Behavioral and emotional problems among school adolescents in Minia district, Minia, Egypt: Epidemiological study

Authors:
Chrestina Monir Fekry, Eman Mohamed Mahfouz, Nashwa Nabil Kamal,
Tarek Ahmed Abd-el Rahman, Ebtesam Esmail Hassan
Corresponding author: Chrestina Monir Fekry
Address: Public health department, Faculty of medicine, Minia University, Egypt

Abstract:

Background: Adolescence is unique stage of human development **between childhood and adulthood**, where they experience rapid physical, cognitive and psychosocial growth with decreased levels of self-control and increased levels of sensitivity exhibited by them. It is an important time for laying the foundations of good health. **Adolescence is a turbulent time charged with conflict and mood swings** which is considered to be the peak age of developing psychological problems. So, screening for emotional and behavioral problems among adolescents became of significant importance as Today's teenagers (adolescents) are unquestionably subject to high expectations and demands with significant increase in anxiety.
The present study aimed at determining the prevalence and pattern of **behavioral** & **mental health problems** and associated sociodemographic factors

Methods: A cross sectional study was conducted on 940 school adolescents aged (12-17) years from six preparatory and secondary schools, Minia district. They were recruited by stratified random sample. Strength and difficulty questionnaire(SDQ) was used to assess mental health

Statistical analysis: Done by using SPSS version 22, Chi-square test and multivariate logistic regression were used

Results: Out of total 940, 23.6% of school adolescents had abnormal total SDQ score. Emotional problems were the most prevalent (26.4%) followed by conduct problems (17.3%), hyperactivity disorders (16.4%), lastly peer relations (12.6%) and prosocial score (4. 7%). Parent education was significantly associated with total difficulty score. Being a female, with low family income and arising within an unstable family being a widow or divorced parent were significant predictors for total difficulty score ($P<0.05$).

Conclusions: Nearly a quarter of the study adolescent were categorized as abnormal in the total difficulty score with a leading emotional problems which is more linked to financial hardships and single parent families. Further epidemiological research is important to detect the population at need for prevention and treatment. School intervention programs to promote mental health are also essential

Key words: Adolescents, mental health, total difficulty score, prevalence

Behavioral and emotional problems among school adolescents in Minia district, Minia, Egypt: Epidemiological study

DOI Number: 10.14704/nq.2022.20.12.NQ77031 **NeuroQuantology 2022; 20(12): 344-356**

eISSN 1303-5150

Introduction

Child and adolescent mental health problems became a global public health priority **(Hamdani et al., 2021)**[1]. Adolescence is an important period of life where rapid changes in behavior pattern occur **(Tayebi et al., 2020)**[2]. The global population of adolescents, which the World Health Organization (WHO) defines as a person between age 10–19, exceeds one billion **(Halli et al., 2021)**[3].

Studies conducted in different parts of the world show that prevalence of behavioral and emotional problems in adolescents ranges from 16.5% to 40.8% **(Panthak et al., 2011)**[4]**.** The Global Burden of Disease (GBD) project reported that mental health and behavioral problems account for 23-24% of Disability-Adjusted Life Years (DALYs) among those aged 10-19 years **(Osman et al.,2019)**[5]**.**

Multiple physical, emotional and social changes, including exposure to poverty, abuse, or violence, can make adolescents vulnerable to mental health problems **(Osman et al., 2019; WHO, 2020)**[5,6]. Lastly, Among the indirect effect of COVID-19 crisis is the increased risk of mental health problems among children and adolescents **(Chanchlani et al.,2020)**[7]**.**

Adolescents' mental health problems include several types of emotional and behavioral problems (EBP) "often called disorders"(EBD). There are those classified as externalizing behavior, and internalizing behavior. Externalizing behavior comprises of aspects such as disruption, aggression along with other 'acting out' forms **(Hallahan, Kauffman & Pullen, 2009)**[8]**.** While internalizing behavior encompasses problems such as anxiety, depression, as well as social withdrawal **(Hallahan, Kauffman & Pullen, 2009)**[8]**.**

Mental ill-being affects adolescents' self-esteem, behavior, school attendance, educational achievement, social cohesion, future health and life chances. This negatively affects the individual future resulting in depression, substance abuse, delinquency, suicides and many other problems **(Pathak et al., 2011)**[4]**.**

Adolescent mental –health problems often go unnoticed. Therefore, "screening" tools can aid early detection of these problems to facilitate early intervention and access to effective treatments **(Merikangas et al., 2010; Khishigsuren and Salik, 2006)** [9,10]**.**

Although there are several articles in Egypt focusing on single disorders such as depression or eating disorders, there are still not sufficient data on sub threshold disorders in adolescents **(Osman et al., 2019)**[5]**.**

The purpose of this study was to identify prevalence, pattern of emotional and behavioral problems among adolescents, in addition to their association with sociodemographic variables.

eISSN 1303-5150

Methods

Study design and population

This cross sectional school based descriptive study was conducted on students of age group 12-17 years of six randomly selected general public schools in both urban and rural areas (4 urban . 2 rural schools) of Minia district. Data were collected three days weekly during academic year 2021/ 2022 from 9 October 2021 to 30 march 2022.

Sample size was calculated using online EPI tools software, at (95%) confidence interval, expected prevalence of (10%) (**Valverda et al., 2012)**[11]**.**

and overall population size (75767). Calculated sample size was (855) which was enhanced to (940) to cover expected (10%) non-response.

Sampling technique

Multistage stratified random sample was applied to choose students. The first stage of the study involved listing number of preparatory and secondary schools in Minia district then classified into (urban and rural schools, then preparatory and secondary, further classified into boys and girls schools). Random selection of schools was done from each stratum. In the next stage classes were randomly sampled from each of selected schools, randomly recruiting students until the required sample size was be achieved. The sample size from each school was proportionate to the number of students in each school. Finally, (940) students were included in the study.

Data was collected from students during their school –day at time of free classes. After explanation, self-administered questionnaires were administrated to students. Students were aided and supervised at time of questionnaire filling.

Study tool

One tool was used to collect the data which consisted of two parts:

(1) Questionnaire for socio demographic factors: included:

age, gender, income, residence, type of employment and educational attainment of both parents in addition to parents marital status

(2) Standardized strength and difficulties questionnaire (SDQ) was utilized for the purpose of mental health screening.

Youth Self-report version of SDQ is suitable to be completed by (11–17) years old adolescents. It is a brief standardized tool for emotional, behavioral problems screening and prosocial behaviors assessing. Arabic version has been previously validated (**Alyahri and Goodman, 2006**)[12]. In developing countries, it was used with good validity indices **(Bele et al., 2013; Bhola et al., 2016)**[13,14]**.**

SDQ asks about 25 attributes some positive and others negative. Questions based up on the individuals behavior over the last six months.

The (25) items are divided between (5) subscales:

1) Emotional symptoms (5 items)
2) Conduct problems (5 items)
3) hyperactivity/inattention (5 items)
4) Peer relationship problems (5 items)
5) Prosaically behavior (5 items)

eISSN 1303-5150

Scoring system:

It is scored using a 3 points Likert scale with the following scores; (0) = not true, (1) = somewhat true and (2) = certainly true. The scoring was reversed for five positive items (0) =certainly true, (2) = not true. Five reversed items were questions: (7, 21, 25, 11, 14).

Each of the subscales is given a score then summed to get a total difficulties score, except the prosocial score which is assigned a separate score. The prosocial score was not incorporated into the total difficulties score

Table (1) Cut – points for SDQ scores interpretation (**Goodman ,2016)**[15]

	Normal	**Borderline**	**Abnormal**
Total difficulties score	0-15	16-19	20-40
Emotional problems score	0-5	6	7-10
Conduct problems score	0-3	4	5-10
Hyperactivity score	0-5	6	7-10
Peer problems score	0-3	4-5	6-10
Prosocial score	6-10	5	0-4

Statistical analysis

Data entry and statistical analysis were done using SPSS version 22 Data was presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, while means and standard deviations for quantitative variables. Chi-square test was used to compare qualitative categorical variables. Multivariable binary logistic regression analysis was used to determine significant predictors and show combined effect of different independent variables on SDQ. Statistical significance was considered at p-value **<0.05**.

Ethical consideration

The study followed common ethical principles for scientific research. Research proposal was approved by ethical committee of faculty of medicine,
Minia University "approval number 368: 1/2020". Prior to data collection, verbal consents were obtained from students after explaining the nature and
purpose of study. Headmaster approval was considered as guardian "'proxy" approval. Students were assured that all information gained from study was to be treated as confidential and private

Results

The study was conducted among (940) preparatory and secondary schools' students.

eISSN 1303-5150

Table (2) Socio-demographics and family characteristics of students(n=940)

Personal characteristics	Subtype	Value Frequency Total N= 940	Percentage (%) (%100)
Age (years)	12-14	385	41%
	15-17	555	59%
	Mean ±SD	14.7 ± 1.4	
	Range	(12-17)	
Sex	Male	438	46.6 %
	Female	502	53.4%
Residence	Rural	398	42.3%
	Urban	542	57.7%
Father education	Illiterate/primary	38	4%
	Preparatory/Secondary	418	44.5%
	University or higher	484	51.5%
Mother education	Illiterate/primary	84	8.9%
	Preparatory/Secondary	399	42.4%
	University or higher	457	48.6%
Mother work	Housewife	541	57.6%
	Working	399	42.4%
Current parents marital status	Divorced/ widow	66	7%
	Married	874	93%
Income	Insufficient	43	4.6%
	Sufficient	749	79.7%
	Saving	148	15.7%

Table (2) demonstrated that mean age of study group was (14.7 ± 1.4) years, ranged from (12-17) years. About (46%) of the study students were males Vs. (%53.4) of them were females. Regards residence, (42.3%) of students lived in rural areas while (57.7%) were of urban origin. (51.5%) of students fathers got university level or higher education. In relation to mother education (48.6%) of their mothers got university or high level education. Percentage of having divorced or widow parents were (7%) among study sample. More than half of students mothers (57.6%) were housewives.

eISSN 1303-5150

Table (3) Prevalence and pattern of emotional and behavioral problems among adolescents (n=940)

Categories	Normal (%)	Borderline(%)	Abnormal(%)	Mean ±SD	Range
Total difficulty score	512 (54.5 %)	206 (21.9%)	222 (23.6%)	15.1± 6	(0-33)
Internalizing problems					
Emotional problems	567 (60.3%)	125 (13.3%)	248 (26.4%)	4.74 ± 2.6	(0-10)
Peer problems	551 (58.6%)	271 (28.8%)	118 (12.6%)	3.24 ± 1.8	(0-10)
Externalizing problems					
Conduct problems	622 (66.2%)	155 (16.5%)	163 (17.3%)	2.92 ± 1.7	(0-9)
Hyperactivity problems	676 (71.9%)	110 (11.7%)	154 (16.4%)	4.17 ± 2.2	(0-10)
Pro-social problems	836 (88.9%)	60 (6.4%)	44 (4.7%)	7.8 ± 1.8	(1-10)

Table (3) illustrated. The highest rate of recorded abnormal scores were emotional (26.4%)score followed by abnormal conduct score (17.3%) then hyperactivity problems. Concerning total difficulty score: (54.4%) of students had normal score, (21.9%) were borderline and (23.6%) were abnormal.

Table (4) showed that emotional difficulties and total difficulties score were significantly higher among adolescents aged (15-17) years than (12-14). Emotional difficulties and total difficulties score were also significantly higher among females compared to males. Concerning residence, conduct, hyperactivity problems and total difficulties score were significantly higher among urban adolescents compared to rural students. Parents education had significant impact on total difficulty score. Students whose parents had only preparatory or secondary education showed highest prevalence of emotional problems and total difficulties score. Prevalence of emotional, peer problems and total difficulty score were higher in students having divorced or widow parents (39.4%, 25.8%,36.4%), the difference was statistically significant (P=0.008, 0.001,0.03). Prevalence of conduct problems and total difficulty score was significantly higher among students with insufficient family income.

eISSN 1303-5150

Table (4) Distribution of students with emotional and behavioral problems according to

Personal characteristics	Abnormal Emotional 248	Abnormal Conduct 163	Abnormal Hyperactivity 154	Abnormal Peer problems 118	Abnormal Prosocial behavior 44	Total difficulties score
Age (years)						
12-14 (385)	85 (22.1%)	63 (16.4%)	49 (12.7%)	47(12.2%)	19 (4.9%)	67 (17.4%)
15-17 (555)	163(29.4%)	100(18%)	105(18.9%)	71(12.8%)	25 (4.5%)	155 (27.9%)
P value	**0.04***	**0.79**	**0.001***	**0.76**	**0.88**	**0.001***
Sex						
Male (438)	48 (11%)	70 (16%)	51 (11.6%)	57 (13%)	23 (5.3%)	58 (13.3 %)
Female (502)	200 (39.8%)	93 (18.5%)	103(20.5%)	61 (12.2%)	21 (4.2%)	164 (32.7%)
P value	**0.001***	**0.57**	**0.001***	**0.06**	**0.62**	**0.001***
Residence						
Rural (398)	90 (22.6%)	51 (12.8%)	50 (12.6%)	55(13.8%)	16 (4%)	75 (18.8%)
Urban (542)	158 (29.2%)	112(20.7%)	104(19.2%)	63 (11.6%)	28 (5.2%)	147 (27.1)
P value	**0.07**	**0.007***	**0.02***	**0.58**	**0.71**	**0.013***
Father education						
Illiterate/primary (38)	6 (15.8%)	6 (15.8%)	4 (10.5%)	6(15.8%)	4 (10.5%)	6 (15.8%)
Preparatory / Secondary (418)	134 (32.1%)	72 (17.2%)	71 (17%)	61(14.6%)	14 (3.3%)	107 (25.6%)
University or higher (484)	108 (22.3%)	85 (17.6%)	79 (16.3%)	51(10.5%)	26(5.4%)	109 (22.5%)
P value	**0.001***	**0.39**	**0.20**	**0.09**	**0.12**	**0.004***
Mother education						
Illiterate/primary	21 (25%)	11 (13.1%)	13(15.5%)	11(13.1%)	5 (6%)	17 (20.2%)
Preparatory/secondary	125(31.3%)	68 (17%)	75 (18.8%)	50 (12.5%)	13(3.3%)	98 (24.6%)
University or higher	102(22.3%)	84(18.4%)	66(14.4%)	57(12.5%)	26(5.7%)	107(23.4%)
P value	**0.001***	**0.09**	**0.37**	**0.5**	**0.39**	**0.001***
Mother work						
Housewife (541)	146 (27%)	87 (16.1%)	88 (16.3%)	68 (12.6%)	21 (3.9%)	125(23.1%)
Working (399)	102 (25.6%)	76 (19%)	66 (16.5%)	50 (12.5%)	23 (5.8%)	97 (24.3%)
P value	**0.06**	**0.45**	**0.99**	**0.99**	**0.15**	**0.4**

sociodemographic and family characteristics (n=940)

eISSN 1303-5150

Current marital status						
Divorced/ widow (66)	26 (39.4%)	15 (22.7%)	16 (24.2%)	17 (25.8%)	4 (6.1%)	24 (36.4%)
Married (874)	222(25.4%)	148(16.9%)	138 (15.8%)	101 (11.6%)	40 (4.6%)	198(22.7%)
P value	**0.008***	**0.36**	**0.19**	**0.001***	**0.72**	**0.03***
Income						
Insufficient (43)	15 (34.9%)	10 (23.3%)	10 (23.3%)	8 (18.6%)	2 (4.7%)	13 (30.2%)
Sufficient (749)	197 (26.3%)	125(16.7%)	124 (16.6%)	97 (13%)	36 (4.8%)	180
Saving (148)	36 (24.3%)	28 (18.9%)	20 (13.5%)	13 (8.8%)	6 (4.1%)	(24.1%)
P value	**0.35**	**0.02***	**0.17**	**0.48**	**0.58**	29 (19.6%)
						0.02*

Table (5) Significant predictors of abnormal total difficulties score among students using multivariable binary logistic regression (n=940)

Variable	Category	Odds ratio (CI%)	P value
Age		1.32 (1.18 -1.49)	**0.001***
Gender	Female	3.36 (2.37-4.76)	**0.001***
	Male	Ref	
Residence	Urban	1.4 (0.97-2.1)	**0.07**
	Rural	Ref	
Father education	Illiterate/primary	0.88 (0.3-2.58)	**0.82**
	Preparatory/Secondary	1.3 (0.85-1.9)	**0.22**
	University or higher	Ref	
Mother education	Illiterate/primary	0.46 (0.21-0.99)	**0.05**
	Preparatory/Secondary	0.85 (0.55 -1.3)	**0.46**
	University or higher	Ref	
Income	Insufficient	2.57(1.1-6.14)	**0.03***
	Sufficient	1.19 (0.75-1.9)	**0.46**
	Saving	Ref	
Current parent marital status	Widow / divorced	1.85 (1.1-3.3)	**0.035***
	Married	Ref	

Regarding table (5), all variables showed significant association in univariate analysis with abnormal difficulties score (P<0.05), were included in multivariable model (logistic regression). Significant predictors for abnormal total difficulties score were: (age, gender, insufficient family income, having widow or divorced parents).

Concerning gender, females had (3.36) odds to have abnormal total difficulties score more than males. Students who had widow or divorced parent have 1.85 odds to have abnormal total difficulties score (CI "1.1-3.3"), P=0.035. Having low family income contributed to total difficulties behavioral problems (OR 2.57(1.1-6.14)"), P= 0. 03.

eISSN 1303-5150

Discussion

Emotional and behavioral problems (EBPs) among adolescents are serious public health issue needed to be addressed as part of basic development goals. **(Paus et al., 2008)[16].** The current cross sectional study revealed that (23.6%) of students had abnormal total SDQ score. As regards previous international studies, wide variation of EBPs was reported, however current results are still close and concordance with many researches.

Among Australian adolescents, percentage was between 16.5% and 24.13% **(Philipp et al., 2018; Gujar and Ali, 2019; Lisi et al., 2020)[17,18.19].** School based studies on Indian children/adolescents prevalence is reported between 6.33 to 43**% (Malhotra et al., 2009; Cholakottil et al.,2017)[20,21]**. In Mongolia, the SDQs identified that two-thirds of the questioned children and adolescents have psychiatric disorders (**Vanchindorj et al.,2017)[22].** In Saudi Arabia, a study revealed prevalence of 48% **(Al-Sughayr ,2012)[23].** Total prevalence in different countries was Brazil (18.7%) **(Cury and Golfeto, 2003)[24],** Gaza strip (14.2%) **(Thabet et al., 2000)[25],** Iran (24.4%) **(Dodangi N et al.,2014)[26]** and Bangladesh (22%) **(Hossain,2013)[27]** and Pakistan (35%) **(Syed EU, Hussein SA ,2009)[28].**

Regarding Egyptian studies, across sectional study conducted among secondary schools' adolescent students in Benisuef reported that 18.5% (less than one fifth) of students had behavioral problems **(Mowafy et al., 2015)[29].** Percentage of emotional and behavioral problems in Assuit district was 44.5%**(Osman et al, 2019)[5].**

The variation between different countries could be due to differences in geographical distribution, sample characteristics, and methodological approach. Different sociodemographic and cultural factors can also be a cause.

Concerning pattern of emotional and behavioral problems in this study, the highest percent of abnormal scores were for emotional (26.4%)followed by conduct problems (17.3%), then hyperactivity problems (16.4%), lastly peer relations (12.6%) and prosocial were lowest problems (4.7%). This pattern was in concordance with results of **Mowafy et al., 2015 [29]where** percentages of emotional, conduct, hyperactivity, peer and prosocial problems were: (19.1%, 14.3% ,13.4%, 7.6%, 5%) respectively.

It was also similar to those reported in Brazil (**Cury and Golfeto,2003**)[24], Gaza **(Thabet et al.,2000**)[25], Siberia**(Slobodskaya,2007)[30]**. However, this was different from similar studies from Egypt, India and Iran which found that conduct problems were the most common **(Elhamid et al.,2009[31]; Arman et al.,2012[32]; Mohammadi et al.,2008[33]).**

A higher prevalence of **emotional** problems was noticed in current study (26.4%) compared to higher prevalence of behavioral problems (hyperactivity and conduct scale) in other studies used teacher and parent forms of SDQ questionnaire. This can be explained as parents are more likely not aware of adolescent's emotional condition and students may be unconcerned. But when self-report is used, their emotional problems are not underestimated. Higher emotional problems may also be related to stress from family, school or study.

Regarding association between age and total difficulty score, the present study revealed that students aged (15-17) years were at significant higher risk of abnormal

eISSN 1303-5150

total difficulty score than younger students. This agrees with similar studies from Bangladesh **(Hossain, 2013)**[27] and Egypt **(Mowafy et al.,2015)**[29]**.**

This can be inferred that increasing academic pressure is more evident during secondary school stage. Older students have difficulties in adjustment with their families, peers and teachers or difficulties in adjustment with rapid transition of their lives.

Consistent with this literature finding that total difficulties score was higher among females students, likewise our findings **Pandia et al., 2021** [30]

Rise in prevalence of behavioral and emotional problems among girls, can be explained that they have puberty an average of 2 years before boys hence they have more years of adjustment to somatic problems **(Pathak et al., 2011)**[4]. In addition, girls are more emotionally labile than boys and they are easily influenced by all surrounding stresses

In comparing prevalence of adolescent mental health problems in rural versus urban communities, it was found that students of urban residence had statistically significant higher SDQ than those of rural areas. This matched with (**Osman et al., 2019**; **Pandia et al., 2021)**[5,30] findings.

Urban and semi-urban or rural areas have different characteristics. Urban areas have higher populations, which can increase stress among residents, which in turn can manifest in adolescents as strong emotional reactions. less urban areas have lower population densities and residents are less emotional, which creates more peaceful environments **(Pandia et al., 2021)**[30]**.**

Likewise, current study findings, previous studies have found that total difficulty score was significantly higher among students with separated parents or dead parent compared to students with two-parent families **(Mowafy et al., 2015;)**[29]**. (Panthak et al., 2011)**[4] pointed that a loving family with marital harmony protects against mental ill illness. living with single parents had a greater risk of having psychosocial dysfunction.

As regards the socioeconomic level, this study showed that abnormal total difficulty score was significantly higher among students with insufficient family income. This finding is also consistent with other studies (**Pastor et al.2012; Choi et al., 2019)**[34,35]**.**

In the present study, both father and mother education level affected the risk of students emotional and behavioral problems. Highest prevalence of abnormal SDQ score was among students with fathers or mothers having only preparatory or secondary education. This was in consistent with other studies conducted by **Abd Elhamid et.,2009; Osman et al.,2019; and Bista et al., 2016** [31,5,36]**.** This effect can be attributed to proper counselling that is provided by highly educated parents to their children **(Bista et al.,2016)**[36]**.** Also high parent education has impact on the lifestyle of child development and the ability to provide a healthier environment at home which, therefore, affect the child mental health **(Carneiro et al.,2013)**[37]**.**

Conclusion

The present study concluded that screening for preparatory and secondary school students in Minia district revealed relatively high prevalence (23.6%) of emotional and behavioral problems. The highest rate of recorded abnormal scores were emotional score followed by abnormal conduct score. The mental health problems were found

eISSN 1303-5150

significantly more in increasing age, female students, insufficient family income plus having widow or divorced parents.

Recommendations

Further epidemiological research is important to detect the population at need for prevention and treatment. Early intervention by psychiatrist of adolescents who had got abnormal total difficulty score for early detection and proper treatment. Life skill education should be integrated in schools across curriculum to develop psychological competence.

Limitations and cumbersomes

The data were based on the self-report only; clinical indices could not be used to confirm this self-report measure, so it was source of self-reporting bias. Plus. The study was done on general governmental schools not private or technical schools.

Funding: No funding sources

Conflict of interest: None declared

References

1- **Hamdani SU, Huma ZE, Suleman N, Warraitch A, Muzzafar N, Farzeen M, Minhas FA, Rahman A and Wissow LS (2021)**. Scaling-up school mental health services in low resource public schools of rural Pakistan: The Theory of Change (ToC) approach. ***International journal of mental health systems*, *15*(1*), pp.1-10.***

2- **Tayebi N, Yektatalab S and Akbarzadeh M. (2020).** Emotional and behavioral problems of 9–18-year-old girls and its relationship to menarche age. ***Middle East Current Psychiatry, 27(1), pp.1-7.***

3- **Halli P, Khandeparkar P, Kanougiya S, and Pereira B. (2021).** An exploratory study of the prevalence of mental health symptoms among girls living in 5 childcare institutions in Goa and Mumbai. ***Clinical epidemiology and global health, 9, pp.179-183.***

4 -**Pathak R, Sharma RC, Parvan UC, Gupta BP, Ojha RK and Goel NK. (2011).** Behavioral and emotional problems in school going adolescents. ***The Australasian medical journal, 4(1), p.15.***

5- **Osman S, Khalaf S, Omar M, Ismail T. (2019).** Behavioral and emotional problems among adolescent students. ***J High Inst Public Health.;49(2):82-89.***

6-**WHO fact sheet, (2020)** retrieved at https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health

7-**Chanchlani N, Buchanan F, Gill PJ. (2020).** Addressing the indirect effects of COVID-19 on the health of children and young people. ***Can Med Assoc J.;192(32): E921-7. doi:10.1503/cmaj.201008.***

8- **Hallahan, D. P., Kauffman, J. M., & Pullen, P.C. (2009).** Exceptional Learners: Introduction to special education (11th ed). ***Boston, MA: Merrill. Behavioral Disorders, 32(2), 64-77***

9-**Merikangas KR, He JP, Burstein M, Swanson SA, Avenevoli S, Cui L, et al. (2010).** Lifetime prevalence of mental disorders in U.S. adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). ***J Am Acad Child Adolesc Psychiatry; 49:980–989.***

10-**Khishigsuren Z, Salik G. (2006).** WHO-AIMS report on Mental Health System in Mongolia. Ulaanbaatar, Mongolia: ***Interpress; p 6-23.***

11-**Valverde BSCL, Vitalle MSDS, Sampaio IDPC and Schoen TH**. **(2012).** Survey of behavioral/emotional problems in an adolescent outpatient service. ***Paidéia (Ribeirão Preto), 22, pp.315-323.***

eISSN 1303-5150

12-**Alyahri A and Goodman R. (2006).** Validation of the Arabic strengths and difficulties questionnaire and the development and well-being assessment. ***EMHJ-Eastern Mediterranean Health Journal, 12 (Supp. 2), S138-S146, 2006.***

13- **Bele SD, Bodhare TN, Valsangkar S, Saraf A. (2013).** An epidemiological study of emotional and behavioral disorders among children in an urban slum. ***Psychol Health Med, 18 (2) p. 233.***

14- **Bhola P, Sathyanarayanan V, Rekha D P, Daniel S, Thomas T. (2016).** Assessment of self-reported emotional and behavioral difficulties among pre-university college students in Bangalore, India. ***Indian J Community Med, 41 (2).***

15-**Goodman, R. (2016).**"Scoring the strengths & difficulties questionnaire." (2016). Accessed 18 / 9 / 2021 https://www.ehcap.co.uk/content/sites/ehcap/uploads/NewsDocuments/236/SDQEnglishUK4-17scoring-1.PDF

16-**Paus T, Keshavan M, Giedd JN. (2008).** Why do many psychiatriciatric disorders merge in adolescence? ***Nature Rev Neurosci; 9:947-57.***

17-**Philipp J, Zeiler M, Waldherr K, Truttmann S, Dur W, Karwautz AFK, Wagner G. (2018).** Prevalence of emotional and behavioral problems and subthreshold psychiatric disorders in Austrian adolescents and the need for prevention. ***Soc. Psychtr. Psychtr. Epidemiol. 53, 1325–1337.***

18-**Gujar NM, Ali A. (2019).** Effects of psychological capital and self-esteem on emotional and behavioral problems among adolescents. J***. Mental Health Hum. Behav. 24, 85–90.***

19-**LisiG, Rossi R, Ribolsi M, Di Lorenzo G, Parisi C, Siracusano M, Morciano L, De Stefano A, Pesaresi A, Niolu C, Palombi L, Siracusano A, (2020)**. 'Too many BeEPs in our teens!' Behavioral and emotional problems in a large group of Italian adolescents. ***Psychol. Med. 1–10***

20-**Cholakottil A, Kazhungil F, Koyamu AM (2017).** Prevalence and Pattern of Psychiatric Disorders in School Going Adolescents. ***Int J Indian Psychol. 2017;4(3):124-8.***

21-**Malhotra S, Kohli A, Kapoor M, Pradhan B. (2009).** Incidence of childhood psychiatric disorders in India. ***Indian J Psychiatry. 2009; 51:101-7***

22-**Vanchindorj B, Bayartsogt B, Yerlan G, Narm A, Naidansuren T, Batdelger S, Oidovnyam B, Ochir C. and Lkhagvasuren N. (2017).** Prevalence of Emotional And Behavioral Problems Among Adolescence And Some Risk Factors In Mongolia. ***Asean Journal of Psychiatry, 18(2), pp.1-14.***

23-**Al-Sughayr AM, Ferwana MS. (2012).** Prevalence of mental disorders among high school students in National Guard Housing, Riyadh, Saudi Arabia. ***Journal of Family and Community Medicine. 2012;19(1):47-5.***

24-**Cury CR, Golfeto JH. (2003).** Strengths and difficulties questionnaire (SDQ): a study of school children in Ribeirão Preto. ***Rev Bras Psiquiatr. 2003;25(3):139-45.***

25-**Thabet AA, Stretch D, Vostanis P. (2000).** Child mental health problems in Arab children: application of the strengths and difficulties questionnaire. ***Int J Soc Psychiatry. 2000;46(4):266-80.***

26-**Dodangi N, Ashtiani NH, Valadbeigi B. (2014).** Prevalence of DSM-IV TR Psychiatric Disorders in Children and Adolescents of Paveh, a Western City of Iran. ***Iranian Red Crescent Med J. 2014;16(7): e16743***

27- **Hossain S. (2013).** A study of determining the relationship between academic achievement and problem

behavior of urban secondary school students in Bangladesh. ***The International Journal of Social Science, 8(1), pp.1-10.***

28- **Syed EU, Hussein SA. (2009).** Prevalence of emotional and behavioral problems among primary school children in Karachi, Pakistan —multi informant survey. ***Indian J Pediatr. 2009;76(6):623-7.***

29-**Mowafy M, Ahmed D, Halawa E, Emad El Din M. (2015).** Prevalence and predictors of emotional and behavioral problems among rural school Egyptian adolescents. ***The Egyptian Journal of Community Medicine;33(1):79–93.***

30-**Slobodskaya HR. (2007).** The associations among the Big Five, behavioral Inhibition and behavioral Approach systems and child and adolescent adjustment in Russia. ***Personality Individual Differences.;43(4):913-24.***

31-**Elhamid AA, Howe A. (2009).** Reading R. Prevalence of emotional and behavioural problems among 6–12-year-old children in Egypt. ***Soc Psychiatry Psychiatr Epidemiol.;44(1):8-14.***

32- **Arman S, Keypour M, Maracy M, Attari A (2012).** Epidemiological study of youth mental health using Strengths and Difficulties Questionnaire (SDQ). ***Iranian Red Crescent Med J;14(6):371.***

33- **Mohammadi MR, Alavi A, Mahmoodi J, Shahrivar Z, Tehranidoost M, Saadat S.(2008).** Prevalence of psychiatric disorders amongst adolescents in Tehran. ***Iranian J Psychiatry. 2008;3(3):100-4.***

34-**Pastor P N, Reuben CA, Duran CR.(2012).** Identifying emotional and behavioral problems in children aged 4-17 years: United States, 2001-2007. ***National Health Statistics Reports;(48):1-17.***

35-**Choi, J. K., Wang, D., and Jackson, A. (2019).** Adverse experiences in early childhood and their longitudinal impact on later behavioral problems of children living in poverty. ***Child Abuse Neglect 98, 1–10.***

36- **Bista B., Thapa P., Sapkota D., Singh SB and Pokharel PK .(2016).** Psychosocial problems among adolescent students: an exploratory study in the central region of Nepal. ***Frontiers in public health, 4, p.158.***

37- **Carneiro P, Meghir C, Parey M.(2013).** Maternal Education, Home Environments, and the Development of Children and Adolescents. ***Journal of the European Economic Association. 2013;11(suppl_1):123-60.***