Psychological wellbeing of college going Adolescent: Study of dual earner family in metropolitan cities

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Abstract
WHO reported that almost twenty percent of adolescent around the world suffers from psychological issue. The reported prevalence of mental issues ranges from 1-to-25 percent across different states. Due to changes in lifestyle, both parents have to work to fulfill the needs of the children growing in metropolitan cities. This study attempts to understand mental issues among the adolescents of the dual-earners. A self-administered questionnaire was developed to assess the lifestyle, and psychological wellbeing of the adolescents aged 15-19 years studying in the colleges of Delhi and Mumbai University. GHQ-12 was used to analyses the Psychological issues among the students. Total of 447 adolescent fulfilling the selection criteria, completed the questionnaire. The Results show that 22% in Mumbai and 27% in Delhi are suffering from Anxiety and Depression while almost one-fourth have Social Dysfunction in both cities. Adolescent with lower socio-economic status is suffering from multiple forms of mental health issues. Odds of psychological-wellbeing are less among adolescents who are studying in either Arts or Commerce field as compare to science students. Adolescents who have ever smoked, chew tobacco and drink alcohol have shown the significant higher symptoms of Anxiety and Depression. Anxiety & Depression and Loss of confidence is higher among the adolescent who spend less than two hours with their father either on weekdays or weekends and whose father drinks alcohol or smokes. The Permissive and authoritative/flexible parents have positive impact over their children psychological wellbeing. The study reflects the growing mental-health issues among adolescents due to varying factors and points the need of psychological counsellor for parent-child duo.

Keywords: Adolescent, psychological-wellbeing, parents, and metropolitan-cities

Introduction

India has been called the world's most depressed nation with 36% of the population suffering from major depression (Shankar & Shankar, 2016) [18]. Neuro-psychiatric disorders in India are estimated to contribute to 11.6% of the total global burden of diseases (WHO, 2008), and the country has the highest number of suicides in the world. According to WHO report, 2.5 lakh suicidal deaths reported in 2012, with over 40% among under age 30. India's first Mental Health Care Bill, which was conceived in 2013, made affordable, good quality, and easily accessible mental health care a right for all citizens of India; however, the bill has not yet been passed and is undergoing revision for further Parliamentary approval.

Every fifth adolescent in the world is likely to experience some form of the mental illness. It includes depression, mode disturbance, suicidal thoughts, eating disorder, substance use and others (WHO, 2011) [23]. Almost half of all mental health disorders in adulthood start by age 14, but most cases are undetected and untreated (WHO, 2016a) [25]. A meta-analysis by Reddy and Chandrashekar (1998) [16] of psychiatric epidemiological studies reported that an estimated prevalence of mental morbidity 22.2 per 1000 population among 15 to 24 years including 16 mental and behavioural disorders. Although, the prevalence of psychiatry morbidity among the adolescents has varied between 12 to 16.5 percent that includes depression, conduct disorder, social anxiety and Panic Disorder (Anita, Gaur, Vohra, Subhash, & Khurana, 2003; Srinath *et al.*, 2005) [1, 22]. A study in the city of Chandigarh among 10-17-year-old adolescents showed that the incidence rate of psychiatric disorder is 0.18% per annum (Malhotra, Kohli, Kapoor, & Pradhan, 2009) [13]. Depression is the top cause of illness and disability among adolescents and suicide is the third cause of death (WHO, 2016a) [25]. In India, several studies found the widespread prevalence of the depression to be between 0.1 to 18.5 percent, highest among all the other psychiatry disorders. The prevalence of conduct disorder lies from 0.2 to 9.2 and anxiety from 0.1 to 24.4 percent among Indian adolescents (Anita *et al.*, 2003; Malhotra *et al.*, 2009; Nair, Paul, & John, 2004) [1, 13, 14]. Improving mental health and reacting to problems on a continuous basis demands a range of adolescent-friendly health care and counselling services in communities (WHO, 2011) [23].

Stress is an outcome of or a general response to an action or condition arising from an interaction of the person with his circumstances and places special physical or psychological demands, or both, on a person. The physical or mental needs from the environment cause stress, commonly known as stressors and the personal reaction to

them take various forms and depend on numerous intrinsic and/or extrinsic constituents. Sahoo and Khess (2010) [19] using Depression Anxiety Stress Scale (DASS) observed that 20 percent young adults experienced stress. Dubat, Punia, and Goyal (2007) [4] using life stress scale found that girl's student aged 15-17 in 12th standard from Hisar and Hyderabad have 47.5 and 72.5 percent moderate family stress respectively. Sixty and 50 percent have financial stress and, 90 and 85 per cent had a moderate level of social stress, respectively in two regions. The other study by Sharma & Sidhu among adolescents aged 16-19 year using self-made questionnaire based on Bisht Battery of Stress found that 90.6 per cent teens had academic stress (J. Sharma & Sidhu, 2011) [20]. According to the World Health Organization (WHO) estimates about 8 lakh people commit suicide each year and it is a second leading cause of death among the young people with India accounting for the highest estimated number of suicidal deaths (WHO, 2016b) [26]. In addition, due to changes in lifestyle, both parents have to work to fulfil the needs of the children growing in metropolitan cities and they are unable to provide the required care, resulted in the delinquent behavior and increasing psychological issues. This study is an attempt to understand the mental issues among the adolescents of the dual-earners.

Objective
This study is an attempt to understand the mental issues among the adolescents of the dual-earners.

Methodology
In study, a multistage procedure employed to understand the significant relationship between the psychological wellbeing, lifestyle, and socio-demographic factors through a self-administered questionnaire.

Site and Population
Delhi University and Mumbai University were purposively selected for the survey due to there presence in the biggest metropolitan cities of India. The first is the Indian capital and the second is the economic capital of India. These cities have largest chunk of parents working not only to fulfil their needs but also to support their lifestyle. The study focused on adolescents (Under 20 years) studying in colleges, staying in Delhi and both parents working for more than 1 year.

Sampling Design
The study was exploratory in nature; therefore, we did not use any parameter to calculate a necessary or sufficient sample size. A three stage sampling procedure was used. At a first stage, all affiliated colleges were selected that have the regular courses such B.Sc., B.Com. or B.A. At the second stage, only co-ed colleges were opted for a better understanding of the mutual relationships between boys-girls and gender related issues. At third stage, only those colleges were selected that have all three faculties *viz.* Science, Arts and Commerce. It was useful in order to have sufficient size of the population from which sample was selected for the study and to increase the heterogeneity in the sample. Data from 15 colleges was collected by obtaining the necessary ethical permission. Four from each of the South and North Campus because there are more Non-NCR students in the north campus which impact the social credibility of any student in Delhi while 7 colleges were selected lying in Mumbai metropolitan region. Ten students were selected from each of any science departments or course, any arts departments or course and any commerce departments or course i.e. 30 students (10 student's X 3 Courses) in total from each college. So the total sample would be around 450 (30 students * 15 Colleges).

Tool and Scale
Self-Administered questionnaire that includes the information of adolescent background, background and lifestyle of parents, siblings, friends, parenting style, anthropometric measures, illness and psychological wellbeing, was developed by the researcher by utilizing various trusted source of information such as NFHS, Youth in India Study, and others. The mental health of adolescents was assessed through a 12-item scale General Health Questionnaire (GHQ-12) which is validated in Indian study and reliable tool to understand the psychological wellbeing. It has three subscales Anxiety & Depression, Social Dysfunction and Loss of Confidence. The Study utilized these sub scales for further analysis.

Ethical issue
All the necessary ethical approval was taken from institute ethical committee (SREC).
The respondent was informed about the purpose of the study, further, informed consent from the respondents was taken before interview.

Data collection and Analysis
The primary data was collected during July 10, 2018 to November 15, 2018 from adolescents aged 15-19 years studying in the colleges of Delhi and Mumbai Universities. Various colleges were approached for this study however only 15 colleges given the necessary permission to get the data from adolescents. The College administration guided the researcher to handover the self-administered questionnaire to group of students in the classes. Then, the data of the students with background of working parents with 1 year in workforce was extracted. Following the criteria, the total of 447 adolescent found to be completed the questionnaire Univariate,

Bivariate, and Multivariate statistical methods are used to assess the mental health of the adolescent and the related factors.

Mental Health Disorder
Mental Health disorder had been calculated using the method provided in earlier study where presence of three or more symptoms of the GHQ considered being the metal health disorder.

Results
The overall sample comprises of 209 and 238 adolescents from Mumbai and Delhi, respectively. Around 69 percent (n=307)of the youngsters are in the late teen (18-19 years), while the other 31 percent (n=140) are from middle adolescent ages (16-17 years). The study found that around one in three adolescents have shown symptoms of mental health disorder (Fig 1).
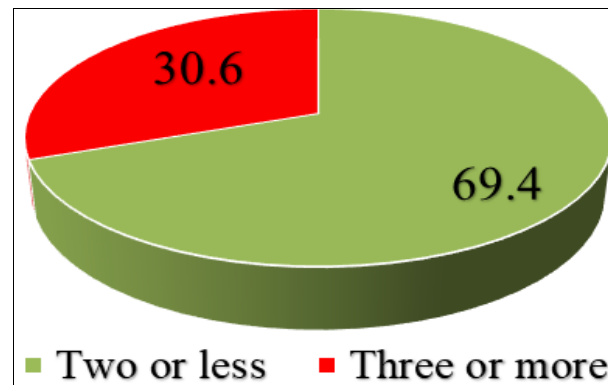

Fig 1: Symptoms of Mental Health

The mental health disorder among the adolescents suggest that 22 percent in Mumbai and 27 percent in Delhi are suffering from Anxiety and Depression while almost one-fourth have Social Dysfunction in both the cities. On the other hand only 18 percent feel like they lost the confidence. There is significant difference between the Anxiety and Depression among adolescent in two cities (Table1).

Table 2 depicts the symptoms of Anxiety and Depression by background characteristics. There is a significant difference between the two sexes (Mumbai- 31.7% in Boy and 12.5% in Girls; Delhi-39% in Male & 15% in female) and Education stream (Mumbai-24% in Science, 13% in Arts and 29% in Commerce; Delhi-38% in Science, 17% in Arts and 26% in Commerce) in both cities while middle teens show a significant difference in symptoms in Mumbai comparing other teens. SC/ST caste student (35%) in Mumbai while OBC caste based student in Delhi (39%) have more anxiety and depression symptoms. There is no significant difference in Anxiety and Depression considering the number of siblings and members in the family.

In the study, it is found that one third adolescent from science stream are social dysfunction while adolescent from commerce stream, the social dysfunction is just half (16%) of science stream in Mumbai. In Delhi, social dysfunction is found about 44 percent of adolescent of science stream and 12 percent in Arts stream. Education stream have a significant contribution to social dysfunction in both the cities while sex, caste and number of siblings differential in Mumbai and age factor in Delhi creates the social dysfunction (table 2.2). The study reports that one in four younger age teens (16-17 years) from Mumbai and more than one in three younger age teens (16-17 years) from Delhi had loss of confidence. Religion and caste are other factors that were related to loss of confidence among teens in Mumbai (Table 2.3).

About 40 percent of the adolescents who drinks alcohol show significantly higher symptoms of Anxiety and Depression in both the cities. The symptoms of Social dysfunction are higher among the adolescent who drinks (Mumbai-46.4% & Delhi- 33.3%), smokes or chew tobacco (Mumbai-43% & Delhi-23.5%). Drinking alcohol is only associated with Social Dysfunction in Delhi (table 3).

Anxiety and Depression is higher among the adolescent whose father has schooling below secondary (Mumbai-24.7% Vs Delhi-29%) while mother schooling is higher secondary (Mumbai-31.2% Vs Delhi-32.1%). The study found that mother's working monthly income and working years is significantly associated with the teens anxiety and depression in Mumabi (Table 4.1).

According to the table 4.2 that teens of older mother (>45 years) and father (>45 years) have high symptoms of social dysfunction in Mumbai while father and mother less schooling is other contributing factor depicts the higher social dysfunction among the young students. Symptoms of Loss of confidence is higher among the adolescent whose father had less schooling and mother had not such fixed income (table 4.3).

Table 5 reports the adolescent doesn't have any female friend, the 29 percent and 31 percent is found to had symptoms of anxiety and depression in Mumbai and Delhi respectively. Social dysfunction was associated with the friend schoolig in Mumbai, around 42 percent of the teens had syptoms of social dysfunction whoes friend eduction is graduation. The symptoms of anxiety and depression is less (22%) among the adolescent whose friend help in studies in Delhi. Social dysfunction is higher among those who's all the close friend has maximum

education till secondary and does not chat with the respondent in both the cities. Anxiety and Depression is higher among those whose any friend smokes in both the cities.

The test results shows that Female students are significantly less likely (Mumbai-0.42,CI:0.21-0.82 vs. Delhi-0.29, CI:0.21-0.72) to exhibits mental health disorder in both the cities compared to their counterpart. Teens belong to SC/ST caste have more than 3 times (CI:1.52-8.49) odds of mental health disorder compare to other castes in Mumbai. The odds of psychological wellbeing is less among the adolescents who are studying in Arts (Mumbai-0.24, CI:0.11-0.56 & Delhi-0.13, CI:0.06-0.31) and Commerce field (Mumbai-0.42, CI:0.19-0.92 & Delhi-0.49, CI:0.25-0.97).

The Permissive parents have positive impact over their children. There is a significant negative correlation between the permissiveness and component of mental health. This infers that adolescent of permissive mother or father has less anxiety & depression, Social dysfunction and loss of confidence. The teenagers whose mothers were authoritative or flexible showed the less symptoms of loss of confidence. Even youngsters of Authoritative father exhibit less anxiety and depression (Table 7).

Table 8 is the point bi-serial correlation between the parenting style and components of mental health disorder are showing. All the three components of psychological wellbeing i.e. Anxiety & Depression, Social Dysfunction and Loss of confidence is significantly correlated to each other.

Discussion and conclusion
In this study around 22 percent teen in Mumbai and 27 percent teen in Delhi are suffering from Anxiety and Depression, while almost one-fourth have symptoms of Social Dysfunction. It is found that 18 percent of adolescents show symptoms related to a Lack of Confidence. The prevalence of Anxiety and Depression (AD), Social Dysfunction (SD) and Loss of Confidence (LC) is significantly differing among sexes and education stream. Adolescents with lower socioeconomic status have shown more symptoms of AD and SD similar results were found in a study done on China (Yang, Hu & Li, 2022) [27]. Adolescent mental health is linked with the economic status of the parents (Kieling *et al*., 2011) [9]. The teens who have ever smoked, chewed tobacco, and consumed alcohol have shown significantly higher symptoms of AD and SD. The study found that teens of mothers working in the formal sector and working for more than 20 years exhibit higher anxiety and depression. The results also depict that father less schooling and the mother's monthly income remain the most important factors that are related to all the components of mental health disorder. In a literature it is found that low parental education is associated with high depression score (Córdoba *et al*., 2020) [3]. AD and LC were higher among those teens who spend less than two hours with their father, the father drinks or smokes, and mother consumes alcohol. A number of studies have shown that alcohol consumption negatively affects the mental health of youth (Balogun *et al*., 2014, Rose *et al*., 2014, Ferreira *et al*., 2019) [2, 17, 5]. The findings of previous studies suggest that their parents and peers heavily influence early adolescents' smoking and drinking initiation (Jones & Magee, 2014; Loke, & Mak, 2013, Liao, *et al* 2013; Nakaseko, Kotera, & Nakazawa, 2020) [8, 10, 11, 15].

AD, LC and SD are more prevalent among teenager whose fathers cannot assist them with personal issues, who do not depend on fathers for help, advice, or sympathy, and who cannot rely on either parent for comfort when upset or depressed. Even the symptoms of anxiety & depression and Loss of confidence are lower among those whose at least one sister stay with them, brother is working and at least one sister/brother play with the respondent in both the cities. AD, SD and LC is higher among the adolescent who is not befriended with their sister, even not happy to have her as a friend and chat with her on any social media site. The adolescent who doesn't have any female friend and any of the friends' drinks among close friend exhibits higher symptoms of all components of mental health disorder. The study found that the adolescent of permissive parents exhibit less anxiety and depression, less social dysfunction and less Loss of confidence. This also implies that the adolescent children of permissive parents are socially active, more confident and are less stressed. Illness impacts the mental health of adolescents. It implies they have a great deal of the relationship and strong bonding with their family members.

Several studies in the past also reported mental health issues among adolescents; however, despite the severity and magnitude, there are very few policies and programme that aims to improve adolescent health. Rashtriya Kishor Swasthya Karyakaram (RKSK) recognized the mental health issue as one of the six priorities of the national health strategy. This programme is introduced along with the nutrition and reproductive health activities as part of the National Health Mission. However, RKSK has numerous limitations in addressing the adolescent mental health issues despite being a successful initiative in improving overall health (Hossain and Purohit, 2019) [7]. The basic services for psychiatric issues are provided to the general population under the National and District Mental Health Program, but it also lacks the emphasis required for young people. Stigma about mental health and lack of awareness are barriers to seeking help for the psychological issue. The family, teachers and colleges may play a crucial role in improving psychological wellbeing. Healthy parenting and parent support are associated with better mental health outcomes and reduced help-seeking barriers (Maiuolo, Deane and Ciarrochi, 2019) [12]. Teachers and counsellors can be sensitized and trained to recognize and address adolescent mental health issues. Numerous evidence-based health delivery models, including mental health promotion, yoga and life skills education, have shown significant results in improving the adolescent health and can be strengthened further (Srikala and Kishore, 2010; Hagen and Nayar, 2014) [21, 6].

Contributors

AG Conceptualize, did the survery, analyzed and frame the manuscript. SU Conceptualize and supervise the study. Both authors read and approved the final version of the report.

Conflicts of interest
No conflict of interest.

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Appendixes

Table 1: Mental Health Disorder

Mental Health Disorder	Mumbai (N=209)	Delhi (N=238)	Total (N=447)
	%	%	%
Anxiety and Depression	22	27.3	24.8
Social Dysfunction	24.4	24.8	24.6
Loss of confidence	18.7	18.1	18.3

Table 2: Percentage distribution of the Anxiety and Depression suggestive of mental health disorder experienced by Adolescent of Dual earner family aged 16-19 years in the month preceding the interview by its background characteristics

Background Characteristics		Anxiety and Depression					
		Mumbai (N=209)		Delhi (N=238)		Total (N=447)	
		N	Per.	N	Per.	N	Per.
Age (in years)	16-17	23	25.0	14	29.2	37	26.4
	18-19	23	19.7	51	26.8	74	24.1
Sex of respondent * ^	Male	33	31.7	47	39.2	80	35.7
	Female	13	12.4	18	15.3	31	13.9
Education Stream ^	Science	17	24.3	31	38.8	48	32.0
	Arts	9	12.9	13	16.7	22	14.9
	Comm.	20	29.0	21	26.3	41	27.5
Religion	Hindu	34	21.7	51	26.0	85	24.1
	Others	12	23.1	14	33.3	26	27.7
Caste	Others	27	19.1	43	25.3	70	22.5
	OBC	7	20.6	13	39.4	20	29.9
	SC/ST	12	35.3	9	25.7	21	30.4
Total members	3-4	7	20.6	11	27.5	18	24.3
	5-6	22	20.2	35	26.7	57	23.8
	7+	17	25.8	19	28.4	36	27.1
Total siblings	None	8	17.0	15	25.9	23	21.9
	One	18	25.7	26	29.9	44	28.0
	Two+	20	21.7	24	25.8	44	23.8

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi

Table 3: Percentage distribution of Social Dysfunction suggestive of mental health disorder experienced by Adolescent of Dual earner family aged 16-19 years in the month preceding the interview by its background characteristics

Background Characteristics		Social Dysfunction					
		Mumbai (N=209)		Delhi (N=238)		Total (N=447)	
		N	Per.	N	Per.	N	Per.
Age (in years)	16-17	26	28.3	15	31.3	41	29.3
	18-19	25	21.4	44	23.2	69	22.5
Sex of respondent	Male	31	29.8	35	29.2	66	29.5
	Female	20	19.0	24	20.3	44	19.7
Education Stream * ^	Science	24	34.3	35	43.8	59	39.3
	Arts	16	22.9	9	11.5	25	16.9
	Comm.	11	15.9	15	18.8	26	17.4
Religion	Hindu	37	23.6	48	24.5	85	24.1
	Others	14	26.9	11	26.2	25	26.6
Caste	Others	31	22.0	40	23.5	71	22.8
	OBC	7	20.6	9	27.3	16	23.9
	SC/ST	13	38.2	10	28.6	23	33.3
Total members	3-4	10	29.4	10	25.0	20	27.0
	5-6	26	23.9	31	23.7	57	23.8
	7+	15	22.7	18	26.9	33	24.8
Total siblings	None	16	34.0	17	29.3	33	31.4
	One	15	21.4	18	20.7	33	21.0
	Two+	20	21.7	24	25.8	44	23.8

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi

Table 4: Percentage distribution of Loss of Confidence suggestive of mental health disorder experienced by Adolescent of Dual earner family aged 16-19 years in the month preceding the interview by its background characteristics

Background Characteristics		Loss of confidence					
		Mumbai (N=209)		Delhi (N=238)		Total (N=447)	
		N	Per.	N	Per.	N	Per.
Age (in years) * ^	16-17	23	25.0	17	35.4	40	28.6
	18-19	16	13.7	26	13.7	42	13.7

Sex of respondent	Male	21	20.2	21	17.5	42	18.8
	Female	18	17.1	22	18.6	40	17.9
Education Stream * ^	Science	18	25.7	22	27.5	40	26.7
	Arts	-	-	-	-	-	-
	Comm.	21	30.4	21	26.3	42	28.2
Religion	Hindu	26	16.6	34	17.3	60	17.0
	Others	13	25.0	9	21.4	22	23.4
Caste	Others	25	17.7	29	17.1	54	17.4
	OBC	5	14.7	7	21.2	12	17.9
	SC/ST	9	26.5	7	20.0	16	23.2
Total members	3-4	5	14.7	5	12.5	10	13.5
	5-6	20	18.3	25	19.1	45	18.8
	7+	14	21.2	13	19.4	27	20.3
Total siblings	None	10	21.3	10	17.2	20	19.0
	One	12	17.1	17	19.5	29	18.5
	Two+	17	18.5	16	17.2	33	17.8

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi

Table 5: Percentage distribution of the mental health disorder experienced by Adolescent of Dual earner family aged 16-19 in the month preceding the interview by his/her reported lifestyle behaviour

Lifestyle Behaviour		Anxiety and Depression					
		Mumbai (N=209)		Delhi (N=238)		Total (N=447)	
		N	Per.	N	Per.	N	Per.
Ever Smoke cigarettes or chew tobacco	Yes	6	42.9	7	41.2	13	41.9
	No	40	20.5	58	26.2	98	23.6
Ever Drink alcohol * ^	Yes	11	39.3	18	40.0	29	39.7
	No	35	19.3	47	24.4	82	21.9
Ever had steroids	Yes	2	40.0	2	40.0	4	40.0
	No	44	21.6	63	27.0	107	24.5
		Social Dysfunction					
Ever Smoke cigarettes or chew tobacco	Yes	6	42.9	4	23.5	10	32.3
	No	45	23.1	55	24.9	100	24.0
Ever Drink alcohol *	Yes	13	46.4	15	33.3	28	38.4
	No	38	21.0	44	22.8	82	21.9
Ever had steroids	Yes	2	40.0	1	20.0	3	30.0
	No	49	24.0	58	24.9	107	24.5
		Loss of confidence					
Ever Smoke cigarettes or chew tobacco	Yes	4	28.6	2	11.8	6	19.4
	No	35	17.9	41	18.6	76	18.3
Ever Drink alcohol	Yes	8	28.6	10	22.2	18	24.7
	No	31	17.1	33	17.1	64	17.1
Ever had steroids	Yes	3	60.0	-	-	3	30.0
	No	36	17.6	43	18.5	79	18.1

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi

Table 6: Percentage distribution of Anxiety and Depression suggestive of mental health disorder among Adolescent of Dual earner family aged 16-19 in the month preceding the interview by his/her Parents background characteristics

Parent Characteristics		Anxiety and Depression					
		Mumbai (N=209)		Delhi (N=238)		Total (N=447)	
		N	Per.	N	Per.	N	Per.
Father's Age	<=45 years	17	20.0	25	25.5	42	23.0
	>45 years	29	23.4	40	28.6	69	26.1
Father's Schooling	<=Secondary	24	24.7	29	29.0	53	26.9
	Higher Sec.	10	17.9	14	22.2	24	20.2
	Graduate+	12	21.4	22	29.3	34	26.0
Father's Job Sector	Formal	20	22.0	27	25.7	47	24.0
	Informal	26	22.0	38	28.6	64	25.5
Father's monthly income	<25000	14	19.2	21	30.0	35	24.5
	25000+	17	26.6	18	20.7	35	23.2
	don't know	15	20.8	26	32.1	41	26.8
Father's Working years	<20	12	22.6	17	27.0	29	25.0
	20+	34	21.8	48	27.4	82	24.8
Mother's Age	<=45 years	31	22.0	45	27.1	76	24.8
	>45 years	15	22.1	20	27.8	35	25.0
Mother's Schooling *	<=Secondary	12	18.5	16	22.9	28	20.7
	Higher Sec.	24	31.2	26	32.1	50	31.6
	Graduate+	10	14.9	23	26.4	33	21.4

Mother's Job Sector	Formal	30	24.0	37	31.6	67	27.7
	Informal	16	19.0	28	23.1	44	21.5
Mother's monthly income *	<25000	14	16.9	23	27.7	37	22.3
	25000+	10	15.9	21	21.2	31	19.1
	don't know	22	34.9	21	37.5	43	36.1
Mother's Working years *	<20	26	18.1	38	23.9	64	21.1
	20+	20	30.8	27	34.2	47	32.6

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi

Table 7: Percentage distribution of Social Dysfunction suggestive of mental health disorder among Adolescent of Dual earner family aged 16-19 in the month preceding the interview by his/her Parents background characteristics

Parent Characteristics		Social Dysfunction					
		Mumbai (N=209)		Delhi (N=238)		Total (N=447)	
		N	Per.	N	Per.	N	Per.
Father's Age	<=45 years	15	17.6	29	29.6	44	24.0
	>45 years	36	29.0	30	21.4	66	25.0
Father's Schooling	<=Secondary	26	26.8	30	30.0	56	28.4
	Higher Sec.	12	21.4	12	19.0	24	20.2
	Graduate+	13	23.2	17	22.7	30	22.9
Father's Job Sector	Formal	20	22.0	21	20.0	41	20.9
	Informal	31	26.3	38	28.6	69	27.5
Father's monthly income	<25000	18	24.7	19	27.1	37	25.9
	25000+	17	26.6	19	21.8	36	23.8
	don't know	16	22.2	21	25.9	37	24.2
Father's Working years	<20	15	28.3	15	23.8	30	25.9
	20+	36	23.1	44	25.1	80	24.2
Mother's Age *	<=45 years	28	19.9	40	24.1	68	22.1
	>45 years	23	33.8	19	26.4	42	30.0
Mother's Schooling	<=Secondary	19	29.2	20	28.6	39	28.9
	Higher Sec.	20	26.0	15	18.5	35	22.2
	Graduate+	12	17.9	24	27.6	36	23.4
Mother's Job Sector	Formal	30	24.0	26	22.2	56	23.1
	Informal	21	25.0	33	27.3	54	26.3
Mother's monthly income	<25000	21	25.3	21	25.3	42	25.3
	25000+	18	28.6	22	22.2	40	24.7
	don't know	12	19.0	16	28.6	28	23.5
Mother's Working years	<20	35	24.3	35	22.0	70	23.1
	20+	16	24.6	24	30.4	40	27.8

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi

Table 8: Percentage distribution of Loss of Confidence suggestive of mental health disorder among Adolescent of Dual earner family aged 16-19 in the month preceding the interview by his/her Parents background characteristics

Parent Characteristics		Loss of confidence					
		Mumbai (N=209)		Delhi (N=238)		Total (N=447)	
		N	Per.	N	Per.	N	Per.
Father's Age	<=45 years	15	17.6	21	21.4	36	19.7
	>45 years	24	19.4	22	15.7	46	17.4
Father's Schooling	<=Secondary	21	21.6	21	21.0	42	21.3
	Higher Sec.	9	16.1	10	15.9	19	16.0
	Graduate+	9	16.1	12	16.0	21	16.0
Father's Job Sector	Formal	19	20.9	17	16.2	36	18.4
	Informal	20	16.9	26	19.5	46	18.3
Father's monthly income	<25000	10	13.7	13	18.6	23	16.1
	25000+	17	26.6	11	12.6	28	18.5
	don't know	12	16.7	19	23.5	31	20.3
Father's Working years	<20	9	17.0	11	17.5	20	17.2
	20+	30	19.2	32	18.3	62	18.7
Mother's Age	<=45 years	25	17.7	32	19.3	57	18.6
	>45 years	14	20.6	11	15.3	25	17.9
Mother's Schooling	<=Secondary	14	21.5	13	18.6	27	20.0
	Higher Sec.	18	23.4	15	18.5	33	20.9
	Graduate+	7	10.4	15	17.2	22	14.3
Mother's Job Sector	Formal	23	18.4	23	19.7	46	19.0
	Informal	16	19.0	20	16.5	36	17.6
Mother's monthly income	<25000	13	15.7	14	16.9	27	16.3
	25000+	11	17.5	17	17.2	28	17.3
	don't know	15	23.8	12	21.4	27	22.7

Mother's Working years	<20	24	16.7	30	18.9	54	17.8
	20+	15	23.1	13	16.5	28	19.4

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi

Table 9: Percentage distribution of the reported three or more symptoms and behaviours suggestive of mental health disorder experienced by Adolescent of Dual earner family aged 16-19 in the month preceding the interview by his/her background characteristics and reported behaviour of the close friends

Friend Characteristics		Anxiety and Depression						Social Dysfunction						Loss of confidence					
		Mumbai		Delhi		Total		Mumbai		Delhi		Total		Mumbai		Delhi		Total	
		N	Per.	N	Per.	N	Per.	N	Per.	N	Per.	N	Per.	N	Per.	N	Per.	N	Per.
Total friends	1-2	15	19.5	23	31.1	38	25.2	18	23.4	19	25.7	37	24.5	13	16.9	17	23.0	30	19.9
	3-4	12	23.1	12	22.6	24	22.9	15	28.8	14	26.4	29	27.6	13	25.0	11	20.8	24	22.9
	5+	12	21.4	19	28.4	31	25.2	12	21.4	15	22.4	27	22.0	9	16.1	9	13.4	18	14.6
Have male friend	No	2	8.7	6	26.1	8	17.4	5	21.7	6	26.1	11	23.9	2	8.7	5	21.7	7	15.2
	Yes	44	23.7	59	27.4	103	25.7	46	24.7	53	24.7	99	24.7	37	19.9	38	17.7	75	18.7
Have female friend *A ^S *L	No	21	29.2	33	31.4	54	30.5	22	30.6	32	30.5	54	30.5	18	25.0	23	21.9	41	23.2
	Yes	25	18.2	32	24.1	57	21.1	29	21.2	27	20.3	56	20.7	21	15.3	20	15.0	41	15.2
Friend's Schooling *S	<=Sec.	1	7.7	3	30.0	4	17.4	5	38.5	4	40.0	9	39.1	1	7.7	2	20.0	3	13.0
	Higher Sec.	36	22.9	41	25.8	77	24.4	33	21.0	38	23.9	71	22.5	30	19.1	33	20.8	63	19.9
	Graduate+	7	25.0	13	32.5	20	29.4	12	42.9	9	22.5	21	30.9	7	25.0	4	10.0	11	16.2
Helps in study ^A ^S *S	No	13	26.0	23	39.7	36	33.3	19	38.0	19	32.8	38	35.2	12	24.0	13	22.4	25	23.1
	Yes	31	20.9	34	22.5	65	21.7	31	20.9	32	21.2	63	21.1	26	17.6	26	17.2	52	17.4
Plays with respondent *L	No	10	19.2	16	25.8	26	22.8	15	28.8	13	21.0	28	24.6	5	9.6	8	12.9	13	11.4
	Yes	34	23.3	41	27.9	75	25.6	35	24.0	38	25.9	73	24.9	33	22.6	31	21.1	64	21.8
Friend drinks *A *S	No	34	19.8	48	26.5	82	23.2	40	23.3	45	24.9	85	24.1	31	18.0	36	19.9	67	19.0
	Yes	10	38.5	9	32.1	19	35.2	10	38.5	6	21.4	16	29.6	7	26.9	3	10.7	10	18.5
Friend smokes *A	No	33	19.4	49	26.6	82	23.2	42	24.7	45	24.5	87	24.6	30	17.6	37	20.1	67	18.9
	Yes	11	39.3	8	32.0	19	35.8	8	28.6	6	24.0	14	26.4	8	28.6	2	8.0	10	18.9
At least one friend chew tobacco	No	42	21.5	53	26.5	95	24.1	47	24.1	47	23.5	94	23.8	37	19.0	37	18.5	74	18.7
	Yes	2	66.7	4	44.4	6	50.0	3	100.0	4	44.4	7	58.3	1	33.3	2	22.2	3	25.0

Sec.-Secondary, N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi, A- Anxiety and Depression, S-Social Dysfunction, L-Loss of Confidence

Table 10: Showing the odds (standardized) of having mental health problem by adolescent background characteristics

Background Characteristics		Mumbai	Delhi	Total
Age of respondent (in years)	16-17	1	1	1
	18-19	0.628 (0.323,1.22)	0.555 (0.268,1.149)	0.645*(0.405,1.027)
Sex of respondent	Male	1	1	1
	Female	0.421** (0.216,0.823)	0.388***(0.209,0.717)	0.409***(0.262,0.639)
Religion	Hindu	1	1	1
	Others	0.994 (0.686,1.439)	1.44*(0.973,2.13)	1.154 (0.89,1.496)
Caste	Others	1	1	1
	OBC	0.735 (0.284,1.901)	2.002 (0.868,4.615)	1.249 (0.679,2.299)
	SC/ST	3.586***(1.519,8.468)	1.74 (0.745,4.067)	2.485***(1.376,4.488)
Education Stream	Science	1	1	1
	Arts	0.243***(0.105,0.561)	0.134***(0.057,0.313)	0.198***(0.111,0.353)
	Commerce	0.423** (0.194,0.919)	0.49** (0.248,0.968)	0.503***(0.305,0.83)
Total members	3-4	1	1	1
	5-6	0.833 (0.325,2.136)	0.503 (0.22,1.15)	0.617 (0.335,1.136)
	7+	1.1 (0.411,2.94)	0.55 (0.219,1.381)	0.767 (0.398,1.479)

*p<0.1, **p<0.05,***p<0.01

Table 11: Table showing the mean score and standard deviation of PAQ measures for Adolescent mental health

Parenting style Mean (S.D.)	Anxiety and Depression			
	Mumbai		Delhi	
	No	Yes	No	Yes
Permissive mother	30.73 (5.952)	29.07 (7.31)	31.45 (5.799)	28.86 (7.454)
Authoritarian mother	29.28 (6.111)	30.54 (8.392)	29.98 (6.028)	30.08 (7.983)
Authoritative/ flexible mother	32.99 (6.667)	32 (8.561)	33.11 (6.249)	31.32 (7.465)
Permissive Father	29.13 (6.898)	27.33 (7.469)	29.93 (6.413)	26.52 (7.357)
Authoritarian Father	29.69 (5.729)	30.83 (7.614)	30.38 (5.628)	30.6 (7.008)
Authoritative/flexible Father	31.00 (6.505)	29.04 (7.348)	31.02 (6.175)	28.68 (6.543)
Social Dysfunction				
	Mumbai		Delhi	
	No	Yes	No	Yes
Permissive mother	30.62 (6.385)	29.57 (5.998)	31.23 (6.244)	29.24 (6.616)

Authoritarian mother	29.21 (6.763)	30.63 (6.356)	30.16 (6.453)	29.56 (7.074)
Authoritative/ flexible mother	32.59 (7.436)	33.33 (6.052)	33.02 (6.609)	31.41 (6.623)
Permissive Father	28.95 (7.122)	28.06 (6.842)	29.6 (6.778)	27.17 (6.755)
Authoritarian Father	29.57 (6.294)	31.08 (5.772)	30.64 (5.932)	29.83 (6.300)
Authoritative/ flexible Father	30.3 (6.991)	31.41 (5.835)	30.91 (6.331)	28.78 (6.19)
	Loss of confidence			
	Mumbai		Delhi	
	No	Yes	No	Yes
Permissive mother	30.69 (6.141)	28.92 (6.823)	31.16 (6.077)	28.84 (7.403)
Authoritarian mother	29.71 (6.59)	28.87 (7.101)	30.26 (6.409)	28.86 (7.389)
Authoritative/flexible mother	33.41 (6.934)	30.03 (7.339)	33.29 (6.4)	29.6 (6.918)
Permissive Father	28.91 (7.062)	27.95 (7.03)	29.36 (6.65)	27.37 (7.509)
Authoritarian Father	30.04 (6.217)	29.49 (6.134)	30.67 (5.882)	29.37 (6.59)
Authoritative/flexible Father	31.25 (6.602)	27.62 (6.568)	30.86 (6.245)	28.21 (6.446)

S.D.- Standard Deviation

Table 12: Table showing the point Bi-serial Correlation is calculated between mental health Disorder and PAQ measures for total sample and In Mumbai and Delhi separately.

Parenting Style	Anxiety and Depression	Social Dysfunction	Loss of confidence
Permissive mother	-.147**	-.106*	-.126**
Authoritarian mother	0.041	0.022	-0.067
Authoritative/flexible mother	-0.091	-0.033	-.200**
Permissive Father	-.168**	-.107*	-0.084
Authoritarian Father	0.046	0.019	-0.060
Authoritative/flexible Father	-.145**	-0.041	-.185**
Anxiety and Depression	1	.261**	.423**
Social Dysfunction	.261**	1	.266**
Loss of confidence	.423**	.266**	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

In Mumbai

Parenting style	Anxiety and Depression	Social Dysfunction	Loss of confidence
Permissive mother	-0.110	-0.072	-0.110
Authoritarian mother	0.079	0.091	-0.049
Authoritative/flexible mother	-0.058	0.045	-.185**
Permissive Father	-0.106	-0.054	-0.053
Authoritarian Father	0.076	0.105	-0.035
Authoritative/flexible Father	-0.121	0.071	-.211**
Anxiety and Depression	1	.155*	.427**
Social Dysfunction	.155*	1	.214**
Loss of confidence	.427**	.214**	1

In Delhi

Parenting style	Anxiety and Depression	Social Dysfunction	Loss of confidence
Permissive mother	-.181**	-.135*	-.140*
Authoritarian mother	0.006	-0.039	-0.082
Authoritative/flexible mother	-0.120	-0.105	-.214**
Permissive Father	-.222**	-.154*	-0.112
Authoritarian Father	0.017	-0.058	-0.083
Authoritative/flexible Father	-.165*	-.145*	-.161*
Anxiety and Depression	1	.347**	.423**
Social Dysfunction	.347**	1	.312**
Loss of confidence	.423**	.312**	1

N-Number, Per. Percent, *p-value<0.05 in Mumbai, ^p-value<0.05 in Delhi