Section: Obstetrics & Gynaecology

Original Research Article

PREVALENCE OF DEPRESSION, ANXIETY, AND STRESS USING HINDI DASS-21 AMONG ADOLESCENT FEMALES WITH GYNECOLOGICAL ISSUES: A CROSS- SECTIONAL STUDY

Richa Sharma[1], Rajat Mohanty[2], Rajeshwari Kumari[3], Sudipta Patnaik[4]

[1]Director Professor, Department of Obstetrics & Gynaecology, UCMS & GTB Hospital, Delhi, India.
[2]Blue Wheel Hospital, Bhubaneswar, Odisha, India.
[3]Assistant Professor, Department of Obstetrics & Gynaecology, UCMS & GTB Hospital, Delhi, India.
[4]Associated Professor, SCB Medical College, Cuttack, Odisha, India.

Received : 04/10/2025
Received in revised form : 18/11/2025
Accepted : 06/12/2025

Keywords:
Adolescent girls health, Gynecologist, Depression, Anxiety, menstrual irregularities.

Corresponding Author:
Dr. Rajeshwari Kumari,
Email: gautam.rajeshwari@gmail.com

DOI: 10.47009/jamp.2025.7.6.135

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2025; 7 (6); 732-736

ABSTRACT

Background: Mental health disorders are becoming more common in adolescents and mental health affects their Hypothalamus pituitary ovarian axis, causing some menstrual or ovulatory dysfunction, and vice versa. The physiological changes that occur at this age are sometimes not acceptable by many girls and they hide their problems with family and friends. **Aim**: To categorise the adolescent girls presenting with gynecological complaints into various grades of depression, anxiety, and stress disorders using DASS -21 (Hindi version). **Materials and Methods:** A cross-sectional study was conducted in the Gynecological Outpatient Department (GOPD) at University College of Medical Sciences and Guru Teg Bahadur Hospital (UCMS), Shahdara, Delhi, from March 2023 to February 2024. The study included 172 Adolescent girls (10 -21 yrs) attending GOPD. Their mental health assessment was done using DASS-21 scales (Hindi version) to categorize them into various grades of depression, anxiety, and stress disorders. **Results:** 172 adolescent girls were evaluated by pre structured questionnaire and DASS -21 scale Hindi version. The majority 107(62%) of girls were in the late adolescent (18 to 21 years) group, followed by middle adolescent (14 to 17 years) 42(25%) and early adolescent (10 to 13 years) 23(13%). A total of 69 (40.1%) had discontinued their studies after senior secondary, 51(29.7%) were studying in senior secondary school, 34 (19.8%) in high school, and 18 (10.5%) in primary school. All of them belong to the Delhi NCR region. The majority attended the OPD due to menstrual disturbances 131 (76.2%) and vaginal discharge 17 (9.9%). Out of a total of 172 girls, 46 (40.7%) had stress, 45 (39.8%) had anxiety, and 22 (19.4%) had depression. The majority attended the OPD due to menstrual disturbances 131, 76.2%), vaginal discharge 17, 9.9%), and the remaining 24 with adnexal masses and UTI. Out of a total of 172 girls, 113 (66.7%) had altered mental status. Among the participants, 46 (40.7%) reported experiencing stress, 45 (39.5%) had anxiety, and 22 (19.4%) had symptoms of depression. Of the 131 girls with menstrual disorders, 101 (77%) showed signs of abnormal mental status, including depression in 16%, anxiety in 28.2%, and stress in 32.8%. **Conclusion:** DASS scale is an effective and simple tool to identify mental health status. Separate adolescent clinics consisting of Gynecologist and psychologists together with a friendly environment is the need of an hour so that their gynecological, as well as mental wellbeing can be analyzed and managed simultaneously.

INTRODUCTION

Adolescence is the period between childhood and adulthood, from ages 10years to -19 years, and late adolescence (19-21 years) is usually a time of significant physical, mental & social development. According to WHO 2020, one in six people aged 10-19 years has mental health problems, and these problems are detected in 16 % of adolescents.[1] Girls are prone to mood disorders twice as often as boys in adolescence, and the prevalence at adult levels is 14 -20%. Girls mature, in terms of their emotional

recognition, faster than boys and that sensitivity could make them more vulnerable to depression and anxiety.[2] The unpreventable physiological changes, such as changes in sex hormones, may explain both physical (gynecological complaints) and psychological symptoms during adolescence; the ultimate impact on health and well-being likely depends on complex interactions between biological, psychological, and social factors. These associations are likely to be the result of complex bidirectional mechanisms.[3,4]

As per the National Mental Health Survey 2015-16, conducted by the purview of the Union Ministry of Health and Family Welfare, it was revealed that 9.8 million teenagers in the age group 13-17 years suffer depression and other mental health disorders and are "in need of active intervention".[5] The United Nations Secretary General's Global Strategy for Women's, Children's and Adolescents' Health (2016-2030) set out a bold 'survive, thrive and transform' agenda. Quality of care and humanitarian settings for 'survive', early childhood development and adolescent health for 'thrive' and community engagement and a sustainable environment for 'transform.[6]

The Government of India has several plans to improve the health of the Indian adolescent population namely, Kishori Shakti Yojana, Rajiv Gandhi Scheme for Empowerment of Adolescent Girls, "SABLA", Rastriya Kishor Swasthya Karyakram, Balika Samridhi Yojana, and Adolescent Reproductive Sexual Health Programme (ARSH).[7]

The DASS-21 had good internal reliability (Cronbach's alpha), and its ordinal alpha demonstrated good internal reliability for all its subscales. Regarding the criterion validation, only the DASS-D and EPDS demonstrated a satisfactory ability to discriminate cases from non-cases. Our findings suggest that health practitioners can use DASS-D as an alternative tool in screening depression as it has fewer questions than EPDS, by using the DASS 21 scale, and their levels of depression, anxiety & stress were documented.[8]

The consequences of not addressing adolescent mental health conditions extend to adulthood, impairing both physical and psychological health and limiting opportunities to steer a satisfying life as adults. Therefore, early detection of mental disorders in this age group is crucial because it allows for timely intervention and prevents more severe and long-lasting outcomes.

Present study was conducted to evaluate the Mental health status (level of Anxiety, Depression, and Stress) among adolescent girls attending the Gynecological Out Patient Department.

MATERIALS AND METHODS

A cross-sectional study was conducted in the Gynaecological Out Patient Department (GOPD) at University College of Medical Sciences and Guru Teg Bahadur Hospital (UCMS) Shahdara, Delhi from March 2023- February 2024. No ethical clearance taken from our institute.

Sample Size Determination: The formula used for determining the sample size is as follows: n = z2pqd2, where n = the desired sample size, which would help to measure the different indicators.

z = the standard normal deviation is usually set at 1.96 at a 5% level, which corresponds to a 95% confidence level. The assumed target proportion is p to have particular characteristics and q = 1 − p. Here p-0.5 (assumed 50%). d is the degree of accuracy level considered as 5.0%.

Putting the values in the above equation, the sample size is estimated as n = 384 (Estimated sample size). We considered 172 samples due to time limitations.

Inclusion Criteria: This study enrolled adolescent patients (10yrs-21yrs) who presented to GOPD with menstrual complaints (dysmenorrhea, menstrual irregularities, amenorrhea), discharge per vagina, pain in the lower abdomen, urinary symptoms, and adnexal masses.

Exclusion Criteria: Patients undergoing treatment for mental disorders and those with known pre-existing medical and surgical illnesses.

Data Collection*:* Following admission, a comprehensive history and clinical examination were conducted by the principal researcher. Subsequently, after appropriate counseling, informed written consent was obtained from each patient. Data were systematically collected using a pre-structured proforma to record their socio-demographic & gynecological information, and their mental health status evaluation was done through the psychometric DASS-21 scale, translated into the Hindi language. English version of the DASS scale was also placed for reference.[9]

Depression Anxiety Stress Scale-21, contains 21 sets of questions, and the girls were asked to choose the most appropriate option while referring to their past 1 week's experiences, each response was scored on a 4point scale. There are three subcategories for emotional distress. Depression (e.g., loss of self-esteem/ depressed mood), anxiety (e.g., fear and expectation of negative events), and stress (e.g., persistent state of over-arousal and low frustration tolerance). Participants were asked to rate what number of every of the things (in the shape of statements) applied to them over the past week, with "0 = failed to apply to me at all." to "3 = applied to me noticeably, or most of the time". The more the score the more severe the emotional distress was. Scores were multiplied by 2 to calculate the final score, and thus the severity of depression, anxiety, and stress was graded **(Table 1).** They had undergone gynecological examination & investigations, along with a psychiatric evaluation to reach a final diagnosis and their problems.

Data Analysis: The information was entered into a computer and analysed using the Statistical Package for the Social Sciences (SPSS 25). The results were presented in the form of tables and figures.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

RESULTS

The majority 107(62%) of girls were in the late adolescent (18 to 21 years) group. [Table 2]. Total 69 (40.1%) had discontinued their studies after senior secondary, 51(29.7%) were studying in senior secondary school, 34 (19.8%) in high school, 18 (10.5%) in primary school. All of them belong to the Delhi NCR area region.

The majority attended the OPD due to menstrual disturbances 131, 76.2%), vaginal discharge 17, 9.9%), and the remaining 24 with adnexal masses and UTI. Out of 131 girls suffering from menstrual disturbances, 101 (77%) did not have an organic cause, followed by PCOS, 13 (9.9%), and 7 (5.34%) had hypothyroidism. Genital tuberculosis was observed in 5 (3.8). [Figure 1]

Out of a total of 172 girls, 113 (66.7%) had altered mental status. Among the participants, 46 (40.7%) reported experiencing stress, 45 (39.5%) had anxiety, and 22 (19.4%) had symptoms of depression.

Of the 131 girls with menstrual disorders, 101 (77%) showed signs of abnormal mental status, including depression in 16%, anxiety in 28.2%, and stress in 32.8%. [Table 3]

When we evaluated 101 girls not having any organic cause of menstrual disturbances, 71 girls (70.3%) had altered mental status and 30 (29.7%) girls were normal. (Table 4).

Out of 172 girls, 113(65.6%) girls were having altered mental status and there severity of depression, anxiety, stress was shown in Table 5.

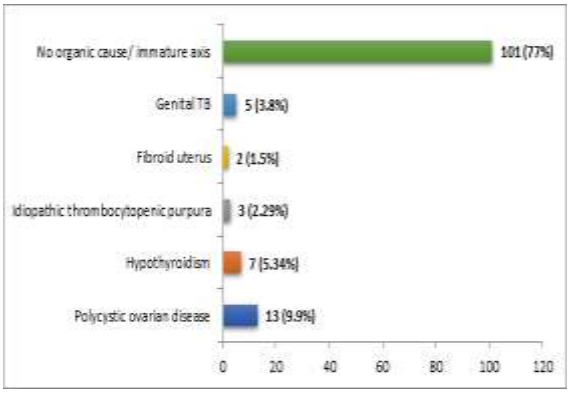

Figure 1: Menstrual disorder –etiology

Table 1: Grading of severity of depression, anxiety, and stress

	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+

Table 2: Age-wise distribution of adolescent girls

Age Group (years)	Numbers of girls	Percentage
Early adolescent (10–13)	23	13.0
Middle adolescent (14–17)	42	25.0
Late adolescent (18–21)	107	62.0
Total	172	100.0

Table 3: Distribution of depression, anxiety, and stress among girls with different gynecological complaints

Complaints	Total	Normal mental status	Abnormal mental status	Depression	Anxiety	Stress
Menstrual disorders	131	30 (22.9%)	101 (77%)	21 (16%)	37 (28.2%)	43 (32.8%)
Abdominal pain	6	4 (66.7%)	2 (33.3%)	0	2 (33%)	0
Vaginal discharge	17	12 (70%)	5 (29.4%)	0	3 (17.6%)	2 (11.7%)
Urinary tract infection	13	9 (69.2%)	4 (30.7%)	1 (7.6%)	2 (15.3%)	1 (7.6%)
Adnexal mass	2	2	0	0	0	0
Bartholin's abscess	3	2 (66.6%)	1 (33.3%)	0	1 (33.3%)	0
Total	172	59 (34.3%)	113(65.7%)	22 (19.4%)	45 (39.8 %)	46 (40.7%)

Table 4: Severity of depression, anxiety, stress among girls (not having an organic cause of menstrual disturbances)

	Total	Mild	Moderate	Severe	Extremely severe
Depression	8 (11.3%)	1 (12.5%)	5 (62.5%)	2 (25%)	0
Anxiety	27 (38%)	6 (22.2%)	17 (62.9%)	4 (14.8%)	0
Stress	36 (50.7%)	9 (25%)	16 (44.4%)	11 (30.5%)	0
Total	71	16 (22.5%)	38 (53.5%)	17 (23.9%)	0

Table 5: Severity of depression, anxiety, stress among all girls

	Total	Mild	Moderate	Severe	Extremely severe
Depression	22 (19.6%)	10(45.4%)	7 (31.8%)	5 (22.7%)	0
Anxiety	45 (39%)	20 (44.5%)	17 (38.6%)	7 (15.9%)	0
Stress	46(41%)	26 (56.5%)	8 (17.3%)	12 (26%)	0
Total	113	56(50%)	32 (28.5%)	24 (21.4%)	0

ISSN (O): 2687-5365; ISSN (P): 2753-6556

DISCUSSION

The main health concerns in adolescent girls are psychological state, menstruation-related issues, early pregnancy and childbirth, and sexually transmitted diseases. We have found Menstrual disturbances were in 131 (76.2%) girls, 17% of girls complained of vaginal discharge, 13% girls had urinary tract infection, 6 % had abdominal pain and 3% of them had Bartholin abscess comparable to a study by Bobiński M et al the most important reasons for seeing a gynecologist were: menstrual disorders (70.30%), suspicion of pregnancy (63.37%), and pain or burning sensations while urinating (58.42%).[10]

Carroll AJ et al. integrated behavioral health services into a women's health clinic and found the most common presenting concerns were anxiety (52%) and depressive symptoms (48%).[11]

According to a survey the prevalence rate of child and adolescent psychiatric disorders in schools was 23.33%. So, it is evident that a considerable proportion of adolescents have mental health problems.[12]

In a survey by Verma, K., Baniya, G.C. found that depression and anxiety were substantially more prevalent in girls with dysmenorrhea than in girls without dysmenorrhea, with an overall prevalence of 29.25% and 37.11%, respectively This study reveals a strong association between menstrual pain and mental health outcomes in rural adolescent girls, emphasizing the importance of integrated healthcare interventions.[13]

Adolescent girls may perceive menstruation as a negative experience, which can impact both their physical and mental health. A cross-sectional study conducted among 1,349 adolescent girls in China aimed to assess their menstrual knowledge, attitudes, and behaviours, and to examine their association with psychological stress. The study concluded that psychological stress management during menstruation should be a key focus of health education programs for adolescent girls.[14] This is also true vice versa that mental health affects menstrual cycle regularity and its complications. Menstrual cycle irregularity is common among adolescents and can induce mental health problems such as stress, depression, and suicidal ideation.

A Korean National Health Nutrition Examination Survey was done on 808 female adolescents (12-18 years of age) participating in the (2010 – 2012) and concluded that more attention should be paid towards mental health, to improve menstrual cycle regularity and help prevent related chronic diseases later in life.[15]

In our study 13 (9.9%) were suffering from PCOS and were having altered mental status. In a case control study on PCOS, an increased risk of depression, anxiety, and stress among women with PCOS was found compared to controls.[16]

Ekramzadeh M et al, conducted a study, aimed at investigating the psychological experiences of adolescent girls with PCOS and concluded to provide psychosocial supports and regular assessment of psychological state by the team of healthcare providers in the adolescent girls with PCOS.[17]

A study by Poleshuck and Woods (2014) highlights that behavioral health symptoms are notably prevalent among gynecological patient populations, as supported by national data.[11]

To achieve wholesome adolescent health, a multidimensional approach covering all the adolescent health problems with special emphasis on mental health, behavior change, and fruitful communication towards a healthy lifestyle with a positive social environment is needed to acquire life skills.

Limitations: This present study has certain limitations. Being a cross-sectional design, it limits the ability to establish causal relationships between variables. The relatively small sample size of 172 participants, compared to the estimated 384, may reduce the statistical power and generalizability of the findings. Additionally, as a single-center study conducted in Delhi NCR, the results may not be representative of the wider population. Furthermore, the absence of formal psychiatric diagnostic confirmation is a limitation, as the DASS-21 is primarily a screening tool rather than a diagnostic instrument.

CONCLUSION

Adolescent Health includes both Gynecological & Psychological care and presents diagnostic as well as therapeutic challenges. A friendly environment with proper counseling is the need of an hour so that they can communicate their anxieties and problems freely. Separate adolescent clinics with counselors are very useful, kind, gentle, and knowledgeable approaches must be used, along with an assured confidential doctor-patient relationship. We should develop help seeking behavior and mental health literacy among them.

Conflict of Interest: The authors declare no conflict of interest related to this manuscript.

REFERENCES

1. http://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health
2. Steingard A. Mood Disorders and Teenage Girls. Child Mind Institute. Accessed July 14, 2020. https://childmind.org/article/mood-disorders-and-teenage-girls/.
3. Mendle J., “Why Puberty Matters for Psychopathology,” Child Development Perspectives 8, no. 4 (2014): 218–222.
4. Lewis G., Ioannidis K., van Harmelen A. L., et al., “The Association Between Pubertal Status and Depressive Symptoms and Diagnoses in Adolescent Females: A Population-Based Cohort Study,” PLoS One 13, no. 6 (2018): e0198804. - PMC - PubMed
5. National Mental Health Survey of India, 2015-2016 Prevalence, Patterns and Outcomes, Supported by Ministry of Health and Family Welfare, Government of India, and Implemented by National Institute of Mental Health and Neurosciences (NIMHANS) Bengaluru: In Collaboration with

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Partner Institutions; 2015-2016. [Google Scholar]. DOI: 10.4103/psychiatry.IndianJPsychiatry_102_17
6. SCALLovibond, S.H. & Lovibond, P.F. (1993). Manual for the Depression Anxiety & Stress Scales (DASS). Psychology Foundation Monograph. (Available from The Psychology Foundation, Room 1005 Mathews Building, University of New South Wales, NSW 2052, Australia). (2nd Ed.)Sydney: Psychology Foundation.
7. Government of India. National Family Health Survey. 2015–2016. Available at http://microdata.worldbank.org/index.php/catalog/2949. Accessed 11 Mar 2019.
8. Moya, E., Larson, L.M., Stewart, R.C. et al. Reliability and validity of depression anxiety stress scale (DASS)-21 in screening for common mental disorders among postpartum women in Malawi. BMC Psychiatry 22, 352 (2022). https://doi.org/10.1186/s12888-022-03994-0
9. Stages of adolescence, https://www.healthychildren.org/English/ages stages/teen/pages/stages-of-adolescence.aspx
10. Bobiński M, Piątkowski W, Sadowska A, Dorota C, Bednarek W. Level of information about gynaecological prevention in teenagers at risk from social exclusion, referred by family court rulings to juvenile attendance centres - a pilot study. Ann Agric Environ Med. 2015;22(3):546-50. doi: 10.5604/12321966.1167732. PMID: 26403132
11. Carroll AJ, Jaffe AE, Stanton K, Guille C, Lazenby GB, Soper DE, Gilmore AK, Holland-Carter L. Program Evaluation of an Integrated Behavioral Health Clinic in anOutpatient Women's Health Clinic: Challenges and Considerations. J Clin Psychol Med Settings. 2020 Jun;27(2):207-216. doi: 10.1007/s10880-019-
12. International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3) 2005-2006: India. Vol. I. Mumbai: International Institute for Population Sciences; 2007
13. Verma K, Baniya GC. Prevalence of Depression, Anxiety and Quality of Life in Adolescent Girls with Dysmenorrhoea in a Remote Area of Western Rajasthan. J Obstet Gynecol India (2022). https://doi.org/10.1007/s13224-021-01603-w
14. Borjigen A, Huang C, Liu M, Lu J, Peng H, Sapkota C, Sheng J. Status and Factors of Menstrual Knowledge, Attitudes, Behaviors and Their Correlation with Psychological Stress in Adolescent Girls. J Pediatr Adolesc Gynecol. 2019 Dec;32(6):584-589. Doi:10.1016/j.jpag.2019.08.007. Epub 2019 Aug 21. PMID: 31445139.
15. Yu M, Han K, Nam GE. The association between mental health problems and menstrual cycle irregularity among adolescent Korean girls. J Affect Disord. 2017 Mar 1;210:43-48. doi: 10.1016/j.jad.2016.11.036. Epub 2016 Nov 30. PMID: 28012351
16. Sulaiman MA, Al-Farsi YM, Al-Khaduri MM, Waly MI, Saleh J, Al-Adawi S. Psychological burden among women with polycystic ovarian syndrome in Oman: a case-control study. Int J Womens Health. 2017 Dec 12;9:897-904. doi: 10.2147/IJWH.S145383. PMID: 29276413; PMCID: PMC5731436
17. Ekramzadeh M, Hajivandi L, Noroozi M, Mostafavi F. Psychological Experiences of Adolescent Girls with Polycystic Ovary Syndrome: A Qualitative Study. Iran J Nurs Midwifery Res. 2020 Jun 17;25(4):341-347. doi: 10.4103/ijnmr.IJNMR_276_19.

ISSN (O): 2687-5365; ISSN (P): 2753-6556