Depression, Anxiety, and Stress among Indian Urban Affluent Adults

Abstract

Introduction: Mental health disorders now have a major share in the global burden of diseases. Regular screening of populations is crucial for timely detection and prevention. A lot of attention has been rendered to the assessment of depression, anxiety, and stress using Depression Anxiety and Stress Scale-21 (DASS-21) among school- or college-going population. However, assessments among adults are limited. Methodology: Urban, affluent, 30–45-year-old apparently healthy adults (n = 218; both males and females) were enrolled from preventive health check programs of private hospitals in the National Capital Region, Delhi, India. The DASS-21 item questionnaire was administered as a part of cross-sectional data collection after obtaining written informed consent. Scores were computed as per the DASS-21 manual, and their correlations with probable demographic, dietary, lifestyle, anthropometric, and biophysical factors were explored. Results: Mild to moderate levels of depression anxiety and stress were observed among 22.1%, 23% and 15.2% respectively and severe or extremely severe levels were observed among 5.1%, 8.7% and 7.3% participants respectively. No meaningful correlations were observed with demographic, dietary, lifestyle, anthropometric, and biophysical factors in this population. Conclusion: The incidence of these factors in an apparently healthy and productive population highlights the importance of regular screening for timely detection and designing clinical preventive strategies. Also, further research is needed to ascertain if the DASS scores have any probable relationship with demographic dietary, lifestyle anthropometric and biophysical factors such as those assessed in this study.

Keywords: Adults, Depression Anxiety and Stress Scale, Depression Anxiety and Stress Scale-21, India*, stress, urban

Introduction

Stress has increasingly become a common part of the urban lifestyle and has been found to be persistently prevalent among young adults. Long-term exposure to stress can have adverse effects on the musculoskeletal health, cardiovascular system, and gastrointestinal system among other health issues, whereas short-term stress can act as a trigger for fatal health events. In fact, chronic stress may cause depression and anxiety among individuals. Therefore, assessment of these factors is essential for preventive action.

There are several standardized psychological assessment tools available to assess depression – Patient Health Questionnaire,[8] stress – the Perceived Stress Scale[9] and the Standard Stress Scale,[10] and anxiety – Generalized Anxiety Disorder questionnaire[11] among populations. The 21-item depression anxiety and stress scale (DASS-21) is a comprehensive tool with three seven-item subscales assessing each of these factors.[12] Several studies have used DASS-21 for the assessment of school- or college-going students in India.[2,13‑17] However, studies on assessment among young adults have been limited. Hence, in this study, DASS-21 was used to assess depression, anxiety, and stress among 30–45-year-old young Indian adults.

Methodology

Appropriately healthy urban affluent 30–45-year-old adults (both males and females) were enrolled from preventive health check programs of private hospitals in National Capital Region, Delhi, India. The DASS-21 questionnaire was administered to the participants as a part of cross-sectional data collection after obtaining their written informed consent. For administration, they were instructed to rank the statements from 0 to 3 indicating the extent to which

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each of the statements applied to the past week of their life (least applicable was scored 0, whereas most applicable was scored 3). The scores were calculated separately for depression, anxiety, and stress using a standard scoring template available with the DASS-21 package. Final scores were obtained by multiplying each score by 2. These scores were then compared with the standard DASS-21 severity ratings, as indicated in Table 1.

As a part of the cross-sectional data, information pertaining to the demographic (age, gender, education, and socioeconomic status), dietary (food habit, meal pattern, meal skipping, snacking, and eating out), lifestyle (smoking, alcohol consumption, exercise, occupation, nature of work, and commutation), anthropometric (body mass index, weight, and waist circumference), and biophysical (lipid profile and blood pressure) factors was collected. Kendall’s tau (for continuous variables) and point biserial (for categorical variables) correlation were used to explore the correlation between these factors and the DASS scores of participants. STATA 13 software (StataCorp, Texas, USA) was used for this purpose.

### Results

The median depression, anxiety, and stress score of the participants corresponded to the normal category as per the DASS severity ratings. The overall DASS scores indicated that the majority of the participants were experiencing normal levels of depression (72.9%), anxiety (68.4%), and stress (77.5%), i.e., levels that are not high enough to be of clinical significance (P. Lovibond, personal communication, August 8, 2015). In other words, the extent of depression, anxiety, and stress that these individuals were experiencing is a usual part of day-to-day life and is not deterrent for their health as it can usually be coped well with. However, there were still 22.1%, 23%, and 15.2% of participants who were experiencing mild-to-moderate levels of depression, anxiety, and stress, respectively. In fact, 5.1%, 8.7%, and 7.3% of them were experiencing severe or extremely severe depression, anxiety, and stress levels, respectively. Gender-wise observations revealed that severe or extremely severe depression and anxiety levels were more common among males, whereas females were more commonly experiencing severe or extremely severe stress in their daily lives [Table 2].

On testing the probable correlations between the demographic, dietary, lifestyle, anthropometric and biophysical factors, and the DASS scores of the participants, no meaningful correlations were observed. They were mostly found to be weak-negative or weak-positive correlation (coefficients nearing zero).

### Discussion

Younger population going to school and college has been the subject of interest for studying mental health issues in India. Not many studies have assessed these psychological factors among young Indian adults. To the best of our knowledge, our study is the first to use DASS-21 among adults of age 30–45 years. The scores indicate that on an average, nearly one-fourth of the adults had higher than normal levels of depression, anxiety, and stress, i.e., levels high enough to be of clinical significance. In fact, about 5%–8% of them were experiencing severe or extremely severe levels. This observation is critical because these adults were apparently healthy and were carrying out their normal routine life wherein their mental health issues would probably remain undetected. Among the few studies that have assessed adults, the prevalence of work stress among women has been reported to be 64%.[18] In fact, higher levels of stress have also been seen among homemakers.[19] More recently, similar prevalence was observed among resident Indian doctors; with almost 18.6%, 20.8%, and 19.1% of them experiencing mild-to-moderate levels and 9.1%, 15.8%, and 5.2% of them experiencing severe and extremely severe levels of depression, anxiety, and stress, respectively.[20]

### Table 1: DASS-21 severity ratings for depression, anxiety and stress scores

| Severity          | Depression | Anxiety | Stress |
|-------------------|------------|---------|--------|
| Normal            | 0-9        | 0-7     | 0-14   |
| Mild              | 10-13      | 8-9     | 15-18  |
| Moderate          | 14-20      | 10-14   | 19-25  |
| Severe            | 21-27      | 15-19   | 26-33  |
| Extremely severe  | 28+        | 20+     | 34+    |

Source: Lovibond and Lovibond, 1995

### Table 2: Distribution of participants based on DASS-21 scores

| Severity ratings | No. of participants | Depression | Anxiety | Stress |
|------------------|---------------------|------------|---------|--------|
|                  | Males (n=122)       | Females (n=96) | Total (n=218) |
| Normal (0-9)     | 94 (77.1)           | 65 (67.1)  | 159 (72.9) |
| Mild (10-13)     | 11 (9)              | 14 (14.6)  | 25 (11.5)  |
| Moderate (14-20) | 10 (8.2)            | 13 (13.5)  | 23 (10.6)  |
| Severe (21-27)   | 7 (5.7)             | 3 (3.1)    | 10 (4.6)   |
| Extremely severe (28+) | 0 (0)   | 1 (1)     | 1 (0.5)    |
| Anxiety [Median score 4 (0,8)] |
| Normal (0-7)     | 84 (68.9)           | 65 (67.7)  | 149 (68.4) |
| Mild (8-9)       | 10 (8.2)            | 8 (8.3)    | 18 (8.3)   |
| Moderate (10-14) | 15 (12.3)           | 17 (17.7)  | 32 (14.7)  |
| Severe (15-19)   | 5 (4.1)             | 2 (2.1)    | 7 (3.2)    |
| Extremely severe (20+) | 8 (6.6) | 4 (4.2)  | 12 (5.5)   |
| Stress [Median score 6 (0-14)] |
| Normal (0-14)    | 93 (76.2)           | 76 (79.2)  | 169 (77.5) |
| Mild (15-18)     | 7 (5.7)             | 4 (4.2)    | 11 (5.1)   |
| Moderate (19-25) | 16 (13.1)           | 6 (6.3)    | 22 (10.1)  |
| Severe (26-33)   | 4 (3.3)             | 8 (8.3)    | 12 (5.5)   |
| Extremely severe (34+) | 2 (1.6)  | 2 (2.1)  | 4 (1.8)    |
We did not find any meaningful correlations between probable demographic, diet, lifestyle, anthropometric and biophysical factors, and the DASS scores obtained by the participants. Literature indicates that not many studies have tested and reported such correlations. There is probably just one study that found significant associations between work-related factors such as job position, long duty hours, lack of job satisfaction, staying in a hostel, etc., and the DASS scores in the Indian adult population.[20]

Mental health issues can have a detrimental effect on health-related behaviors (e.g., alcohol consumption and tobacco smoking or dependence, poor diet, and reduced physical exercise) that can increase the risk of several major morbidities such as cardiovascular diseases, cancers, etc.[21-25]

Even then, they are the leading cause of years lived with disability worldwide along with substance abuse disorders, with depressive disorders accounting for 40-5%, and anxiety disorders accounting for 14-6% of disability-adjusted life years caused.[26] These statistics clearly indicate the importance and the lack of early detection as well as prevention of mental health issues among populations. In fact, it can be rightly said that they have not been given the attention they warrant as mental health issues have still been left out of the purview of global action plans for the prevention of major noncommunicable diseases.[27]

Conclusion
With this evidence in the background, our study highlights the importance of preventive screening for mental health and designing clinical preventive strategies for timely detection among the young population. Furthermore, it stresses on the need for further research studies to determine probable factors that might be correlated with the DASS scores for strengthening the preventive strategies for mental health that may be designed based on the application of this tool.

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Conflicts of interest
There are no conflicts of interest.

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