Pooja Rani
Department of Home Science, R.G. (P.G.) Degree College, Meerut, Uttar Pradesh, India

Dr. Archana Sharma
Department of Home Science, R.G. (P.G.) Degree College, Meerut, Uttar Pradesh, India

Incidence of mental health issues and its association with socio-demographic factors among youth in Meerut city

Pooja Rani and Dr. Archana Sharma

Abstract
Background: Poor mental health in school-going students has been reported worldwide. Mental health is important for people belonging to all age groups, especially the youth as it play a major role in their studies and future goals.
Objective: The purpose of this survey estimate the prevalence of mental health issues like Depression Anxiety and Stress among school-going children who have studied in government schools and the association of Depression, Anxiety, and Stress (DAS) with socio-demographic characteristics.
Methods: This study is conducted in Meerut district of Uttar Pradesh. A self-structured questionnaire for the socio-demographic factors and DASS-42 scale is used to assess the level of DAS. The sample age group taken is between 15 – 18 years.
Results: The sample size was 180 students, 111 of the participants were male (61.66%) and 69 of the participants were female (38.34%). Results indicate that the incidences of DAS were reported 56.11%, 77.78% and 63.33% respectively. Anxiety scores were significantly higher than Depression and Stress. A positive correlation is reported between Depression & Anxiety was higher (0.588) as compared to Depression & Stress (0.557) and Anxiety & Stress (0.484). Depression was significantly associated with age (p=0.023), gender (p=<0.00001) and subject group (p=0.0234), Anxiety was significantly associated with religion (p=0.0334) and type of food (p=0.0188) and Stress was significantly associated with the subject group (p=0.0029) only.
Conclusion: The study reported a high prevalence of mental health disorders in school going population. A significant association with socio-demographic characteristics and DAS was also seen in the concerned age group. Thus, it can be concluded that there is a need to organize mental health education programs in all schools of Meerut city to improve the quality of mental health of the youth.

Keywords: Mental health issues, school-going youths, socio-demographic characteristics

1. Introduction
Youth is considered to be a stressful phase of life influenced by immaturity due to physical, sexual, and physiological changes. Therefore, this phase is more prone to psychological conditions like depression, anxiety, and stress (Casey *et al*. 2010) [1]. Mental health problems account for 16% of the global disease and accident burden for people between the ages of 10 to 19. Globally, depression is fourth leading causes of adolescent disease and impairment and the ninth leading cause of anxiety among adolescents (WHO fact sheet 28 Sept 2020). Depression, anxiety, and stress affect psychosocial functioning in youth. Psychosocial functioning is a significant factor to examine mental illness as youth spend their full time in school and with peer groups (Goodman, 1994) [4].

Overall, according to reports from The World Health Organisation (WHO), the reported prevalence levels of mental illness among youth range from 1% to 51%. In developing countries, the prevalence of mental illness among youth attending primary medical facilities increases from 12% to 29%. Many studies reveal that the incidence rates of individual depression, anxiety, and stress disorders among youth are being increased. Majorly, depression was the fourth most common human illness in 1990 and is estimated to place second in youth by 2020 (Alvi *et al*. 2010 [5]; Lopez & Murray 1998 [6]; and Rask *et al*. 2002) [7].

Corresponding Author:
Pooja Rani
Department of Home Science, R.G. (P.G.) Degree College, Meerut, Uttar Pradesh, India

National Mental Health Survey conducted in 2015-16, reported an overall lifetime prevalence of mental illness 13.70% with neurosis and stress-related disorder affecting twice as many women than men and more in urban the rural area (Gururaj *et al*. 2016) [13].

DAS is recognized in changing social context as normal to severe disorder and chronic mental illness problem, which affect school-going youth (Casey *et al*. 2010) [1]. The frequency of Depression was 65.53%, anxiety was 80.85%, and stress was 47.02%. The overall incidence between Depression and Anxiety was 51.65%. Extremely severe Depression was very less 3%. In the female prevalence of DAS was higher than males (Sandal *et al*. 2017) [8]. The other similar study found that the prevalence of DAS was (41.5%), (66.2%) and (52.5%) conducted on girls in Abha, Saudi Arabia (Khalid *et al*. 2009) [11].

Suicide is the third most common cause of death in 15-19 years by WHO. Some studies have indicated that mental illness is less relevant in low and middle-income nations for suicidal behaviour. Most of the suicide cases in India occurred at the age of 30 and about 90% of those who die by suicide are mentally disordered. Around 8% of children and teenagers suffer from depression and 11% of teenagers suffer from a depressive disorder at the age of 18 as per the National Co-morbidity Survey Adolescent Supplement (Phillips *et al*. 1999 [9]; Vijaykumar 2007; and Khalid *et al*. 2009) [11] and the other hand psychological distress indicate a probably psychotic disorder had the biggest independent contribution to the incidence of suicidal ideation in youth.

Based on previous studies, there is available regarding the prevalence of depression, anxiety and stress in adolescents but few studies have been done in Utter Pradesh, especially in Meerut city. Therefore, the present study has been conducted to the prevalence of depression, anxiety, and stress among youth and to find out the association of depression, anxiety, and stress with socio-demographic factors such as age, gender, class, and type of family in the Meerut City of Uttar Pradesh.

2. Material and Method
A descriptive cross-sectional survey was performed in Government schools in Meerut, Utter Pradesh. Sample size 180 was taken between 15-18 years for both gender (Girls & Boys) and age groups. It was chosen by Random sampling. Depression, anxiety, and stress scale (42) were used to carry out the level of mental health. There were 14 questions of each and devised in five-level (Normal, Mild, Moderate, Severe and Extremely Severe) and used a self-made questionnaire for socio-demographic characteristics.

3. Results
Figure-1 showed the Socio-Demographic characteristics of participants were separated into groups according to gender out of 180 students, 111 of the participants were male (61.66%) and 69 of the participants were female (38.34%). According to the age, the majority of students 40% were 15 years old and 60% were 16-18 years old. The mean age was 16.18 years. Most of the participant's religion was Hindu (88.33%) and Muslim (10%) Christen (1.67%). According to the family income, the majority of student family income <10,000 INR were (70%) and only 30% were >10,000 INR. All of the participants were single and from a Government school. Most of the participants were from an urban area (83.33%) and only (16.67%) from rural areas. According to the type of food, (41.67%) were Egg-vegetarian, (35%) Vegetarian and (23.33%) Non-Vegetarian.
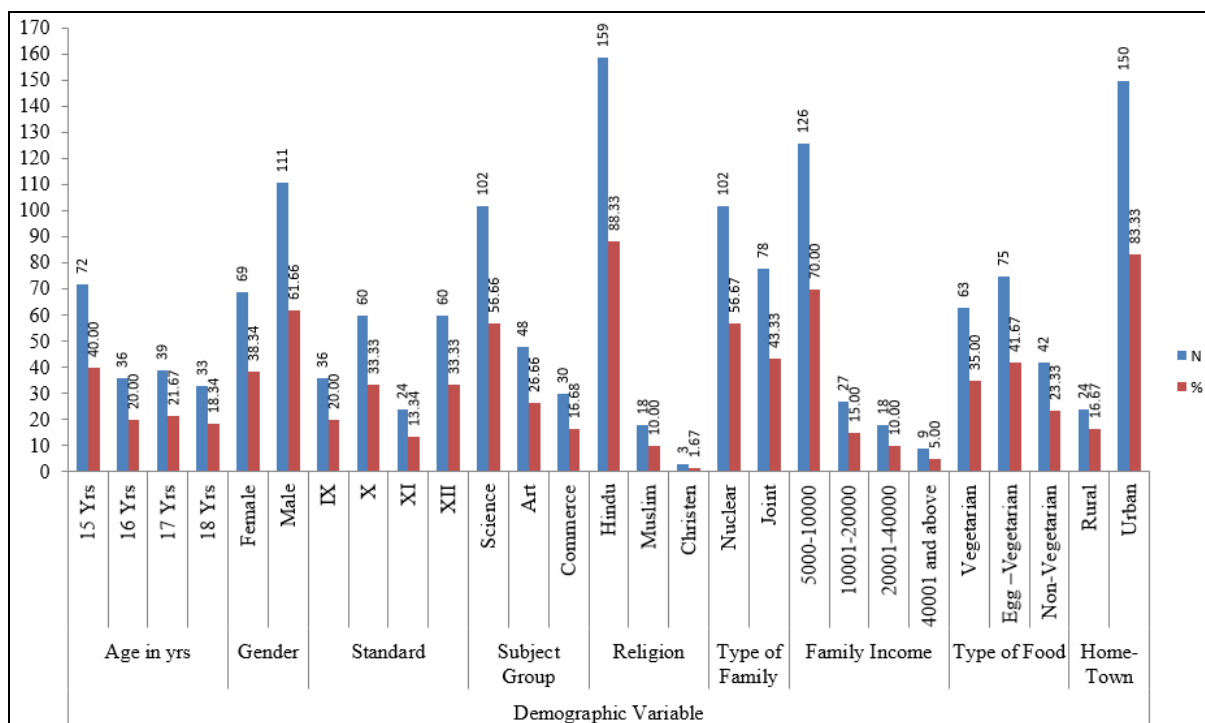

Fig 1: Distribution of participants according to Demographic characteristics N=180

Figure-2 Normal Depression score was 79 (43.89%), Mild Depression score was 37 (20.56%), Moderate Depression score was 32 (17.78%), Severe Depression score was 20 (11.11%), Extremely Severe Depression score was 12 (6.66%) and Depression free participants 43.89% only was higher than Anxiety and Stress. The normal Anxiety score was 40 (22.22%) only 40 participants was Anxiety free. Mild Anxiety was scored 29 (16.11%), Moderate Anxiety score was 43 (23.89%), Several Anxiety score was 36 (20.00%) and Extremely Several Anxiety score was higher 32 (17.78%).

Anxiety score was very higher with 77,78%. Normal Stress score was 69 (36.67%), Mild Stress score was 27 (15.00%), Moderate Stress score was 45 (25.00%), Several Stress score was 30 (16.67%0 and Extremely Several Stress score was 12. (6.66%0. The Prevalence of Depression, Anxiety, and Stress were 56.11%, 77.78% and 63.33% respectively. Anxiety scores were significantly higher than Depression and stress. Depression scores were higher in females than males. Anxiety and stress scores were higher in males than females. Free of depression were reported (43.89%), anxiety (22.22%) and stress (36.67%). DAS free participants were higher in males than females.
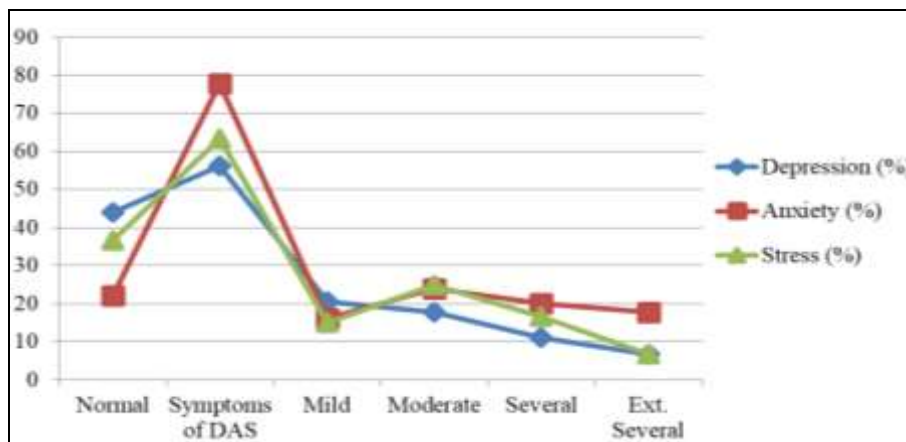

Fig 2: Prevalence of Depression Anxiety and Stress

Table-1 shows that 50.56% of the students had depression and anxiety, 42.78% of the students had depression, and stress, 54.44% of the students had stress and anxiety. About 40.56% of the students had all three mental disorders.

Table-2 showed a positive and significant correlation between Depression and Anxiety was higher (0.588) as compared with Depression and Stress was (0.557), and Anxiety and Stress was (0.484).

Table 1: Co-morbidity of Depression Anxiety and Stress (N=180)

Co-morbidity	N (%)
Overall	73 (40.56)
Depression and Anxiety	91 (50.56)
Depression and Stress	77 (42.78)
Stress and Anxiety	98 (54.44)

Table 2: Correlations between Depression, Anxiety and Stress

	Depression	Anxiety	Stress
Depression	1.000	-	-
Anxiety	0.588	1.000	-
Stress	0.557	0.484	1.000

Table 3: Association between Depression, Anxiety, and Stress with Socio-Demography
Table 3a: Association between Depression and Socio-Demograp-hic Factors

Factors	Presence of Depression	Free of Depression	Chi-square value	P-value
Age				
15-16	68	40	5.13	0.023
17-18	33	39		
Gender				
Male	43	68	41.472	<0.00001
Female	58	11		
Standard				
IX-X	59	37	2.383	0.122
XI-XII	42	42		
Subject Group				
Science	51	51	7.503	0.0234
Art	35	13		
Commerce	15	15		
Religion				
Hindu	92	67	1.815	0.403
Muslim	9	8		
Christian	1	3		
Type of food				
Vegetarian	39	24	4.46	0.107
Non-vegetarian	36	39		
Egg Vegetarian	28	14		

*Significance level p=<0.05

Table 3a: showed the association between Depression and socio-demographic characteristics. Depression were significantly associated with age (p=0.023), gender (p=<0.00001) and subject group (p=0.0234). There is no significant relation with standard, Religion and type of food.

Table 3b: Association between Anxiety and Socio-Demographic Factors

Factors	Presence of Anxiety	Free of Anxiety	Chi-square value	P-value
Age				
15-16	86	22	0.52	0.470
17-18	54	18		
Gender				
Male	84	27	0.732	0.392
Female	56	13		
Standard				
IX-X	59	37	2.383	1.22
XI-XII	42	42		
Subject Group				
Science	75	27	3.711	0.156
Art	38	10		
Commerce	27	3		
Religion				
Hindu	125	34	6.796	0.0334
Muslim	14	3		
Christian	1	3		
Type of food				
Vegetarian	48	15	7.939	0.0188
Non-vegetarian	65	10		
Egg vegetarian	27	15		

*Significance level p=<0.05

Table 3b: revealed the association between Anxiety and socio-demographic factors. Anxiety was significantly associated with religion (p=0.0334) and type of food (p=0.0188). Anxiety was no significant relation with age, gender, standard and subject group.

Table 3c: Association between Stress and Socio-Demographic Factors

Factors	Presence of Stress	Free of Stress	Chi-square value	P-value
Age				
15-16	66	42	0.569	0.450
17-18	48	24		
Gender				
Male	67	44	1.093	0.295
Female	47	22		
Standard				
IX-X	64	32	0.982	0.321
XI-XII	50	34		
Subject Group				
Science	57	45	11.638	0.0029
Art	30	18		
Commerce	27	3		
Religion				
Hindu	102	57	1.068	0.586
Muslim	9	8		
Christian	3	1		
Type of food				
vegetarian	41	22	2.428	0.297
Non-vegetarian	43	32		
Egg Vegetarian	30	12		

*Significance level p=<0.05

Table: 3c: revealed the association between stress and socio-demographic factors. Stress was significantly associated with the subject group (p=0.0029) only. There is no significant relation with age, gender, standard, Religion and type of food.

4. Discussion

Mental well-being is important for all students, for their studies and future planning, we are healthy, then we can do anything so mental health is the most important factor in our life & current education process in curriculum exposes their students' several types of mental disorder like depression, anxiety and stress. We have used depression, anxiety and stress screening tool for accuracy and validness. We have reported a high prevalence of mental depression (56.11%) mental stress (63.33%) and mental anxiety (77.78%).

Findings from previous research around the world suggest a big proportion of students have these mental illness (Sandal *et al*. 2017 and Khalid *et al*. 2009) [8, 11]. A similar study found in Chandigarh city, the prevalence of depression, anxiety and stress were 65-52%, 80.85%, 47.02% respectively (Sandal *et al*. 2017) [8]. Furthermore study conducted in Jhansi 2016 revealed that depression was 57% present in youth whereas anxiety was 71% presented in both gender among medical student, for those with depression majority 73% had mild to moderate levels of depression and just 3% of respondents

suffered from very serious depression .67% of anxious response had mild to moderate levels and 29% had extreme levels of anxiety. (Yadav R. *et al*. 2016) and the other similar study found that the prevalence of DAS was (41.5%), (66.2%) and (52.5%) conducted on girls in Abha, Saudi Arabia (Khalid *et al*. 2009) [11].

5. Conclusion
This study showed that the overall incidence of Depression Anxiety and Stress symptoms among school-going youth in Meerut City, Uttar Pradesh was high and positive correlations between Depression, Anxiety and Stress. However, our results cannot be generalized to all. There is a need for more care, family support and awareness about mental health and early identification of DAS that can prevent any kind of mental disorder. Thus, it can be concluded that there is a need to organize mental health education programs in all schools of Meerut city to improve the quality of mental health of the youth.

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