SYNOPSIS

Introduction: Menarche remains a nightmare for most adolescent girls of Kerala. This study estimated the emotional and social problems faced by school girls of this region compounded by lack of knowledge. The effect of an educational module on the improvement in knowledge and capacity to face the strains of this new event in life were assessed in a scientific way. A one group pre-test post-test quasi-experimental study was conducted among school girls keeping Betty Newman’s System model as the conceptual frame work.

Materials and Methods: The study was conducted in two schools – one urban and one rural. The sample consisted of 1000 girls studying in the 7th, 8th, 9th and 10th standards (693 had attained menarche). Pre-test data was collected using two structured questionnaires. Questionnaire I, distributed to all students included questions to assess the knowledge level regarding menstruation, menstrual problems and menstrual hygiene. Questionnaire II, given only to girls who attained menarche was to assess their menstrual distress tolerance levels and menstrual hygiene practices. An intervention was administered to all as an instructional module and teaching session. After two weeks, post-test was conducted by blind rater using the same questionnaires to find the effect of the educational programme. A further follow up of 20% of the girls (139) who attained menarche was made two months after the first post-test by distributing questionnaire II. From the data obtained, statistical analysis was performed utilizing the student t test, Anova, Bartlett’s Chi squire, Mann-Whitney U test, Kruskal-Wallis H test and Duncan’s multiple range test in three steps, pre-test score analysis, post-test score analysis and improvement in score analysis to reach the conclusions of the study. The variations in knowledge in the different variables namely age, religion, domicile, grade of education, age of mother, education of mother, occupation of mother, age of father, education of father, occupation of father, family income, type of family and exposure to media were analysed in the different sub groups in the pre test, post test and improvement scores.
Observations: **Questionnaire I:** The pre-test scores ranged from 0 to 39.25 (mean 10.5) out of 48. When the total knowledge score in the pre test was considered, significant variations were identified in the variables, age (P<0.01), religion (P<0.01), domicile (P<0.01), grade of education (P<0.01), age of mother (P<0.01), education of mother (P<0.01), occupation of mother (P<0.01), education of father (P<0.01) and family income (P<0.01), but not in age of father, occupation of father and type of family. Knowledge was maximum in 15 year olds (15.2). Muslims had the highest knowledge score (12.8), followed by Hindus (10.8) and Christians (9). The urban girls had high score (11.8), followed by rural and colony girls. There was uniform increase in score with grade of education of the girls. Girls of elder mothers had highest score (13.1). Girls of educated mothers had high score (12.4). The girls of office going mothers had high score (13.7), followed by those of house wives and mothers with other jobs. The girls of educated fathers and those belonging to high income family had high scores. The girls’ access to different media also produced high score. On assessing the pre test knowledge amongst the girls on specific aspects namely adolescence, menstruation, physical problems, psychological problems and menstrual hygiene, knowledge scores about adolescence were similar to the total scores except in domicile, where the scores were not significantly variable and in age of the father which showed significant variation (P<0.01). The scores were higher in girls with fathers of higher age. Knowledge about menstruation was similar to the total except in occupation of father (P<0.05), where girls of office and technical workers had higher score. The scores about physical problems were similar to the total except in education of mother which was not significant. The scores of psychological problems were similar to the total except in religion, age of the mother, education of mother, education of father and family income, where the scores were not significantly varied. The scores of social problems were similar to the total except in domicile, age of mother and occupation of mother where the scores were not significantly varied. The scores of menstrual hygiene were similar to the total except in age of mother, education of mother and family income, where no significant variation was seen in knowledge scores.
Post test scores ranged from 0 - 46.25 (mean 24.1) out of 48. Significant variations were identified in age (P<0.01), religion (P<0.01), domicile (P<0.01), grade of education (P<0.01), education of mother (P<0.01), occupation of mother (P<0.01), education of father (P<0.01), occupation of father (P<0.01), income (P<0.01) and exposure to media (P<0.01), but not in age of mother, age of father and type of family. The maximum score was obtained by the 15year olds (28.0), Muslims (30.4), urban girls (30.5), 10th standard girls (29.4), girls of mothers having degree and above (25.8), girls of office going mothers (29.5), girls of fathers having degree and above education (26.9), girls of fathers having technical work (26.2), girls from high income family (28.9) and girls with exposure to media. On analyzing the subgroups, the scores of adolescence and physical problems were similar to the total scores. The scores of menstruation were similar except in age of mother, where the scores were significantly varied (p<0.05). The scores of psychological problems were similar to the total scores except in education of mother, education of father and family income, where the variations were not significant. The scores of social problems were similar to the total scores except in education of mother, education of father and family income where the scores were not significantly variable. The scores of menstrual hygiene practices were similar to the total scores except in occupation of mother, occupation of father and family income, which were not significantly variable.

The difference in total mean score (13.6) was statistically highly significant (P<0.01). Highly significant difference was seen in domicile, grade of education, occupation of father, type of family and access to media (P<0.01). Significant difference was seen in age, religion and education of mother (P<0.05), but not in age of mother, occupation of mother, age of father or family income. The differences in scores of adolescence were similar to the total scores in religion, education of mother, type of family and exposure to media, where the differences were not significant. The difference in scores of menstruation was similar to the total scores except in religion and education of mother where no significance was noted. The difference in scores of physical problems was similar to the total scores. The difference in scores of psychological problems was similar to the total scores except in religion, education of mother and type of family where the scores did
not show difference. The difference in scores of social problems was similar to the total scores except in age of mother where the girls of elder mothers showed significant difference (P<0.05). The difference in scores of menstrual hygiene was similar to the total scores only in place of domicile, whereas difference in scores of age, religion, grade of education, education of mother, occupation of father, type of family and exposure to media was not significant.

22.9% of girls scored >35% in the pre test and 72.6% scored >35% in the post test (P<0.000) among the variables, age, domicile, grade of education, education of mother, income and attainment of menarche. The knowledge on adolescence was similar to the total in age, grade of education, education of mother, income and attainment of menarche. Knowledge on menstruation was also similar to the total except in religion and type of family. Highly significant improvement was shown by Muslims and girls in the nuclear family (P<0.001). Physical problems showed similar result as total except in domicile, education of mother and family income where no significance was shown. Psychological problems had similar result as total except in domicile and education of mother where no significance was noted. Social problems had similarity in all variables as total. Menstrual hygiene practices improved with age, grade of education and attainment of menarche. The mean difference in total score of knowledge between pre menarche and post menarche girls was significant (P<0.05). Knowledge on menstruation was more significantly different (P<0.01).

**Questionnaire II:** In the pre-test, problem tolerance score of menstruation was highest in the 10th standard girls (P<0.01). The physical problem tolerance scores were similar to the total scores except in grade of education, where no significant variation was seen. Psychological problem tolerance scores were also similar to the total except in age of father, where significance was noted. Social problem tolerance scores were also similar except in grade of education where no significance was noted and age of mother where significant variation was identified (P<0.01). There was significantly better menstrual hygiene practice among urban girls (P<0.01). Significant variation was seen in variables like age, age of mother, education of mother, occupation of mother, occupation of father
and exposure to media (P<0.05). Variables like religion, grade of education, age of father, education of father, family income and type of family did not show significant difference.

Post-test score revealed significant improvement in menstrual problem tolerance scores in different groups namely domicile and education of father (P<0.05). Urban girls had significantly higher scores (P<0.01). Physical problem scores were similar to the total scores except in education and occupation of father, where no significance was noted. The psychological problem tolerance scores were similar to the total scores except in age, where the girls belonging 12-13 years showed significant increase in tolerance (P<0.05). Grade of education did not show significant difference. The social problem scores were similar to the total scores except in age where 13 year olds showed significant improvement (P<0.05).

On follow up, the colony girls showed highly significant increase in problem tolerance scores (P<0.01). The 10th standard girls showed further significant improvement (P<0.05). Physical problem tolerance scores showed similar results as the total and the score was more among the 10th standard girls (P<0.01). In psychological and social problem tolerance, scores were not different. Menstrual hygiene practices improved significantly among colony girls and girls of elder fathers (P<0.01).

Conclusion: The study shows that existing knowledge about menstruation and coping strategies among the school girls are meagre. They improved after the educational programme and there was considerable increase in the tolerance of menstrual problems. Menstrual hygiene practices improved significantly after the intervention.