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Impact of menstrual distress on academic performance of adolescent girls

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Abstract

Adolescent girl's education is of critical importance for their future progress as citizens and their success in later life. Menstrual symptoms play a major role in the academic performance of adolescent female students. Menstrual disorders not only have health problems, but also have a consequence like restrictions on educational performance and attending work that hinder practical achievements and employment prospects. Menstrual distress may have negative influences on academic learning outcomes. The study was conducted in Hisar district of Haryana state where four schools were selected randomly where two from rural area and two from urban area. From the selected schools 120 early adolescents and 120 late adolescents were selected randomly. Self-developed schedule was used to delineate socio-personal variables of adolescent girls. Menstrual distress of adolescent girls was assessed by using Comprehensive Menstrual Distress Scale. And academic performance was measured with the help of self-developed interview schedule. Frequency, percentages, mean, standard deviation, 'z' test, chi-square and anova were used to analyse the data. The study found that at menstrual distress was so challenging for adolescents and its negative impact on their academic performance. Present research has found that a substantial portion of girls menstrual distress level impacting academic performance particularly in terms of school absenteeism. The menstrual distress symptoms were significantly interfering with adolescent's classroom, examination, assignment extracurricular activities and relationship performance.

Keywords: Adolescent girls, academic performance, menstrual distress, personal and socio-economic variables

Introduction

Menstrual symptoms play a major role in the academic performance of adolescent female students. The academic performance of girls varies during their menstrual cycle, in a way that the mental status is decreased during and several days before the period. Garg *et al.* (2021) stated that prevalence of school absenteeism during menstruation among adolescent girls of resettlement colony was 43.1%. Out of 307 girls who had school absenteeism, 285 (92.8%) had missed for 1-3days. The most prevalent self-reported reasons for school absenteeism during menstruation were pain during menstruation 75.6% followed by staining of cloths 43.6% and uncomfortable feeling 39.4%. School absenteeism was significantly associated with studying in government school, suffering from menstruation related problems and pads being provided from schools [8]. Adolescent menstrual disorders are extremely common, with a higher than expected rate of menstrual problems. Knowledge of the factors that influence menstrual symptoms is essential for properly managing the symptoms and assisting the girls in making the days less difficult and tolerable. Menstrual practices are influenced by a variety of factors, the most important of which is economic factor. Absenteeism from school became a daily occurrence as a result of menstruation-related issues. Dysmenorrhea and premenstrual symptoms were regarded as the most distressing symptoms, resulting in school absences and missed work days. Premenstrual symptoms and signs have been linked to a higher number of days of disability in recurring work, education, and household activities in women. (Zafar *et al.* 2018) [21].

A research conducted on the association between academic performance, mental health, and reproductive health. The findings suggest that, 49.3% of the 529 students who took part in the study had mild premenstrual syndrome (PMS), 36.9% had moderate/severe PMS, and 13.8% had PMDD (Alemu *et al.* 2017) [1]. Absenteeism of teenage girls' from school because of their menstruation. The type of absorbent used, lack of privacy at school, restrictions placed on girls during menstruation, mother's education, and source of menstruation details were all found to be significant factors in school absenteeism.

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Mostly said it had an effect on their everyday activities at school and that they had to miss class exams and lessons as a result of discomfort, anxiety, guilt, and concerns about leakage and uniform staining (Vashisht *et al.* 2018) [19].

Girls expressed significant shame and fear of teasing related to menstruation, and said that this, together with menstrual discomfort and a lack of appropriate materials for menstrual hygiene management, contributed to school absenteeism. Poverty and menstruation were cited by all policymakers as major factors affecting school attendance (Miuro *et al.* 2018) [13]. The academic demand component of academic stress measured daily frequency and distress associated with assignments, papers, projects/presentation and time studying. There was significant correlation between premenstrual symptoms and academic performance. Hence the study were conducted to impact of menstrual distress on academic performance of adolescent girls.

Methodology

The present study was conducted purposively in Hisar district of Haryana during 2020-21. One district was selected randomly. From selected district, to draw rural sample two villages was selected randomly and from selected villages two schools were randomly selected. For urban sample, two schools were selected which located in city area. From the selected schools, a total of 120 adolescent girls which comprise 60 early adolescents and 60 late adolescents were selected randomly. Similar procedure was adopted for selection of urban sample. Hence, a total of 240 adolescent girls (120 rural and 120 urban) constituted the sample for the

study. Self -developed interview schedule was used to measure the facilities at school and home in terms of MHM and academic performance of adolescents. Self- developed schedule was used to obtain information on personal and socio-economic variables. Menstrual distress was assessed with the help of Comprehensive Menstrual Distress scale (Jain, *et al.*, 2018). Information of academic performance was collected with the help of self -developed interview schedule.

Statistical analysis

Calculate statistical inference frequency and percentage, mean, standard deviation, chi-square test, z test and Anova were computed.

Results

Mean difference in menstrual distress on the basis of age

Data portrayed in table 1 spotlight the difference in menstrual distress and its aspects on the basis of age. Statistically significant difference was observed in physical distress ($Z=2.53^*$) at 0.05 level of significance. Mean score revealed that early adolescent girls ($M=46.18$) experienced more physical distress than late adolescent girls ($M=43.72$). Statistically significant difference was observed in psychological distress ($Z=5.78^*$) at 0.05 level of significance. Mean scores depicted that early adolescent girls ($M=25.20$) had more psychological distress than late adolescent girls ($M=21.32$). However, age based differences were non-significant for socially imposed impurity and restriction, positivity on womanhood and overall menstrual distress.

Table 1: Mean difference in menstrual distress on the basis of area

| Sr. No. | Area Menstrual distress | (N = 240) | | Z value |
|---------|---|--------------------------|--------------------------|---------|
| | | Rural (n=120) Mean±SD | Urban (n=120) Mean±SD | |
| 1. | Physical distress | 48.92± 7.89 | 44.25±7.02 | 4.67* |
| 2. | Socially imposed impurity and restriction | 25.42± 5.18 | 20.71± 5.04 | 7.14* |
| 3. | Psychological distress | 24.13± 5.88 | 21.39± 5.34 | 3.78* |
| 4. | Positivity on womanhood | 26.95±5.08 | 26.09±5.34 | 1.28 |
| 5. | Overall menstrual distress | 112.43±17.10 | 107.01±16.45 | 2.50* |

*Significant at 0.05 level

Mean difference in academic performance on the basis of area

Results of mean difference using Z- test for adolescents academic performance on the basis of area have been presented in Table 2. As per scoring procedure, the higher the score the lower the academic performance except in the component of academic achievement where higher score means higher academic performance. Statistically significant difference was observed in school attendance ($Z=2.61^*$) at 0.05 level of significance. Mean score differences for school attendance component revealed that adolescent girls coming from rural background missed more number of days from school during menstrual periods ($M=1.64±1.84$) than urban area adolescents ($M=1.05 ± 1.66$). Significant differences in the mean scores of classroom performance against area of residence ($Z=3.52^*$) at 0.05 level of significance. Mean score revealed that classroom performance of rural respondents ($M=3.05$) were more affected than the urban area respondents ($M= 2.48$) due to menstrual distress. Statistically significant difference was observed in examination performance ($Z=2.48^*$) at 0.05 level of significance. Mean score revealed that examination performance of rural area adolescents ($M= 3.48$)

were more affected than urban area ($M= 2.98$) adolescents. Rest of the components (academic achievement, assignment, extracurricular and relationship performance) of academic performance was non- significantly different when compared on the basis of area.

Table 2: Mean difference in academic performance on the basis of area

| Sr. No. | Area Academic performance | (N=240) | | Z Value |
|---------|---|--------------------|--------------------|---------|
| | | Rural Mean ± SD | Urban Mean ± SD | |
| 1. | School attendance (mean no. of days missed) | 1.64 ± 1.84 | 1.05 ± 1.66 | 2.61* |
| 2 | Academic acheivement | 68.7 ± 7.89 | 70.5 ± 6.25 | 1.94 |
| 3 | Classrrom performance | 3.05 ± 0.85 | 2.48 ± 0.77 | 3.52* |
| 4 | Examination performance | 3.48 ± 1.56 | 2.98 ± 1.51 | 2.48* |
| 5 | Assignment performance | 2.78± 1.11 | 2.30 ± 1.32 | 1.14 |
| 6 | Extra-curricular performance | 3.50 ± 1.74 | 3.27 ± 1.51 | 1.09 |
| 7 | Relationship performance | 3.21 ± 1.62 | 3.52 ± 1.40 | 1.59 |

*Significant at 0.05 level

Association of academic performance and menstrual distress

This section presents the results related to the association of menstrual distress of adolescents with academic performance. Chi squares (χ^2) test of independence has been used to measure association of academic performance and menstrual distress and the degree of association between dependent and independent variables were run between academic performance and menstrual distress. Three levels of menstrual distress were computed as per scale- low, medium, high. For the purpose of association, categories were formed for both dependent and independent variables. Data regarding the association of adolescent's menstrual distress and academic performance is compiled in Table 2.

Results portrayed significant association of menstrual distress with school attendance ($\chi^2=50.96^*$) at 0.05 level of significance. This means that menstrual distress in girls affected the school attendance. Close perusal of the results further pointed out menstrual distress was associated with academic achievement ($\chi^2=18.40^*$) at 0.05 level of significance. However, from the percentage distribution it can be said that a higher percentage (47.9%) of adolescent experienced higher menstrual distress resulted in poor academic achievement.

The data revealed that effect of menstrual distress was associated with classroom performance in which not having interest to go to the school ($\chi^2=74.51^*$), lack of concentration during study hours ($\chi^2= 41.10^*$), difficulty in remembering the studied content ($\chi^2= 15.74^*$), feeling of hesitation to go for practical classes ($\chi^2= 123.33^*$) at 0.05 level of significance.

Even the menstrual distress symptoms were affecting the adolescent girl's performance in examination. The results depicted that menstrual distress was associated with not able to prepare for examination ($\chi^2= 33.60^*$), getting slow in writing examination ($\chi^2=14.59^*$), lack of concentration during examination ($\chi^2= 70.75^*$) at 0.05 level of significance, whereas, menstrual distress was not significantly associated with no interest to write examination during this time. The menstrual distress symptoms were interrupting adolescent girl's assignment activities.

The data present in table 26 depicted that menstrual distress was associated with inability to complete the assignment in time ($\chi^2=36.77^*$), not able to do critical thinking ($\chi^2=71.95^*$), feel to get excuse from teacher ($\chi^2=29.17^*$), not able to do presentation ($\chi^2=15.98^*$), at 0.05 level of significance.

It is evident from the data that menstrual distress was affecting the extracurricular performance of the adolescent girls. The results highlight that menstrual distress was associated with difficulty in participating extracurricular activities ($\chi^2=37.76^*$), difficulty in public speaking ($\chi^2=37.06^*$) at 0.05 level of significance. While menstrual distress was not associated with stage performance and lack of interest in extra classes.

Individual personality also affected by menstrual distress. The data depicted that menstrual distress was associated with getting mood swing ($\chi^2=21.50^*$), lack of self-confidence ($\chi^2=75.59^*$), lack of interest to meet the teacher ($\chi^2=106.45^*$) at 0.05 level of significance, whereas, menstrual distress was not associated with feeling of inferiority during periods.

Table 3: Association of academic performance and menstrual distress

(N=240)

| Sr. No | Menstrual distress Academic performance | Menstrual distress | | | χ^2 test | |
|--|--|--------------------|----------------|-------------|---------------|---------|
| | | Low (n=63) | Medium (n=129) | High (n=48) | | |
| School attendance during menstruation | | | | | | |
| 1. | (Absence from school during menstruation) | No | 51(80.9) | 40 (31.1) | 12 (25.0) | 50.96* |
| | | Yes | 12 (19.1) | 89 (68.9) | 36 (75.0) | |
| 2. | Academic achievement | Poor | 11 (17.2) | 29(22.5) | 23(47.9) | 18.40* |
| | | Average | 33 (52.1) | 72(55.8) | 19(39.6) | |
| | | Excellent | 20 (31.7) | 28(21.7) | 06(12.5) | |
| Classroom performance | | | | | | |
| i) | No interest to go to the school. | No | 53 (84.1) | 34(26.4) | 7(14.6) | 74.51* |
| | | Yes | 10 (15.9) | 95(73.6) | 41(85.4) | |
| ii) | Lack of concentration during study hours. | No | 38 (60.3) | 30(23.3) | 4(8.3) | 41.10* |
| | | Yes | 25 (39.7) | 99(76.7) | 44(91.7) | |
| iii) | Difficulty in remembering all that is studied. | No | 41 (65.1) | 63(48.8) | 13(27.1) | 15.74* |
| | | Yes | 22 (34.9) | 66(51.2) | 35(72.9) | |
| iv) | Feeling hesitation to go for practical. | No | 53 (84.1) | 10 (7.8) | 18 (37.6) | 123.33* |
| | | Yes | 10 (15.9) | 119(92.2) | 40 (83.4) | |
| Examination performance | | | | | | |
| i) | No interest to write examination during this time. | No | 28 (44.4) | 38(29.5) | 12(25.0) | 4.10 |
| | | Yes | 35(55.6) | 91(70.5) | 36(75.0) | |
| ii) | Not able to prepare for examination. | No | 38(60.3) | 65(50.4) | 4(8.3) | 33.60* |
| | | Yes | 25(39.7) | 64(49.6) | 44(91.7) | |
| iii) | Getting slow in writing examination. | No | 45(71.4) | 57(44.2) | 20(41.7) | 14.59* |
| | | Yes | 18(28.6) | 72(55.8) | 28(58.3) | |
| iv) | Lack of concentration. | No | 58(92.1) | 39(30.2) | 15(31.3) | 70.75* |
| | | Yes | 5(7.9) | 90(69.8) | 33(68.7) | |
| Assignment performance | | | | | | |
| i) | Unable to complete the assignment in time. | No | 48(76.2) | 39(30.2) | 19(39.6) | 36.77* |
| | | Yes | 15(23.8) | 90(69.8) | 29(60.4) | |
| ii) | Not able to do critical thinking. | No | 53(84.1) | 38(29.5) | 6(12.5) | 71.95* |
| | | Yes | 10(15.9) | 91(70.5) | 42(87.5) | |

| | | | | | | |
|------|---|-----|-----------|-----------|-----------|---------|
| iii) | Feel to get excuse from teachers. | No | 33(52.4) | 21(16.3) | 20(41.7) | 29.17* |
| | | Yes | 30(47.6) | 108(83.7) | 28(58.3) | |
| iv) | Not able to do presentation. | No | 19(30.2) | 54(41.9) | 5(10.4) | 15.98* |
| | | Yes | 44(69.8) | 75(58.1) | 43(89.6) | |
| 6. | Extracurricular performance | | | | | |
| i) | No interest in stage performance. | No | 17 (26.9) | 20 (15.5) | 7 (14.6) | 4.29 |
| | | Yes | 46 (73.1) | 109(84.5) | 41 (85.4) | |
| ii) | Difficulty in participating extracurricular activities. | No | 28 (44.4) | 9 (6.9) | 14 (29.2) | 37.76* |
| | | Yes | 35 (55.6) | 120(93.1) | 34 (70.8) | |
| iii) | Difficulty in public speaking | Yes | 37 (58.7) | 23 (17.8) | 24 (50.0) | 37.06* |
| | | No | 26 (41.3) | 106(82.2) | 24 (50.0) | |
| iv) | Lack of interest in extra classes. | No | 8 (12.7) | 20 (15.5) | 10 (20.8) | 1.38 |
| | | Yes | 55 (87.3) | 109(84.5) | 38 (79.2) | |
| 7. | Relationship performance | | | | | |
| i) | Getting mood swing. | No | 41 (65.1) | 44 (34.1) | 13 (27.1) | 21.50* |
| | | Yes | 22 (34.9) | 85 (65.9) | 35 (72.9) | |
| ii) | Feeling of inferiority. | No | 35 (55.6) | 57 (44.2) | 21 (43.8) | 2.46 |
| | | Yes | 28 (44.4) | 72 (55.8) | 27 (56.2) | |
| iii) | Lack of self- confidence. | No | 53 (84.1) | 38 (29.5) | 5 (10.4) | 75.59* |
| | | Yes | 10 (15.9) | 91 (70.5) | 43 (89.6) | |
| iv) | Lack of interest to meet the teacher. | No | 49 (77.8) | 7 (5.4) | 15 (31.3) | 106.45* |
| | | Yes | 14 (22.2) | 122(94.6) | 33 (68.7) | |

Discussion

Results revealed that mean difference in menstrual distress and its aspects on the basis of age emphasized that early adolescents were comparatively more distressed than late adolescents. The reason for this might be that early adolescent girls are not well prepared physically and psychologically in terms of knowledge, skills, and attitudes for managing the menstrual cycle. Results are in consistent with the findings stated by (Reena, 2015) that early adolescents face more physical distress and psychological distress as compared to late adolescents. Older adolescents had lower menstrual distress which could be an outcome of biological maturation and experience as one progresses into adulthood^[6]. Brooks-Gum & Ruble, (1982) also reported that the girls who start menstruating early in comparison with their peer group experience more negative and difficult menarche experiences^[5]. Results portrayed that rural adolescent girls had poor academic performance in school attendance, classroom performance and examination performance as compared to urban adolescent girls. Dasgupta and Sarkar, (2008) concluded on the basis of study done in rural West Bengal, 16.18% girls did not attend school. In another comparative study done in West Bengal, 10.67 percent of urban girls did not attend school where as in rural area it is 17.70 percent. A very few families were restricting their children from going to school in the present study during menstruation^[6]. Another results reported by (Raju and Suguna, 2017) study clearly stated the majority of students were having more difficulty to cope up with the class room performance during menstruation. This study also stated that the students were having more difficulty to complete their assignments and even during examination with the menstrual symptoms^[15]. Results revealed that menstrual distress was significantly associated with school attendance as one third of highly distressed respondents reported higher school absenteeism during their menstruation. This finding is in line with other studies (Tegegne and Sisay, 2014) who reported that over half (54.5%) of the girls had been absent from school during their last menstrual period^[18]. Bodat *et al.*, (2013) also reported that 43.2% girls who attained menarche would remain absent from school during menstruation^[4]. In another study report (Lee *et al.*, 2006) girls were less likely to attend school on the

days they had their periods as compared with other days^[11].

The current study presented as significant relation between menstrual distress and school attendance. This agree with Pitangui *et al.*,(2013) study results about menstruation disturbance and effects on the activity of daily living among girls from Brazil who found a significance relation between dysmenorrhea and school absenteeism^[14].

The menstrual distress has significant impact on academic achievement as nearly fifty percent respondents reported high distress which resulted in poor academic achievement. Results of the present study are in line with results stated that (Sanni, 2019) significant association between the academic achievement of students and menstrual distress existed^[17]. In the study by Tegegne and Sisay, (2014) over half (57.8%) of respondents had indicated that menstruation had affected their academic performance or rank negatively as compared to what it was before menarche^[18].

Menstrual distress has significant impact on classroom performance of adolescent girls resulted in higher percentage of distressed respondent reporting no interest to go to the school (74.51*), lack of concentration during study hours (41.10*), difficulty in remembering all that is studied (15.74*) and feeling hesitation to go for practical (123.33*). Jahromi *et al.* (2008) reported that the class concentration of the students was highly affected^[10]. Another study (Raju, and Suguna, 2017) highlighted that effect of menstrual symptoms are said to be multidimensional in nature such as lack of interest on the part of students under menstrual period to go to the schools, lack of concentration during study hours and difficulty in remembering the studied contents among others which would sum up to impact academic performance of female students in school subjects negatively^[15].

Results of the present study clearly indicated the association of menstrual distress with examination performance of the adolescent girls and highly distressed group of girls reflecting problems like not able to prepare for examination (33.60*), getting slow in writing examination (14.59*), lack of concentration (70.75*). These results are consistent with findings of studies (Issa *et al.* 2010; Raju and Suguna, 2017) which stated that the students were having more difficulty to complete their assignments and even examination with the menstrual symptoms^[15, 9].

Performance on assignment completion and presentation was also significantly lowered due to menstrual distress among adolescent girls. In highly distressed girls significant associations were observed with inability to complete the assignment in time (36.77*), not able to do critical thinking (71.95*), feel to get excuse from teachers (29.17*), not able to do presentation (15.98*). Results of the present study are in the line with study (Elnagar *et al.*, 2017) finding that there was a significant relationship between premenstrual syndrome and lectures attendance, concentration, understanding, participation in discussion, practical performance and participation in activities^[7].

Results depicted that menstrual distress leads to difficulty in participating extracurricular activities (37.76*) and difficulty in public speaking (37.06*). These findings are supported by Vashisht *et al.*, (2018) who reported that 69.5% menstruation did affect girls' school life and in turn they avoided certain activities at school^[19]. Past research (Lilliwati, *et al.*, 2007) argued that the negative effects of menstruation on school activities include school absence, class absence, reduced concentration and disability to participate in sport activities^[12].

Personality of adolescent girls was also found to have negative impact of menstrual distress. Girls experiencing more distress reported problems of getting mood swing (21.50*), lack of self-confidence (75.59*), lack of interest to meet the teacher (106.45*) (Al-Jefout *et al.*, 2015) reported that there was strong association between severity of dysmenorrhea and poor university attendance, poor social activities, poor relationships with family and friends and poor sport activities^[2]. Belbase *et al.* (2021) concluded that 63.8% of the respondents reported negative attitude on menstrual problem interferes with school performance^[3]. Nearly three fourth of the respondent attend school during menstruation i.e.74.8%. Among those who did not attend school 71.7% reported fear of unexpected bleeding as a reason followed by lack of material or pad, presence of menstrual symptoms and lack of water facilities. 74.8% of the respondents did not miss the school but 11.4% missed their school for 1 day, 7.1% missed for 2 days and 6.7% missed for ≥ 3 days in a month due to menstruation. Although the school going percentage of respondents are high but schools should impart right information and encourage girls to attend school regularly in order to minimize absenteeism.

Conclusion

Early adolescents were comparatively more distressed than late adolescents Menstrual distress had significant impact on academic performance in forms of school absenteeism, loss of concentration and understanding, sleeping desire during lectures in addition to affecting the practical performance of the adolescent girls. Study revealed that academic performance of rural adolescent girls was more affected as comparisons to urban adolescent girls. The present study clearly stated the majority of students were having more difficulty to cope up with the class room performance during menstruation.

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