need to' or 'have to do a certain task.

III. LOW SKILL RECOGNITION: This refers to a tendency for us not to recognise the role of our abilities in producing our successes.

This scale is a self-administering questionnaire composed of 18 statements. Each individual is expected to choose a number from 1 to 7 that best describes how strongly they disagree or agree with a statement.

Statement number(s) 2, 6, 9, 11, 13 and 16 are for Deficiency Focusing dimension.

Statement number(s) 3, 5, 7, 10, 15 and 17 are for Necessitating.

Statement number(s) 1, 4, 8, 12, 14 and 18 are for Skill Recognition.

Items are based on 7 - a point Likert rating scale (1 - strongly disagree to 7 - strongly agree). Cronbach alpha is 0.87, 0.74, and 0.85, for deficiency focusing, necessitating and skill recognition respectively.

4. Results

Table 1 shows the Mean and Standard Deviation for Males and Females in the three dimensions of the Stress Resiliency Profile.

The mean for males in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 24.9, 27.97, and 30.68 respectively. The SD for the same came out to be 6.36, 3.83 and 2.75 respectively.

The mean for females in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 27.97, 29.93 and 30.1 respectively. The SD for the same came out to be 3.93, 4.97 and 3.2 respectively.

Tables 1.1, 1.2 and 1.3 show the one-way ANOVA calculations for the total scores of males and females in Deficiency Focusing, Necessitating and Skill Recognition dimensions respectively.

The difference between the mean score of females (M= 27.97) for the deficiency focusing dimension was higher than that of males (M= 24.9) and this difference was found to be significant (F $\{1,118\}$ = 19.054, p<0.01).

As can be seen from the other table F values, none of the other values in the other dimensions came out to be significant.

Table 2 shows the Mean and Standard Deviation for individuals below and above 22 years of age in the three dimensions of the Stress Resiliency Profile.

The mean for individuals above the age of 22 in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 26.15, 29.55 and 30.43 respectively. The SD for the same came out to be 5.12, 3.81 and 2.91 respectively.

The mean for individuals above the age of 22 in the dimensions of deficiency focusing, necessitating and skill recognition came out to be 25.32, 28.72 and 31.53 respectively. The SD for the same came out to be 5.71, 4.39 and 2.56 respectively.

Tables 2.1, 2.2 and 2.3 show the one-way ANOVA for the total scores of individuals in 15-22 years and 22-30 years of age for Deficiency Focusing, Necessitating and

Skill Recognition dimensions of Stress Resiliency respectively.

The difference between the mean score of individuals above the age of 22 (M= 31.53) for the skill recognition dimension was higher than that of individuals below the age of 22 (M= 30.43) and this difference was found to be significant (F {1,118}= 122.033, p<0.01).

As can be seen from the other F values, none of the other values in the other dimensions came out to be significant.

Table 1. The Mean and SD of males and females in the three dimensions of Stress Resiliency.

		DEFICIENCY FOCUSING	NECESSITATING	SKILL RECOGNITION
MALES	MEAN	24.9	27.97	30.68
	SD	6.36	3.83	2.75
FEMALES	MEAN	27.97	29.93	30.1
	SD	3.93	4.97	3.2

Table 1.1 The one-way ANOVA for Males and Females in Deficiency Focusing on Stress Resiliency.

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MS	F
Between	282.133	1	282.133	19.054**
Within	1747.334	118	14.807	

** F .99 (1,118)= 6.84

Table 1.2 The one-way ANOVA for Males and Females in Necessitating dimension of Stress Resiliency.

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MS	F
Between	116.032	1	116.032	5.902
Within	2319.668	118	19.658	

Table 1.3 The one-way ANOVA for Males and Females in the Skill Recognition dimension of Stress Resiliency.

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MS	F
Between	10.208	1	10.208	1.144
Within	1052.884	118	8.918	

Table 2. The Mean and SD of individuals in the 15-22 years and 22-30 years age group in the three dimensions of Stress Resiliency.

		DEFICIENCY FOCUSING	NECESSITATING	SKILL RECOGNITION
BELOW 22	MEAN	26.15	29.55	30.43
	SD	5.12	3.81	2.91
22 & ABOVE	MEAN	25.32	28.72	31.53
	SD	5.71	4.39	2.56

Table 2.1 The one-way ANOVA for Age Difference in Deficiency Focusing dimension of Stress Resiliency.

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MS	F
Between	20.833	1	20.833	0.707
Within	3472.634	118	29.429	

Table 2.2 The one-way ANOVA for Age Difference in Necessitating dimension of Stress Resiliency.

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MS	F
Between	20.833	1	20.833	1.232
Within	1995.034	118	16.907	

Table 2.3 The one-way ANOVA for Age Difference in Skill Recognition dimension of Stress Resiliency.

SOURCE OF VARIATION	SUM OF SQUARES	DEGREES OF FREEDOM	MS	F
Between	917.467	1	917.467	122.003**
Within	887.468	118	7.520	

**F.99 (1,118)= 6.84

5. Discussion

The computed value of F exceeded the critical value of F at df (1,118) for the Deficiency Focusing dimension in the gender difference outcome. The results show that females scored higher than men in the dimension of deficiency focusing and there was a significant difference in the difference. The deficiency Focusing dimension has been explained as the habit of focusing on the negatives at the expense of the positives. High scores on the Deficiency focusing scale are regarded as a sign of predisposing oneself to stress at a high level. The dangers and shortcomings of life seem to be the centre of life's attention for females resulting in unnecessary distress.

In the age difference category, the computed value of F exceeded the critical value of F at df (1,118) in the skill recognition dimension. Results indicated that individuals above the age of 22 scored higher than individuals below the age of 22 in this dimension, and the difference was found to be significant. Low skill recognition scores indicate an individual's failure to attribute their success to their capabilities. Individuals who score high on skill recognition turn out to be the most resilient persons.

Research indicates that the effects of the pandemic on stress were higher amongst women in the Italian population [29]. In context to the Australian population too, women were said to suffer from higher levels of stress due to the ongoing pandemic [30]. Women, young people and individuals who lost their jobs have shown negative psychological symptoms and higher levels of stress than the general population [31]. In another research conducted among the Spanish population, women and children were said to be the most stressed individuals in the lieu of the pandemic [32].

The outcome of the study also indicates that most individuals who fall under the age of 22 were school and university students. Various studies show that resilience is an important tool to improve the quality of life and enhance the personal development of university students [5] UNESCO and OECD emphasise the role of inner and interpersonal skill development to enhance resilience and coping strategies to combat stress. This would also improve the emotional management component [33,34].

Age and qualification have also been positively correlated with stress resilience [35]. These coping strategies tend to help stop unpleasant emotions and thoughts and adopt a more problem-focused strategy to reduce the impact of stress [36]. It has also been seen that concentrating more on the information surrounding the current pandemic leads to higher psychological distress [37].

6. Strengths and Limitations

Dealing with the repercussions of the pandemic has been challenging for individuals regardless of their age, race, sex or ethnic background. The current study has a limited scope as far as studying the impact of the pandemic on age-related consequences is concerned. There is also a lack of clarity in the age bifurcations and the various roles that are challenged as one progresses in the age cycle. Regardless of these limitations, this research works as a motivator for any future review and study in the field of human resilience. This study also reveals the role of one's gender in determining their strength. The findings have been discussed within the framework of previous research. The current research findings have significant implications for the study of stress and resilience.

7. Conclusions

The current research findings have significant implications for the study of stress and resilience. Resilience acts as an extremely purposive tool when individuals are made to face extreme or minute adversities of life. In its contribution to overall well-being, it is important to note that having a resilient personality gives room for higher levels of self-positive behaviours and self-esteem to flourish. The results show that younger individuals have lower levels of resilience than females. Since being exposed to positive and nurturing social environments has a positive impact on well-being across developmental stages and into adulthood, younger generations should be fostered in highly facilitating environments which help in the development of a resilient personality. A positive family environment and positive surroundings are pertinent features in this aspect.

Conflict of Interest

There are no financial or non-financial interests that are directly or indirectly related to the work submitted for publication.

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