



PREVALENCE OF ANEMIA AND UTILIZATION OF ADOLESCENT HEALTH SERVICES UNDER RMNCH+A AMONG ADOLESCENT GIRLS AT SELECTED COASTAL AREAS OF KOLLAM DISTRICT

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ABSTRACT

BACKGROUND

Adolescence has been defined by the World Health Organization as the period of life spanning the ages between 10 to 19 years. This period has been considered as the transitional phase from childhood to adulthood. During this phase, major psychological, behavioral, and physical developments ensue, because of marked physical activity and rapid growth spurt adolescence needs additional nutritional requirements

AIM: To assess the prevalence of anemia and utilization of adolescent health services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.

MATERIAL AND METHODS: Quantitative research approach was used with descriptive design in this study. Convenience sampling technique was used to select the 100 samples. Hemoglobin estimation was done by laboratory method and checklist provided for assessing utilization of adolescent health services.

RESULTS: The findings of the study showed that prevalence rate of anemia was 75% and 63% of samples reported moderate utilization. The findings showed that there was moderate positive correlation between prevalence of anemia and utilization of adolescent health services with calculated 'r' value of 0.44. There was a significant association between source of information regarding adolescent health services and prevalence of anemia and there was a significant association between demographic variable education of father and utilization of adolescent health services.

CONCLUSIONS: The present study revealed that utilization of adolescent health services had an impact on prevalence of anemia.

Keywords: Prevalence; Anemia; Utilization of adolescent health services; RMNCH+A; Adolescent girls; Coastal areas of Kollam district.

INTRODUCTION

“An ounce of prevention is worth a pound of cure”

- Benjamin Franklin

Anemia is a major public health problem worldwide. Adolescent girls are the most vulnerable group of population due to different reasons. Anemia accounts for a majority of the nutritional problem across the globe and it is principally engendered by deficiency of iron. Its prevalence is inordinately higher among developing nations, because of low socio-economic status and indigent access to healthcare services.⁸

In developing countries, the adolescent group is more exposed to nutritional challenges and adolescent girls are more vulnerable to the disease. Studies showed that adolescent anemia was the greatest nutritional problem encountered in developing countries. India had reported high prevalence of anemia among adolescent girls, which is apparently higher when compared with the other developing nations⁸

Accounting half of all cases, iron deficiency anemia is the most common cause of anemia. However, other conditions like nutritional deficiencies, acute and chronic inflammation, parasitic infections, growth spurt, increase in iron requirements, increased iron loss from the body during the menstruation, inherited or acquired disorders of hemoglobin synthesis, RBC production, or survival are also considered cause of anemia. Even though iron deficiency anemia can possibly occur at all stages of the life, it is more prevalent among pregnant women, young children, and adolescents. Since the overall iron requirement increases two to three folds during adolescence due to high growth spurt and the loss of 12.5-15 mg iron each month, adolescent girls are vulnerable to anemia.

REVIEW OF LITERATURE

Literature related to prevalence of anemia

A cross-sectional study was conducted to determine the prevalence and risk factors of Iron Deficiency Anemia among apparently healthy Yemeni medical students at Hodeida University. Five hundred blood samples were collected randomly which includes 326 males and 174 females. Participants were subjected to different tests including complete blood counts (CBC), serum ferritin (SF), serum iron (SI), and total iron binding capacity (TIBC). Data were collected through a questionnaire regarding their demographics, food and drink habits, and socioeconomic status. The results showed that the prevalence of Iron deficiency anemia was 30.4%. Students aged 20–22 years were found more anemic with prevalence 59.2% than students aged 17–19 years (25.0%) and 23–25 years (15.8%). Statistical analysis showed regularly having breakfast had significant ($p < 0.001$) role in preventing development of IDA compared with irregularly having breakfast. Infrequent consumption of vegetables/fruits; meat, fish, chicken; tea drinking, low household income, smoking and khat chewing showed a significant role ($p < 0.001$) in provoking of IDA, whereas consumption of coffee and cola showed insignificant influence on IDA. The study concluded that the majority of university students, especially females, have IDA that might become worse by malnutrition, lifestyle habits, and lack of

awareness and suggested that IDA can be prevented by providing proper knowledge on the healthful diet, improved lifestyle, and harmful effect of IDA to the students.¹²

A cross-sectional study was carried out at the Department of Obstetrics and Gynecology at Govind Ballabh Pant hospital, Port Blair, Andaman and Nicobar Islands to determine the prevalence of anemia and associated sociodemographic factors among pregnant women. The study period was 6 months and total of 786 pregnant women between the age of 12–40 years were included in the study. Data were collected by means of interviewer-administered questionnaire and complete blood count of venous blood. WHO guidelines were used to define and classify anemia as mild, moderate, or severe. The results showed that the hemoglobin levels of the participants ranged from 4.4 to 15.0 g/dl. Anemia was observed in 50.9% of the sample. Prevalence and severity of anemia decreased with increasing educational levels of both husband and wife and increasing gestational age, and increased with increasing gravidity and parity. The study concluded that awareness and education helped reduce the prevalence of anemia. Education of husband was seen to have a greater effect than education of wife. Wide coverage, systematic intervention, and disbursement of folic acid and iron supplements to pregnant women by subcenters and primary health centers prior to their hospital visit were also effective.

A cross-sectional study was conducted to determine the prevalence of anemia among tribal pregnant women at Trivandrum district, Kerala and identifying its socioeconomic and gynaecological risk factors among tribal women attending antenatal clinics of Vithura and Kuttichal Government hospitals at Kerala, India. Sample size was calculated as 117. Data were collected by interviewing the samples who were attending the primary health centre during the study period by using a semi-structured questionnaire which included socio-demographic, cultural and nutritional factors. Hemoglobin level was measured by using semi-auto hemoglobin analyzer. The study result showed that the prevalence of anemia among the tribal pregnant women was 53.33%. The prevalence of mild, moderate and severe anemia was observed as 26.66%, 25% and 1.66% respectively. The mean serum hemoglobin level among the study group was found to be 10.64 gm%. The major risk factors associated with anemia were figured out to be low body mass index, low family income, high parity, joint family, exposure to passive smoking and pan chewing, irregular intake of iron and folic acid supplements, hyperemesis and absence of deworming. The study concluded that the focus shall be given on creating awareness among tribal women regarding the need for dietary and lifestyle modification to decrease the prevalence of anemia.

Literature related to anemia in adolescent girls

A cross-sectional study was conducted in the rural field practice area of Government Medical College, Barmer, Rajasthan, in February 2020 among school-going adolescent girls between the age group of 11–19 years. The study participants were chosen randomly from secondary schools. The study participants gave their consent for hemoglobin estimation and it was performed using HemoCue (Hb 201). Data were collected using a semi-structured questionnaire about their sociodemographic characteristics, menstrual cycle, eating habits, awareness of anemia, causes, symptoms, and therapy. Based on WHO criteria the study showed the anemia was found in 56.32% (n = 352) of the population, with a mean of 9.92 (SD = 1.40) and in terms of severity, mild, moderate, and severe anemia were observed in 29.12%, 22.24%, and 4.96% of the individuals.²¹

A cross sectional study was conducted to assess the prevalence of IDA among adolescent girls in Saravan, Andhra Pradesh. A sample of 460 high-school girls were randomly selected and data were collected by using a questionnaire. Knowledge, attitude and practice of participants with regard to iron deficiency anemia was measured at the beginning of the interview. Prevalence of anemia and IDA was 24% (n = 111) and 12.6% (n = 58), respectively. The result of the study showed that 37 % of students had good knowledge, 45.5 % good attitude, and 6.7% had good practice and there was no significant association between IDA and socio-economic status including parental education, job, and household income ($P > 0.05$). The study concluded that the prevalence of IDA was moderate in Saravan city and for the importance of IDA and its complications, further studies are needed, especially in high risk populations for IDA such as children.²²

An quantitative study was carried out to identify the prevalence of anemia and assess the effectiveness of structured teaching programme on Knowledge Regarding Prevention of Anemia Among Adolescent Girls Age Group 12-18 Years studying in a selected government school Jhajjar, Haryana. 100 adolescent girls were selected for the study by using non-probability convenient sampling technique. Data were collected by using questionnaire. The result of the study showed that mild anemia in girls was 61%, moderate anemia was 39% and severe anemia was 0%. Pretest knowledge score showed that 25% of girls had poor knowledge 75% of girls had average and 0% of girls had good knowledge regarding prevention of anemia among adolescent girls age group 12-18 years, in post-test 17% of adolescent girls had average and 83% of adolescent girls had good knowledge score on knowledge regarding prevention of anemia among adolescent girls age group 12-18 years. The study concluded that structured teaching program was effective to improving knowledge regarding prevention of anemia among adolescent girls age group 12-18 years.²³

A cross sectional study was conducted to determine the prevalence of anemia in adolescent girls in a rural area of central Kerala and to find out the factors associated with anemia among them. The study participants of 194 adolescent girls of Tholur panchayath in Thrissur district, Kerala were randomly selected from the adolescent registers maintained in anganwadis. The data was collected by a semi-structured questionnaire after getting informed assent and consent from the participants and their guardians respectively. All the participants were clinically examined, anthropometric measurements were taken and 2 CC of EDTA anti-coagulated blood samples were collected to test hemoglobin. The results of the study showed that the prevalence of anemia among the participants is found to be 26.3%. Out of the total anemic girls, 94% were mildly anemic (Hb between 10-11.9 g/dl) and the remaining were moderately anemic (Hb between 7-9.9 g/dl). Anemia was significantly higher in the age group between 10-14 years (39.5%), compared to 15-19 years (15.6%). Lower frequency of intake of green leafy vegetable and whole grain cereals were found to have significant association with anemia. The study concluded that anemia remains as a moderate public health hazard among the adolescent girls, with roughly every fourth girl becoming anemic. Nutritional inadequacies were shown to be the most common cause of anemia, which was found to be greater in the early teenage period among them

Literature related to utilization of Adolescent health services under RMNCH+A

A community based analytical cross-sectional study was conducted to find out the utilization of adolescent health services in Dang district of Nepal. Five adolescent friendly health facilities were randomly selected and proportionate sampling was done to fulfill the required sample size. The adolescents were selected by using convenient sampling technique. Bivariate analysis was performed to detect the factors associated with utilization of adolescent friendly health services. The study result showed that nearly half (48.7%) of the adolescents had utilized adolescent friendly health services. Different socio-demographic factors like age of the participants, current educational status, mother's education, ethnicity was significantly associated with utilization of adolescent friendly health services. Other factors like awareness about services, convenient opening days and hour of health facilities and shyness to utilize the services were significantly associated with the utilization of the services. The study concluded that the utilization of the adolescent friendly services was found to be low among the adolescents of Dang district. In order to increase awareness among the adolescents regarding utilization of the services, there is need for coordination between schools, health institutions, communities etc. to conduct various awareness related programs.³¹

A qualitative study adopting a case study design was conducted to explore perceived barriers to accessing and using adolescent health services in Ghana. 24 adolescent samples were selected from four adolescent health facilities in Tema, a suburb of Ghana, using convenient sampling technique. The study period was for 5 months and data collected through in-depth interviews with respondents coupled with the taking of field notes and personal observations. Data were transcribed, managed and coded for themes. Thematic analysis was guided by Braun and Clarke's (2006) Framework. The findings of this study revealed that majority of the respondents were females (54 percent) older adolescents (above 15 years (60 percent), students (79 percent)), had junior high school education and stayed with their biological parent(s) (70 percent). Adolescents in this study perceived four main barriers that restrict their access to or use of adolescent health services. The barriers were found at the facility level, provider level, community level and personal level. The study recommended to provide evidence-based information for planning adolescent health care interventions that would improve adolescents' access to and use of health services in Ghana.³²

A cross-sectional study was conducted in a Malaysian state to determine the proportion of clinics that provided adolescent-friendly health services, identify the crucial criteria for the provision of adolescent-friendly health services and determine the correlation of adolescent-friendliness level with the satisfaction level of adolescents. through clinic assessment and adolescent satisfaction survey. Data were collected from 85 clinics. The result showed that out of 85 clinics only 35.3% (95% CI: 0.25, 0.46) can be regarded as adolescent-friendly clinics. Large clinics showed significantly [$F(2,84) = 13.82, p < 0.001$] higher mean score than smaller clinics. Adolescent-friendly clinics had significantly ($p < 0.05$) higher mean score in 11 of 12 criteria of best practices than conventional clinics. Adolescents were more satisfied with the health services provided by adolescent-friendly clinics than conventional clinics ($p < 0.05$). There is a significantly ($p < 0.05$) strong correlation between clinic assessment score and adolescent satisfaction level ($r = 0.643$). The study concluded that it provides important insight for the Ministry of Health to strengthen the provision of adolescent-friendly health services in Malaysia.³³

A community-based cross-sectional quantitative method mixed with the qualitative inquiry was conducted among 771 adolescents and youth aged 15 to 24 years from February 1 to 28, 2020 to assess the access and utilization of adolescent and youth sexual and reproductive health services in western Ethiopia. Data were collected through face-to-face interviews using pretested structured questionnaires. Descriptive analysis and logistic regressions were performed. The adjusted odds ratio with a 95% confidence interval was used and statistical significance was declared at P -value < 0.05 . The qualitative inquiry was collected through in-depth interviews with service providers, focus group discussions, and observation checklists of service units in the study facilities. The study results show that the mean age of participants was 18.99 years

(SD \pm 2.49). Two hundred seventeen (28.1%) of participants reported that they have ever heard about adolescents' and youth's reproductive health services. Only 66 (8.6%) have ever visited health facilities for sexual and reproductive health (SRH) services. Factors associated with the utilization of sexual and reproductive health service were age from 15 to 19 years (AOR = 0.36; 95%CI: 0.17, 0.76), history of having sexual intercourse (AOR = 5.34; 95%CI: 2.53, 11.23), ever heard about sexual reproductive health service (AOR = 11.33; 95%CI: 5.59, 22.96), and visited a health facility for other health services (AOR = 5.12; 95%CI: 1.72, 15.24). The study concluded that sexual and reproductive health service utilization among adolescents and youth was found to be low. The factors associated with adolescents and youth sexual and reproductive health services utilization were age, history of ever having sexual intercourse, ever heard about SRH services, and visit the health facility for other services. Therefore, it is better if the concerned bodies work on improving awareness of adolescents and youth towards SRH services and integrating these services into other routine services.

NEED OF STUDY

Adolescent girls are chosen for the study with the intention that awareness regarding anemia among adolescent girls can improve their health thereby maternal morbidity and mortality especially during pregnancy can be improved. There are only few studies focusing on adolescent girls who are anemic.

During community health nursing posting period, the investigator recognized that many adolescents, beneficiaries through anganwadi were not using ragi flour in Pallihottam areas and they were used to dump the ragi flour into the waste. The investigator felt the need for assessing the prevalence of anemia in adolescents and identify whether they are utilizing Adolescent health services under RMNCH+A

OBJECTIVE OF THE STUDY

AIMS: to assess the prevalence of anemia and utilization of adolescent health services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.

OBJECTIVE OF THE STUDY

- To assess the prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.
- To find correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.

- To find the association between prevalence of anemia among adolescent girls and selected demographic variables.
- To find the association between utilization of Adolescent Health Services under RMNCH+ A among adolescent girls and selected demographic variables.

METHODOLOGY

Data collection is a process of acquiring and collecting information needed for the study from the subjects.³⁸

The data were collected after obtaining prior administrative permission and informed consent and assent from the participants and their parents. The data collection period extended from 17-04-2023 to 06-05-2023. The study was conducted in Community Health Centre, Pallithottam. Participants were selected by convenience sampling based on the inclusion and exclusion criteria. 100 samples were selected for the study from different nagars of Pallithottam.

Before collecting data from samples, brief introduction was given about the study and purpose of data collection was explained and consent and assent were taken from parents and participants. Blood samples were collected in EDTA container for Hemoglobin estimation and the checklist for utilization was administered to the participants. Blood samples were given to laboratory to estimate hemoglobin level and on the next day blood reports were collected from the laboratory and handed over to the samples with an information pamphlet regarding anemia and its prevention. The above procedure was repeated with the other groups.

ANALYSIS AND INTERPRETATION

Section A:

Description of sample characteristics.

N =100

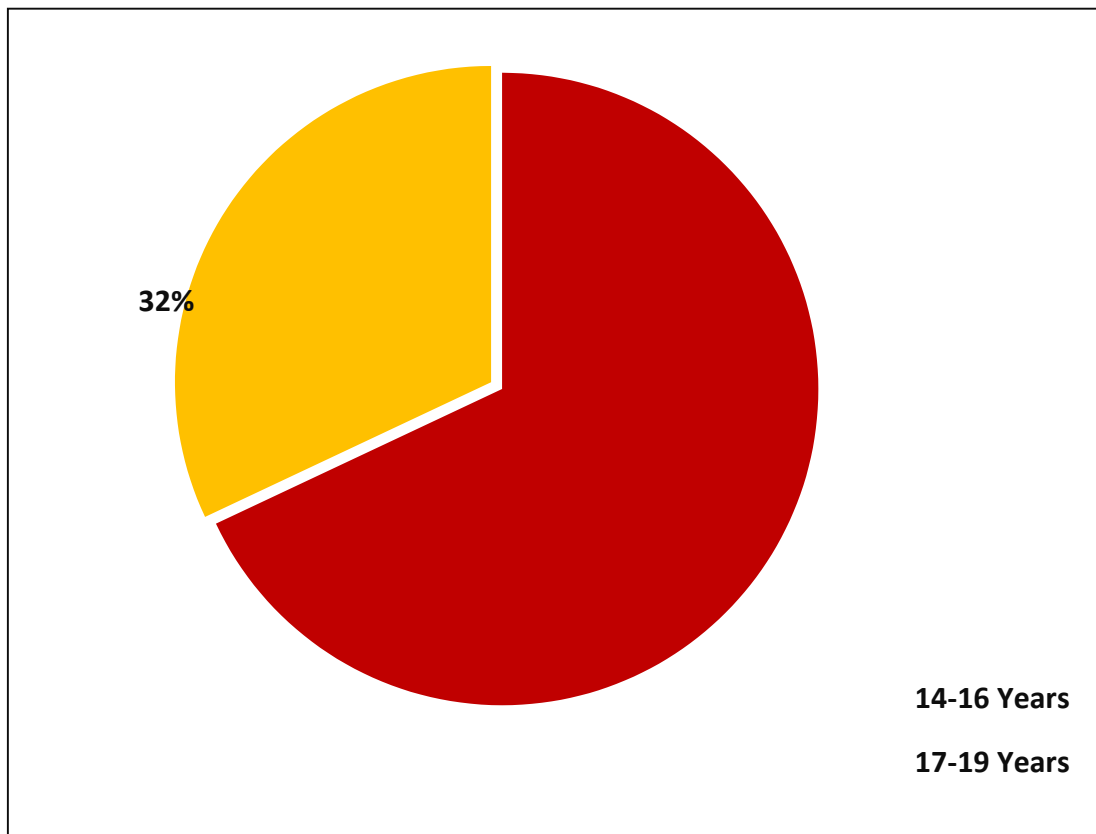


Fig 1: Percentage wise distribution of sample according to age in years

The data in the figure shows that 68% of sample belongs to 14-16 years of agegroup and 32% of sample belongs to 17-19 years of age group.

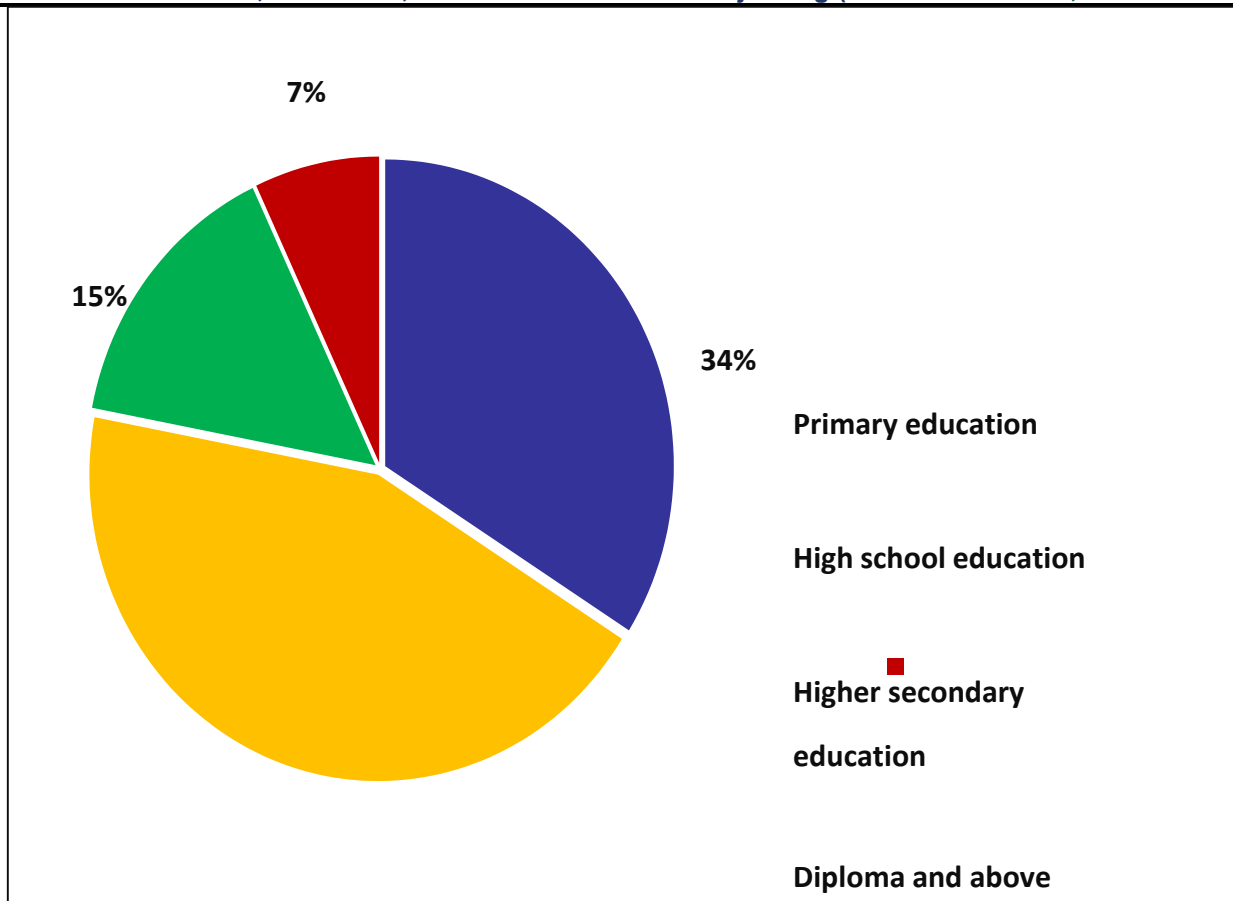


Fig 2: Percentage wise distribution of sample according to educational status of father

The data in the figure shows that educational status of father, 34% of sample have primary education, 44% have high school education, 15% have higher secondary education, 7% of diploma and above education

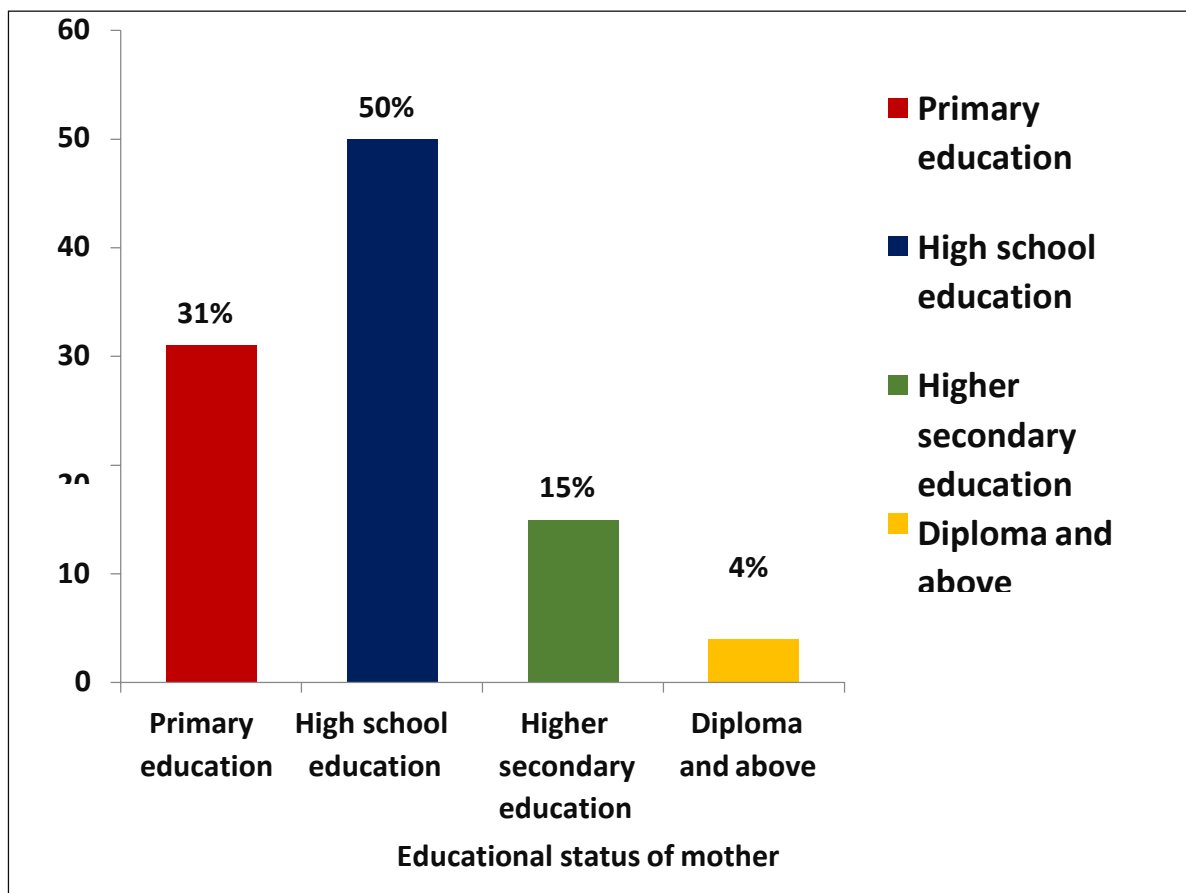


Fig 3: Percentage wise distribution of sample according to educational status of mother

The data in the figure shows that 50% of mothers have high school education, 31% have primary education.

15% mothers have higher secondary education and 4 % have diploma and above educational status

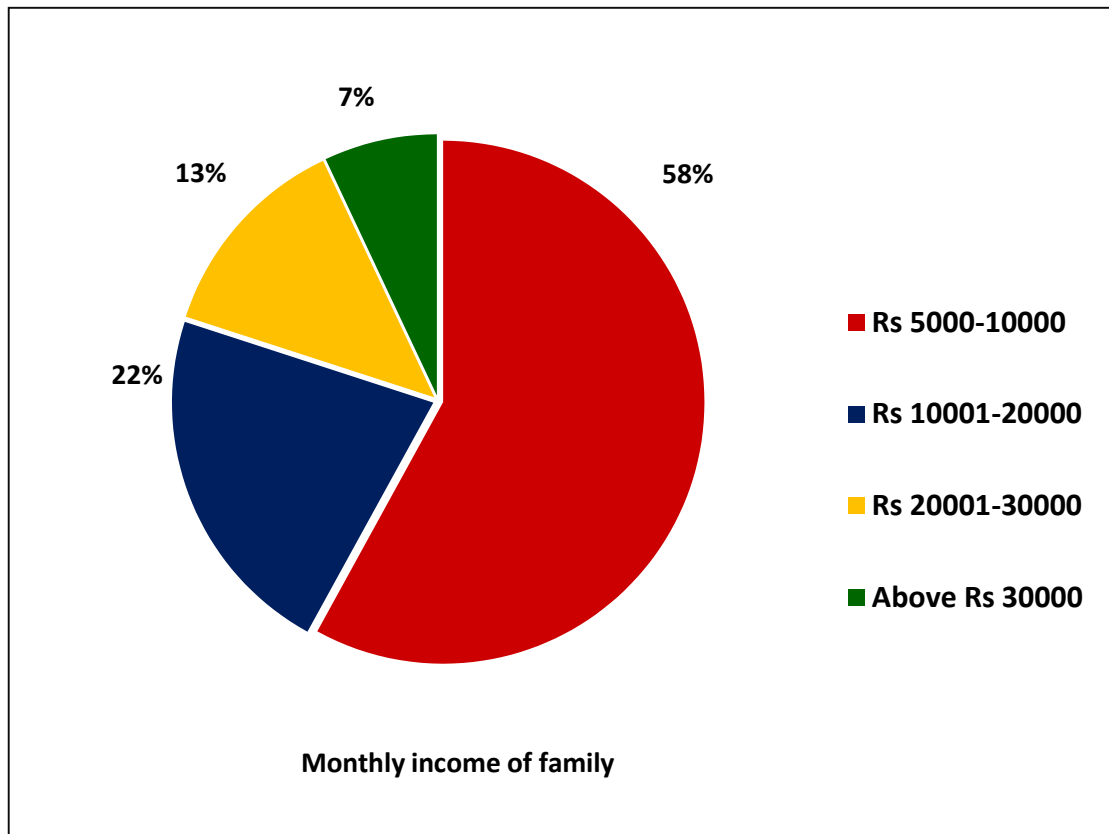


Fig 4: Percentage wise distribution of sample according to monthly income of family

The data in the figure shows that 58% of sample have monthly family income of Rs 5000-10000, 22% belongs to Rs 10001-20000, 13% belongs to Rs 20001-30000 and 7% of sample belongs to above Rs 30000 of monthly family income.

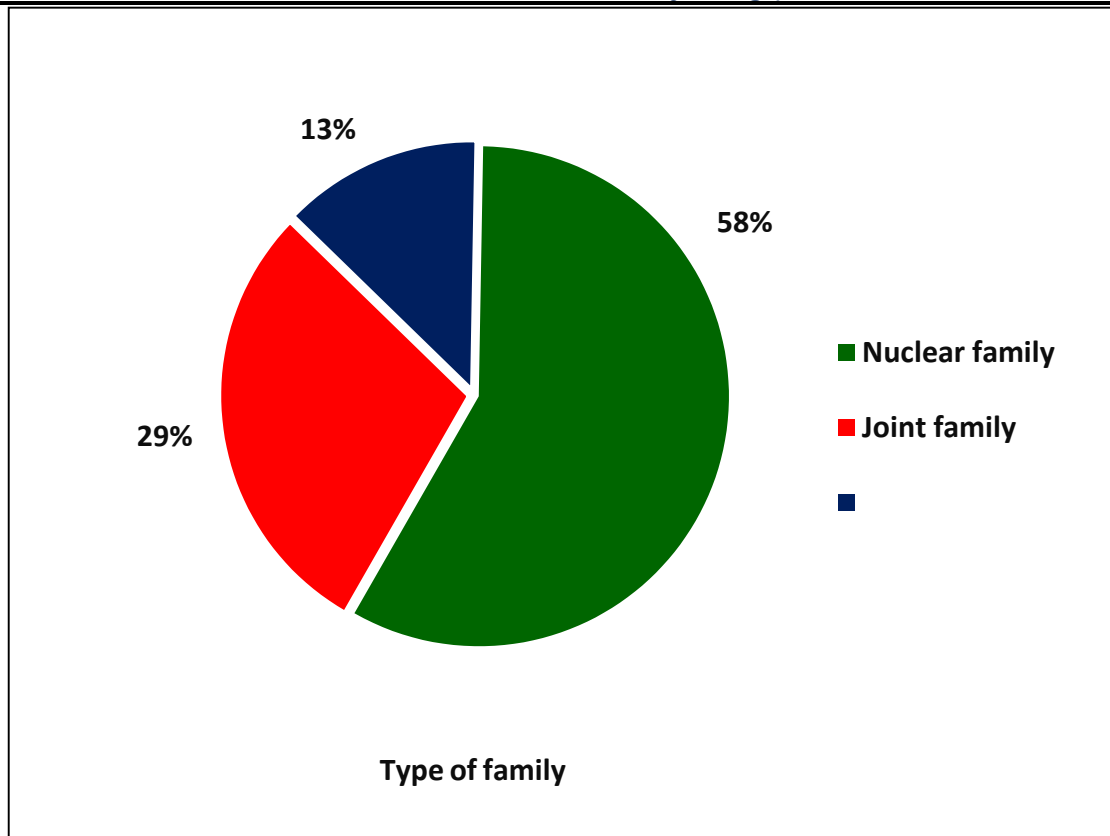


Fig 5: Percentage wise distribution of sample according to type of family

The data in this figure shows that 58% of sample belongs to nuclear family, 29% to joint family and 13 % belongs of extended family

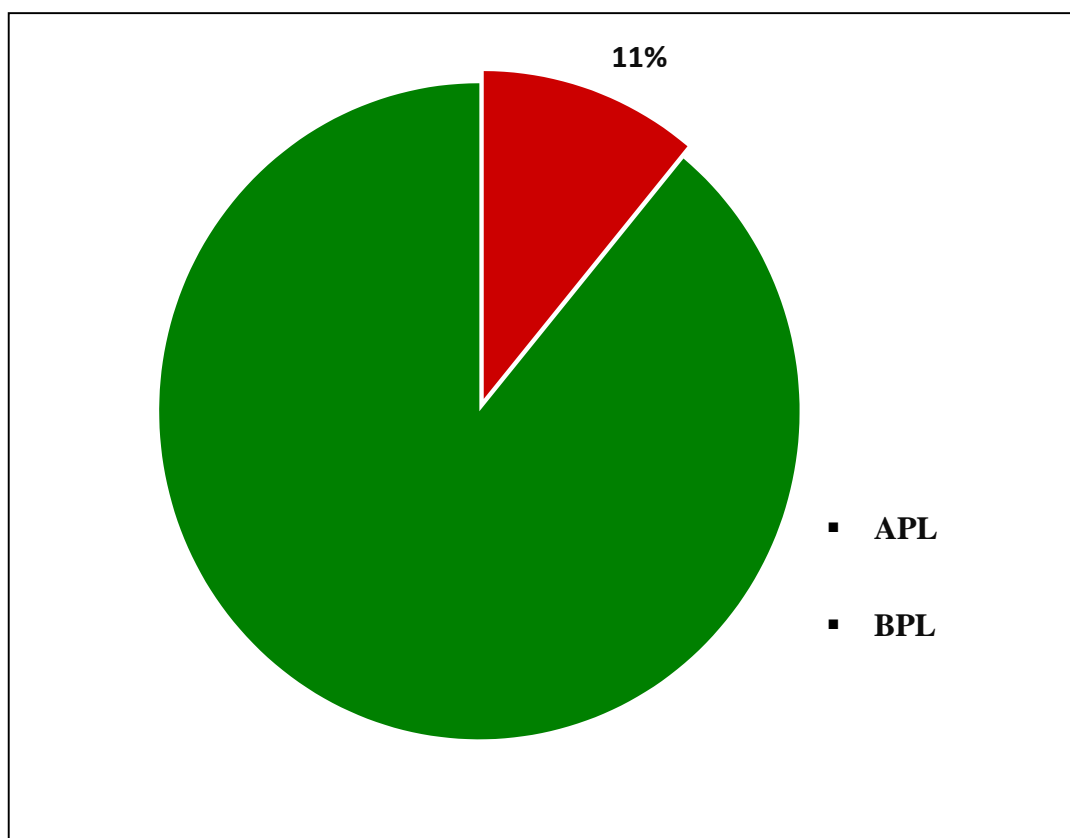


Fig 6: Percentage wise distribution of sample according to economic status as per government norms

The data in this figure shows that 89% of sample have the economic status of BPL and 11% of sample have economic status of APL

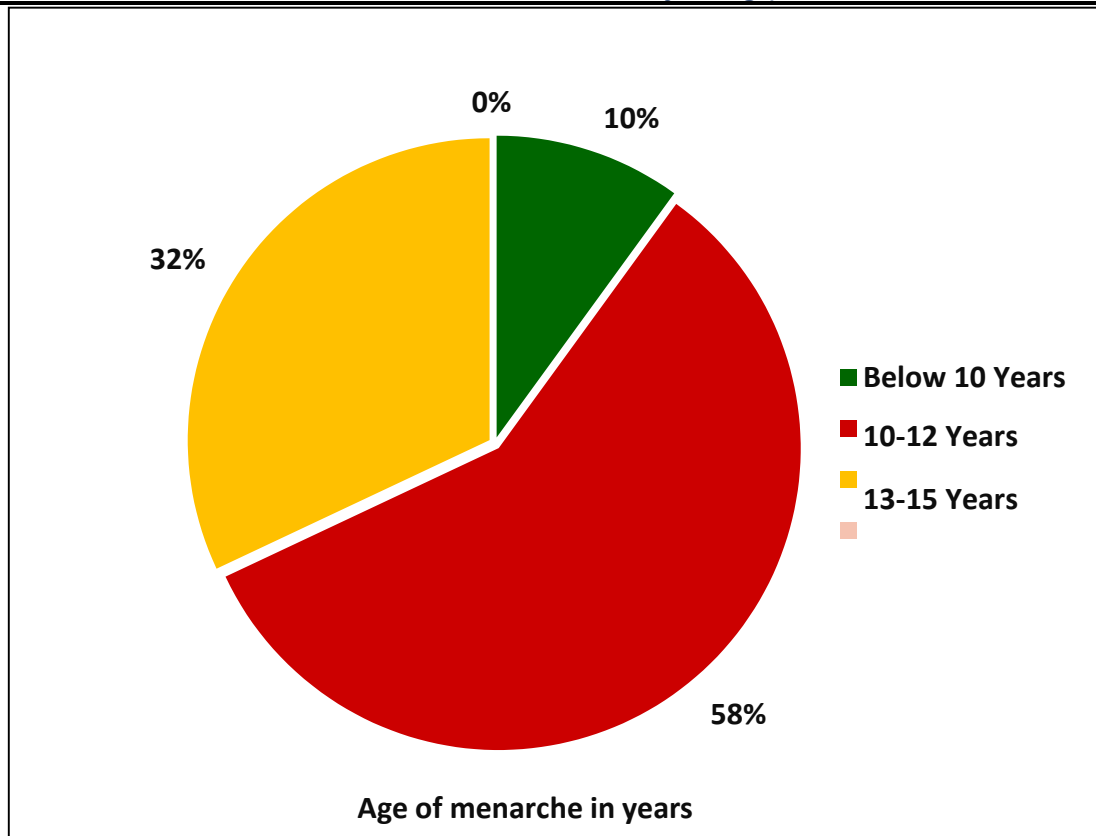


Fig 7: Percentage wise distribution of sample according to age of menarche in years

The data in this figure shows that 58% of sample attained menarche at the age between 10-12 years, 32% of sample attained at the age between 13-15 years, 10% of sample attained menarche at below 10 years and no sample resembles above 15 years

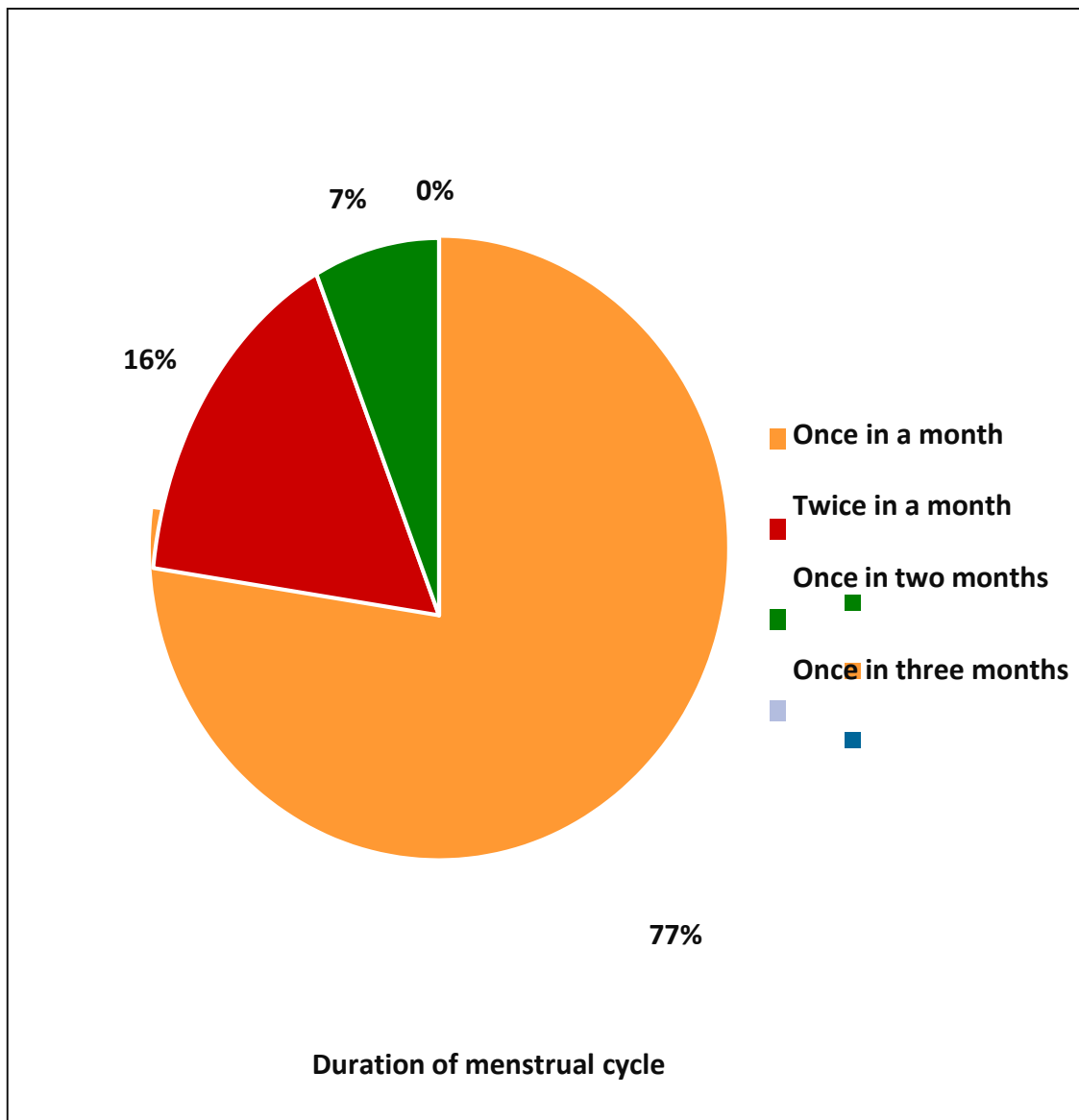


Fig 8: Percentage wise distribution of sample according to duration of menstrual cycle

The data in this figure shows that in 77% of sample, the menstrual cycle occurs once in a month, in 16% of the sample twice in a month, in 7% of the sample once in two months and none belong to the category of once in three months.

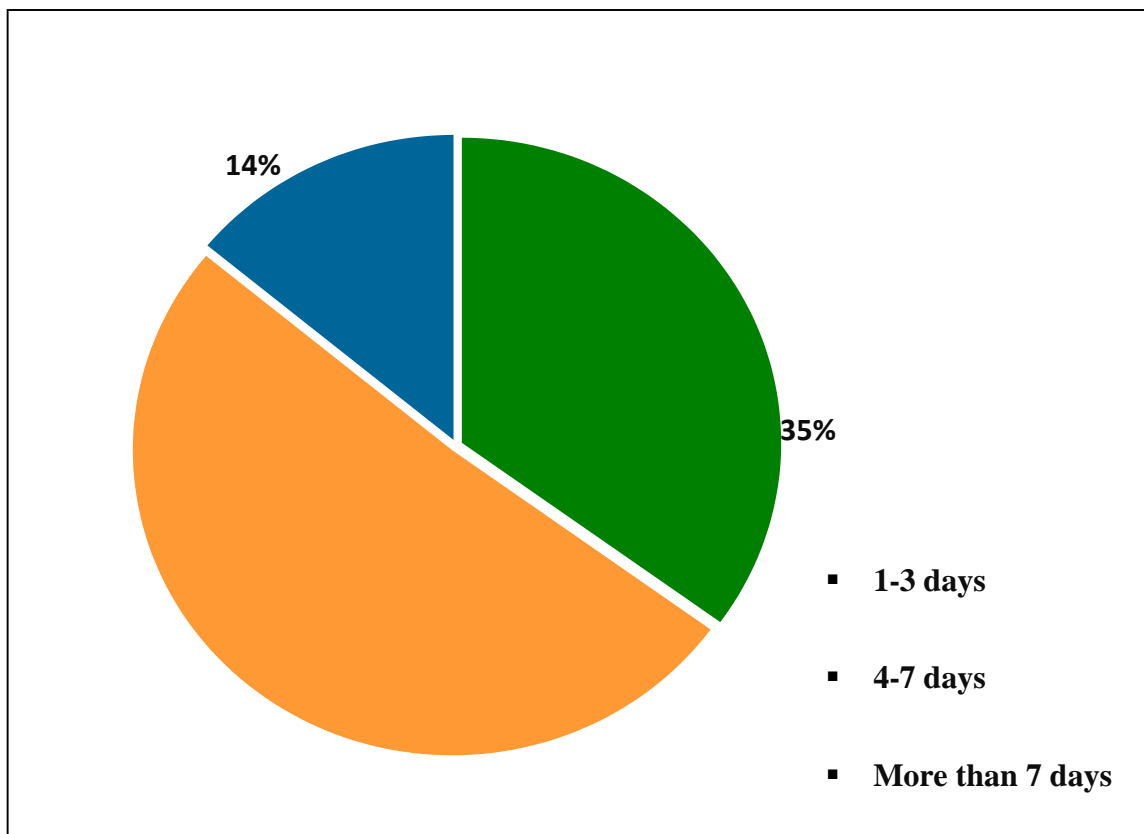


Fig 9: Percentage wise distribution of sample according to average duration of menstrual flow

The data in this figure shows that 51% sample having average duration of menstrual flow lies between 1-3 days, 35% have duration between 4-7 days, 14% have duration of menstrual cycle more than 7 days.

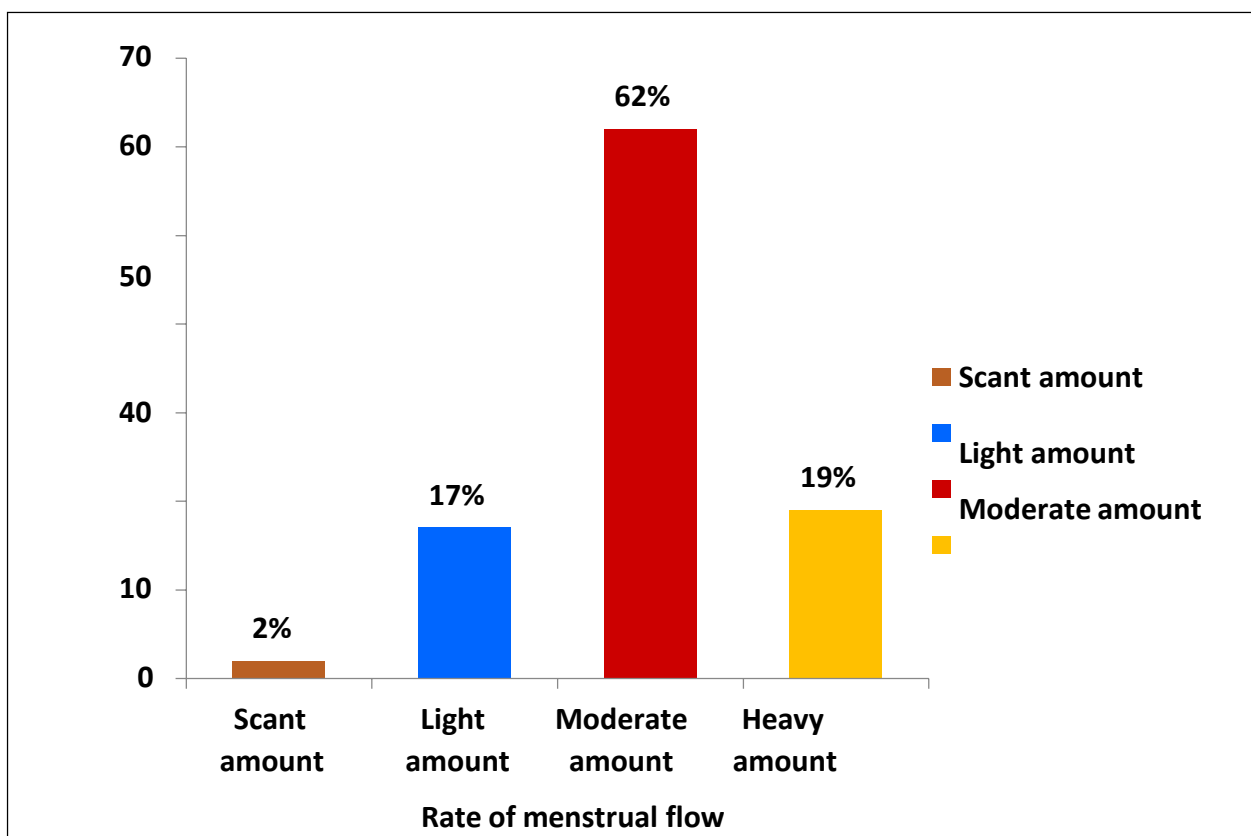


Fig 10: Percentage wise distribution of sample according to rate of menstrual flow

The data in this figure shows that 62% of samples have moderate rate of menstrual flow, 19% have light amount, 17% of have heavy amount and 2% of samples have scant amount of menstrual flow.

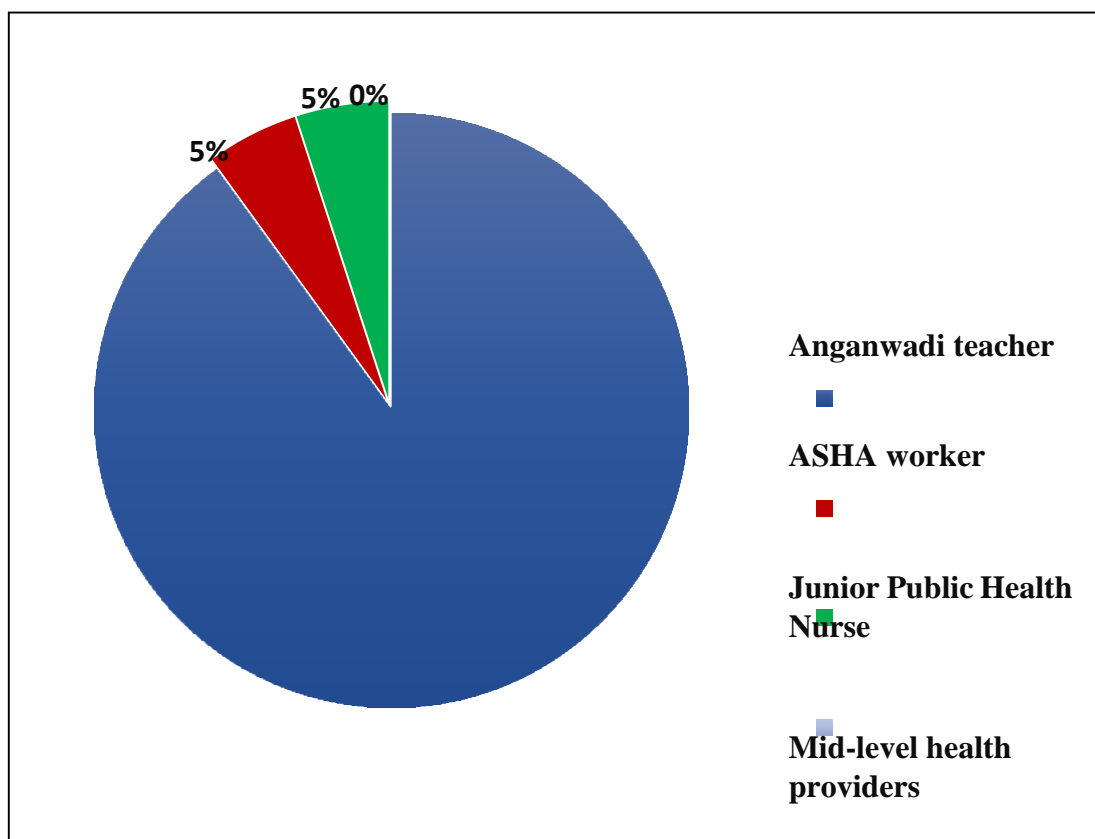


Fig 11: Percentage wise distribution of sample according to source of information regarding adolescent health services

The data in this figure shows that 90% of sample have source of information regarding adolescent health services through anganwadi teacher, 5% of sample having information from both ASHA worker and Junior Public Health Nurse and no one has information through Mid-level health providers.

Section B: Prevalence of anemia among adolescent girls at coastal areas of Kollam district

N=100

Level of Anemia	Frequency (f)	Percentage (%)
Non-Anemic (≥ 12 gm/dl)	25	25%
Mild anemia (10 to <12 gm/dl)	49	49%
Moderate anemia (7 to <10 gm/dl)	26	26%
Severe anemia (<7 gm/dl)	0	0%

The table 2 shows that 49% of sample have mild anaemia, and 26% of sample have moderate anaemia, no sample with severe anaemia and 25% of sample have normal haemoglobin level. Out of 100 sample, the prevalence rate of anemia shows 75%.

Section C: Utilization of Adolescent Health Services under RMNCH+A among adolescent girls at coastal areas of Kollam district

Section C (1): Item wise analysis

Section C (2): Category wise Analysis

Category I: Utilization of general services by adolescent health services under RMNCH+A

Score Key for Utilization of general services by adolescent health services under RMNCH+A is 0-4: Low utilization, 5-8: Moderate utilization and 9-12: High utilization.

N=100

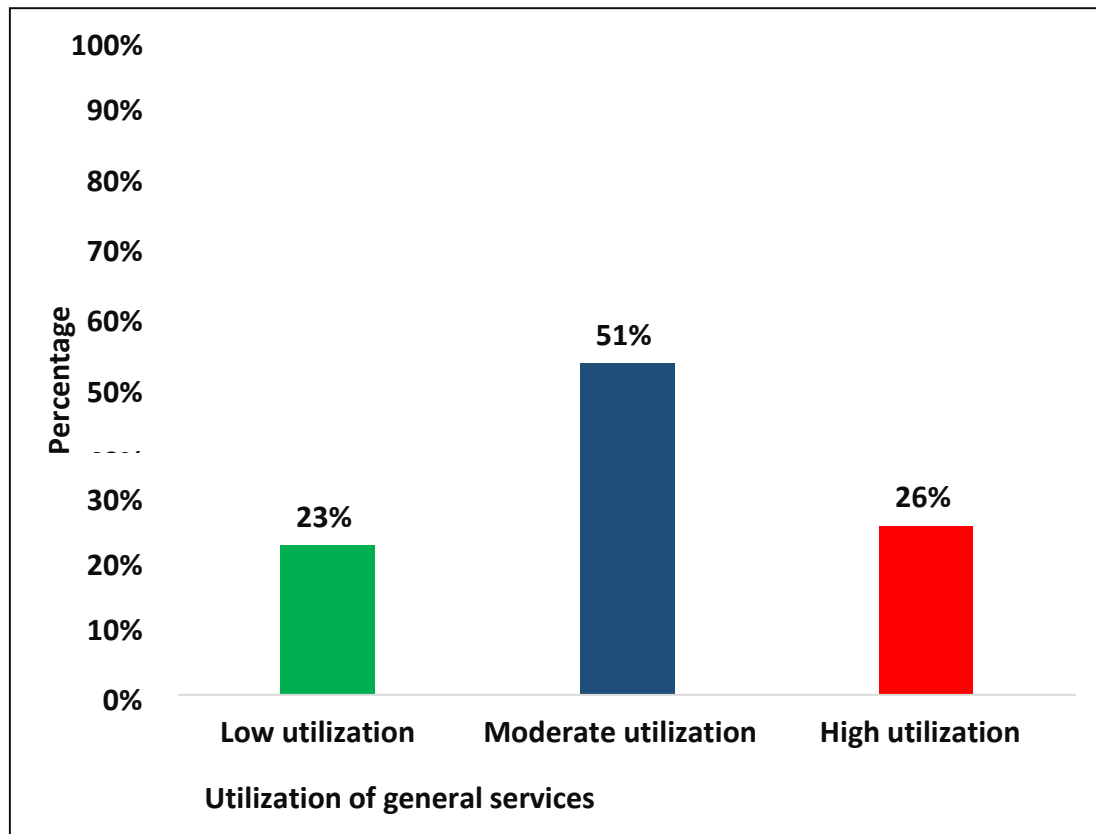


Fig 12: Percentage wise distribution of Utilization of general services by adolescent health services under RMNCH+A among adolescent girls at coastal areas of Kollam district

The data in this figure shows that out of 100 sample, 26% sample reported high utilization, **51% sample reported moderate utilization** and 23% of sample reported low utilization of general services by adolescent health services under RMNCH+A.

Category II: Utilization of Weekly Iron and Folic acid supplementation by adolescent health services under RMNCH+A

Score Key for Utilization of Weekly Iron and Folic acid supplementation by adolescent health services under RMNCH+A is 0-2: Low utilization, 3- 4: Moderate utilization and 5-6: High utilization.

N=100

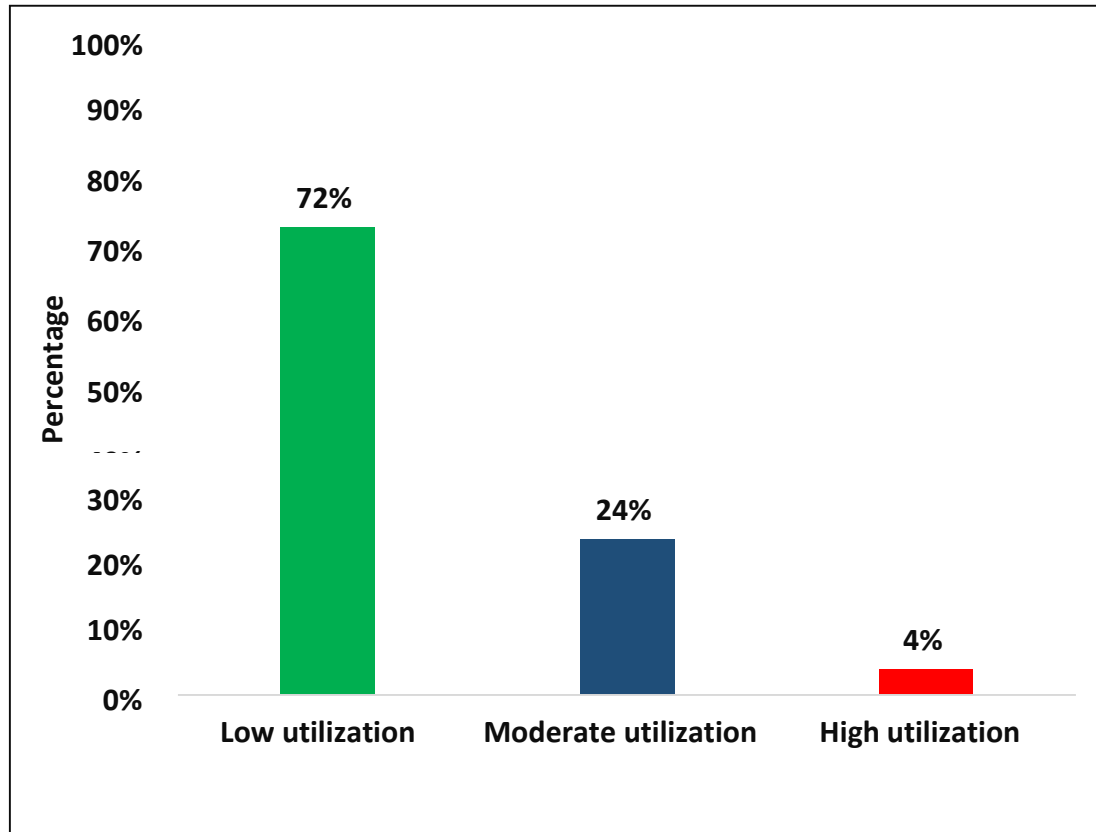


Fig 13: Percentage wise distribution of Utilization of Weekly Iron and Folic acid supplementation by adolescent health services under RMNCH+A among adolescent girls at coastal areas of Kollam district

The data in this figure shows that out of 100 samples, 4% sample reported highutilization, 24% sample reported moderate utilization and **72% of sample reported lowutilization of Weekly Iron and Folic acid supplementation** by adolescent health services under RMNCH+A.

Category III: Utilization of supplies for Menstrual Hygiene by adolescent health services under RMNCH+A

Score Key for Utilization of supplies for Menstrual Hygiene by adolescent healthservices under RMNCH+A is 0-3: Low utilization; 4-7: Moderate utilization and 8-10:High utilization.

N=100

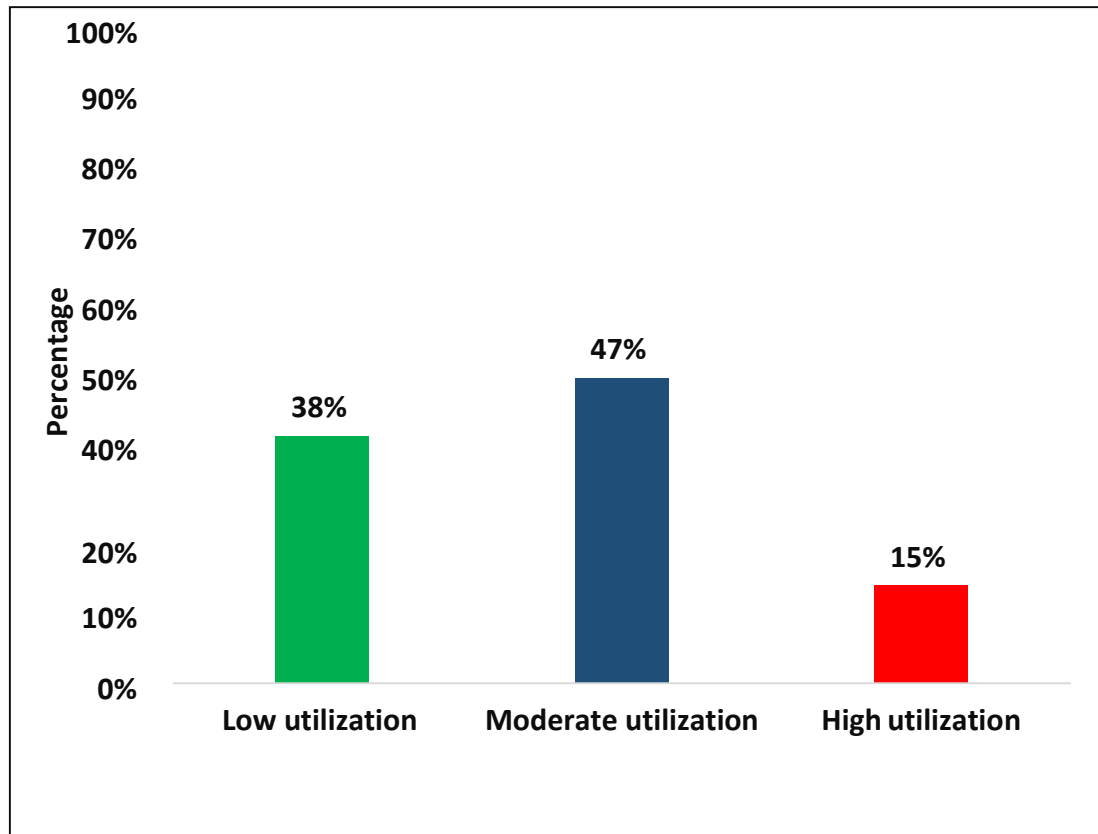


Fig 14: Percentage wise distribution of Utilization of supplies for Menstrual Hygiene by adolescent health services under RMNCH+A among adolescent girls at coastal areas of Kollam district

The data in this figure shows that out of 100 sample, 15% sample reported high utilization, **47% sample reported moderate utilization** and 38% of sample reported low utilization of supplies for Menstrual Hygiene by adolescent health services under RMNCH+A.

Category IV: Utilization of supplies for the promotion of Nutrition by adolescent health services under RMNCH+A

Score Key for Utilization of supplies for the promotion of Nutrition by adolescent health services under RMNCH+A is 0-5: Low utilization; 6-11: Moderate utilization and 12-16: High utilization.

N=100

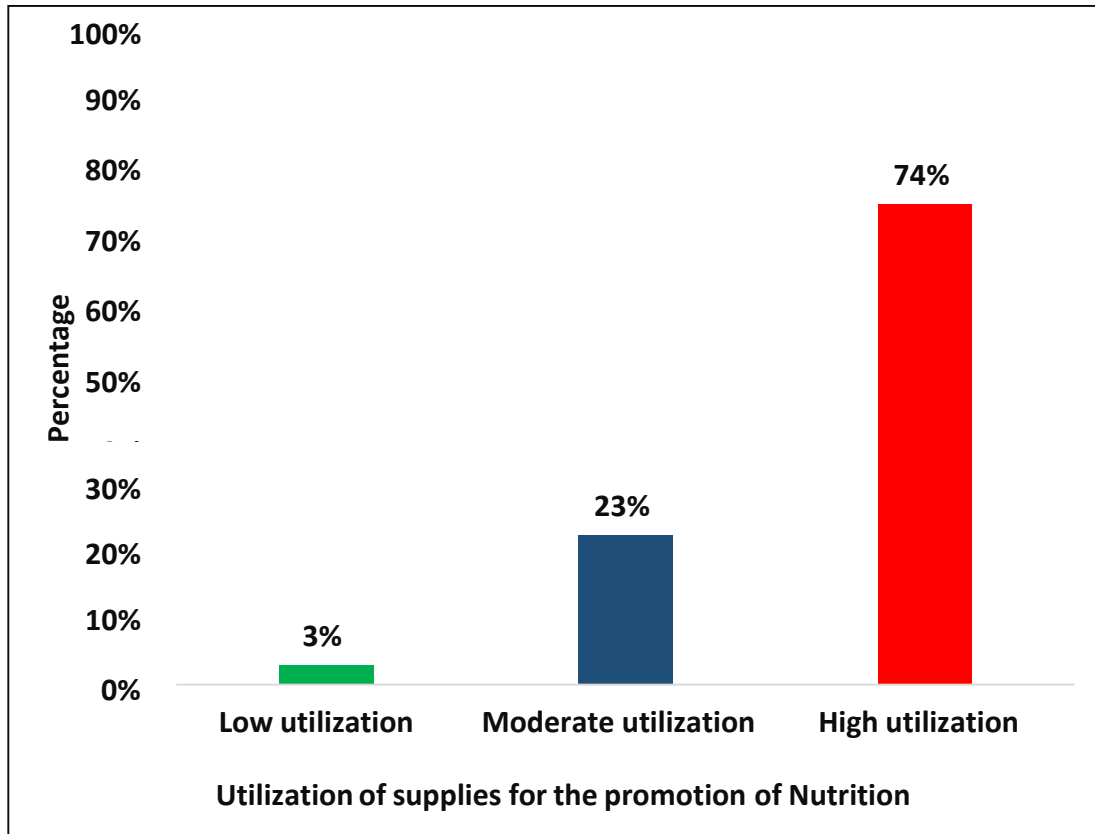


Fig 15: Percentage wise distribution of Utilization of supplies for the promotion of Nutrition by adolescent health services under RMNCH+A among adolescent girls at coastal areas of Kollam district

The data in this figure shows that out of 100 sample, **74% sample reported high utilization**, 23% sample reported moderate utilization and 3% of sample reported low utilization of supplies for the promotion of Nutrition adolescent health services under RMNCH+A.

Category V: Utilization of tablets for the deworming by adolescent health services under RMNCH+A

Score Key Utilization of tablets for the deworming by adolescent health services under RMNCH+A is 0 - 2: Low utilization, 3 - 4: Moderate utilization and 5 - 6: High utilization.

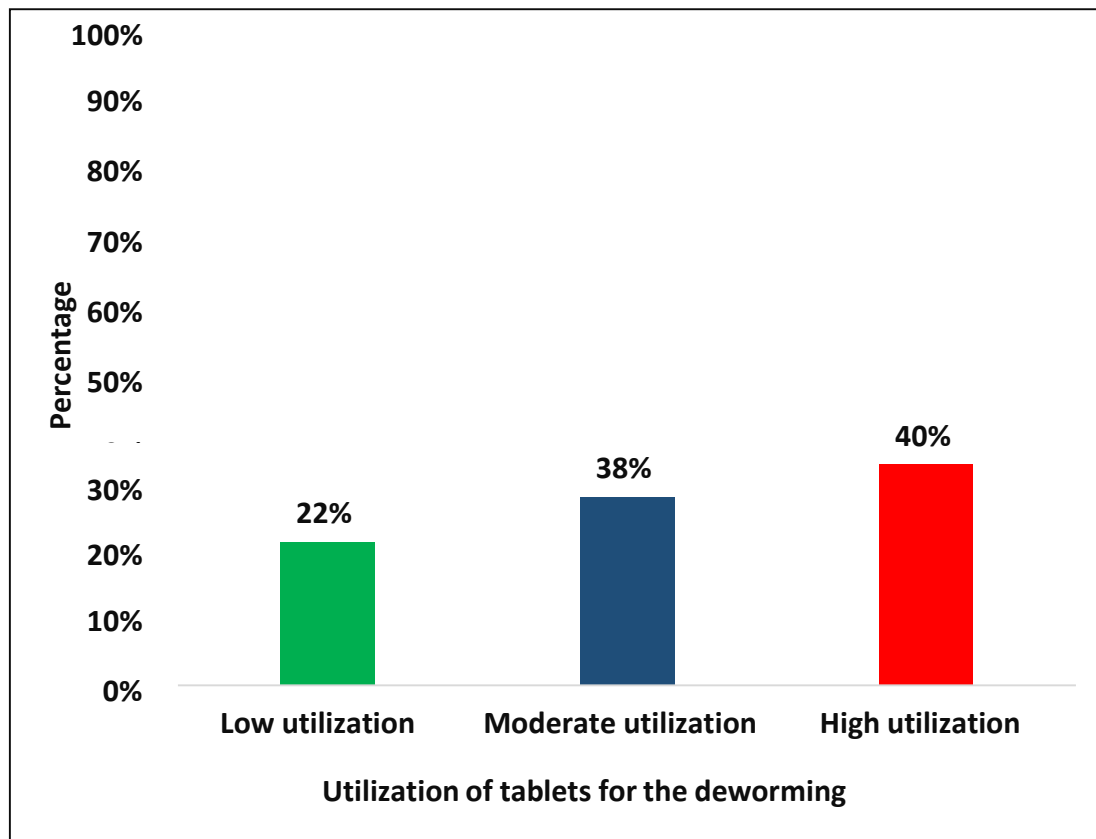
N=100

Fig 16: Percentage wise distribution of Utilization of tablets for the deworming by adolescent health services under RMNCH+A among adolescent girls at coastal areas of Kollam district

The data in this figure shows that out of 100 sample, **40% sample reported high utilization**, 38% sample reported moderate utilization and 22% of sample reported low utilization of supplies for the promotion of Nutrition adolescent health services under RMNCH+A.

Section C (2): Total score Analysis

Table 4: Frequency and percentage distribution of Utilization of adolescent healthservices under RMNCH+A among adolescent girls at coastal areas of Kollam district

N=100

Utilization	Frequency (f)	Percentage (%)
Low utilization (0 - 16)	8	8%
Moderate utilization (17 - 33)	63	63%
High utilization (34 - 50)	29	29%

The table 4 shows that out of 100 sample, 29% sample reported high utilization,63% sample reported moderate utilization and 8% of sample reported low utilization of adolescent health services under RMNCH+A.

Section D: Correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areasof Kollam district

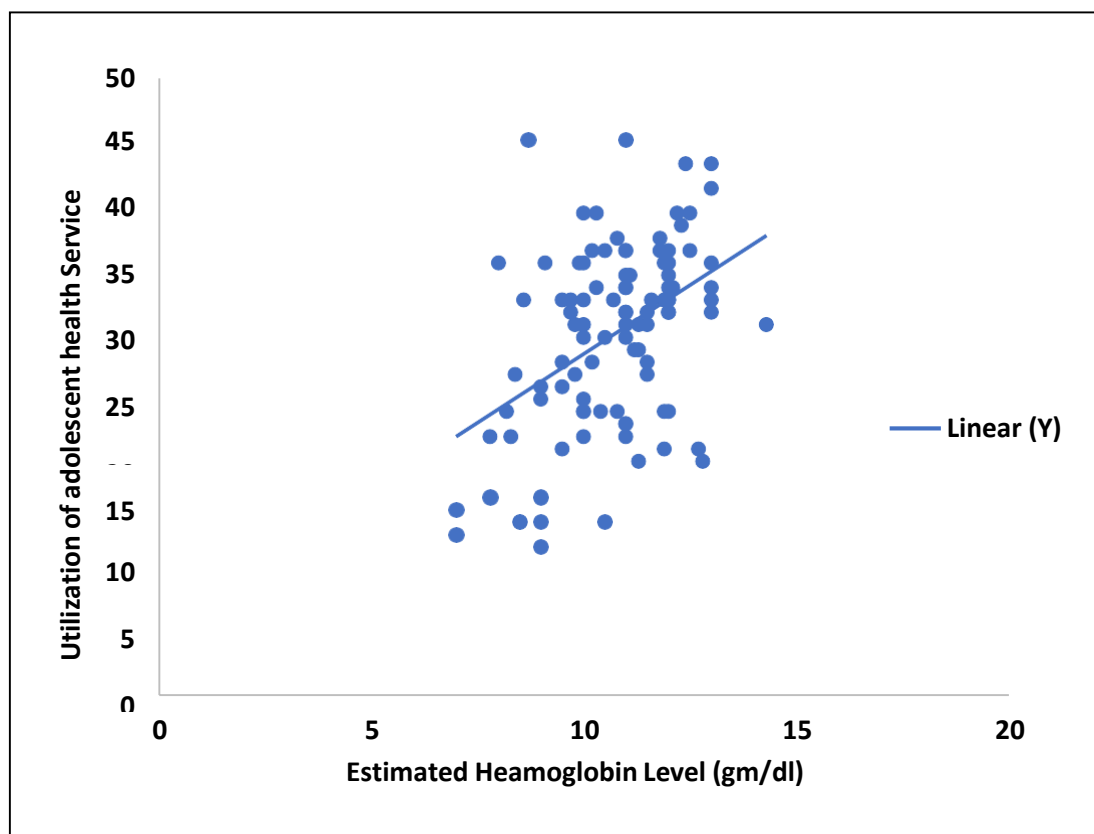


Fig:19 Correlation between prevalence of anemia and utilization of adolescent health services under RMNCH+A among adolescent girls

The data in this figure shows that, there was moderate positive correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district. The calculated 'r' value for the prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district was 0.44.

RESULTS:**Objectives of the study:**

- To assess the prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.
- To find correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.
- To find the association between prevalence of anemia among adolescent girls and selected demographic variables.
- To find the association between utilization of Adolescent Health Services under RMNCH+ A among adolescent girls and selected demographic variables.

MAJOR FINDINGS OF THE STUDY**Section A: Description of sample characteristics Description of demographic variables under study**

- The percentage distribution according to age showed that a 68% of sample belonged to 14-16 years and 32% of sample belonged to 17-19 years of age group.
- The data collected on educational status of father showed that a 44% had high school education, 34% of sample had primary education, 15% belonged to higher secondary education and only 7% had diploma or above education
- The data collected on educational status of mother showed that 50% of mother belonged to high school education, 31% belonged to primary education, 15% belonged to higher secondary education and only 4% belonged to diploma or above educational status
- Considering the monthly income of family. It was found that 58% of samples had monthly family income of Rs 5000-10000, 22% had Rs 10001-20000, 13% had Rs 20001-30000 and only 7% of samples had an income above Rs 30000.
- 58% of samples belonged to nuclear family, 29% to joint family and only 13% belonged to extended family.
- The data showed that good majority (89%) of samples belonged to the economic status of BPL and only 11% of samples belonged to economic status of APL.
- The data collected on age of menarche attained showed that 58% of samples attained menarche at the age between 10-12 years, 32% of samples attained menarche at the age between 13-15 years, 10% of samples attained menarche at below 10 years
- A high percentage of samples (77%) had duration of menstrual cycle once in a month, 16% of samples had twice in a month, 7% samples had duration of once in two months and no one had once in three-month duration.
- The data showed that 51% samples had duration of menstrual flow as 1-3 days, 35% of samples had duration of 4-7 days, 14% had duration of menstrual cycle more than 7 days.

- 62% of samples had moderate rate of menstrual flow, 19% had light flow, 17% of had heavy flow and only 2% of samples had scant menstrual flow.
- The highest percentage of the samples (90%) had source of information regarding adolescent health services through anganwadi teacher and negligible (5%) of samples had information from ASHA worker and Junior Public Health Nurse and no one received information through id-level health providers.

Section B: Prevalence of anemia among adolescent girls at coastal areas of Kollam district

The result showed that 49% of sample were affected with mild anemia, and 26% of sample had with moderate anemia, no sample had severe anemia and 25% of sample had normal haemoglobin level. The result for prevalence rate of anemia was [75%].

Section C: Utilization of Adolescent Health Services under RMNCH+A among adolescent girls at coastal areas of Kollam district

Description of category wise utilization of adolescent health services

Category I: Utilization of general services by adolescent health services under RMNCH+A

The data showed that out of 100 sample, utilization of general services by adolescent health services under RMNCH+A 51% sample reported moderate utilization, 26% of sample reported high utilization, and 23% of sample reported low utilization of general services.

Category II: Utilization of Weekly Iron and Folic acid supplementation by adolescent health services under RMNCH+A

The data showed that out of 100 sample, majority (72%) of sample reported low utilization, 24% sample reported moderate utilization and, only 4% of sample reported high utilization of Weekly Iron and Folic acid supplementation by adolescent health services under RMNCH+A.

Category III: Utilization of supplies for Menstrual Hygiene by adolescent health services under RMNCH+A

The data showed that out of 100 sample, 47% sample reported moderate utilization, 38% of sample reported low utilization and only 15% sample reported high utilization of supplies for Menstrual Hygiene by adolescent health services under RMNCH+A.

Category VI: Utilization of supplies for the promotion of Nutrition by adolescent health services under RMNCH+A

The data showed that out of 100 sample, a good majority (74%) of sample reported high utilization, 23% sample reported moderate utilization and only 3% of sample reported low utilization of supplies for the promotion of Nutrition adolescent health services under RMNCH+A.

Category V: Utilization of tablets for the deworming by adolescent health services under RMNCH+A

The data showed that out of 100 sample, 40% sample reported high utilization 38% sample reported moderate utilization, and 22% of sample reported low utilization of supplies for the promotion of Nutrition adolescent health services under RMNCH+A.

Section C(2): Total score Analysis of utilization of adolescent health services under RMNCH+A

The data showed that out of 100 sample, 63% sample reported moderate utilization, 29% sample reported high utilization, and only 8% of sample reported low utilization of adolescent health services under RMNCH+A.

Section D: Correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district

The data showed that there was moderate positive correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district. The calculated 'r' value for the prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A was 0.44 among adolescent girls at selected coastal areas of Kollam district

Section E: Association between prevalence of anemia and selected demographic variables

The association between prevalence of anemia and selected demographic variables such as age, education of parents, type of family, monthly income of family, economic status as per Government norms, age of menarche in years, duration of menstrual cycle, rate of menstrual flow, source of information regarding adolescent health services were computed by chi square. As the calculated chi-square value of all demographic variables were less than table value at 0.05 level of significance except source of information regarding adolescent health services. There was significant association between prevalence of anemia and source of information regarding adolescent health services. There was no significant association between prevalence of anemia and selected demographic variables such as age, education of parents, monthly income of family, economic status of family, age of menarche, type of family, duration of menstrual cycle, average duration of menstrual flow and rate of menstrual flow.

Section F: Association between utilization of Adolescent Health Services under RMNCH+A among adolescent girls and selected demographic variables

The association between utilization of adolescent health services under RMNCH+A and selected demographic variables such as age, education of parents, type of family, monthly income of family, economic status as per Government norms, age of menarche in years, duration of menstrual cycle, rate of menstrual flow, source of information regarding adolescent health services were calculated by chi square. As the calculated chi-square value of all demographic variables were less than table value at 0.05 level of significance except education of father, there was significant association between demographic variable 'education of father' and utilization of adolescent health services. There was no significant association between utilization of adolescent health services under RMNCH+A and selected demographic variables such as age, education of mother, monthly income of family, economic status of family, age of menarche, type of family, duration of menstrual cycle, average duration of menstrual flow, rate of menstrual flow, source of information.

Discussion

To assess the prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.

The findings of the present study showed that prevalence rate of anemia was 75% among selected samples of adolescent girls at selected coastal areas of Kollam district.

The findings of the present study was supported by a cross sectional study conducted to assess the prevalence of anemia among adolescent girls who attained menarche.⁴¹ In the reference study, the researcher selected 272 participants who enrolled for the study, while in the present study the investigator selected 100 participants. In the reference study, the hemoglobin level was assessed by using a digital hemoglobinometer, likewise in the present study also the investigator used a laboratory method. In the referent study, the prevalence of anemia was high (71.7%), similarly in the present study also participants had high prevalence rate of anemia (75%). The findings of the present study are consistent with above mentioned studies and highlighted the need to assess the prevalence of anemia among adolescent girls

The findings of the present study showed that the majority of participants [63%] had moderate utilization of adolescent health services under RMNCH+A at selected coastal areas of Kollam district.

The findings of the present study was supported by a field based cross-sectional study conducted to assess the knowledge and extent of utilization of services under RMNCH+A programme among adolescent girls.⁴² In the reference study, the researcher selected 142 adolescent girls while in the present study the investigator selected 100 participants. In the reference study the utilization was assessed by using pre-tested, Self designed, semi-structured questionnaire and by in-depth interview, likewise in the present study also the investigator used a self structured checklist. In the referent study the participants were aware about some services available under RMNCH+A. In spite of the adequate supply, one third of girls were not consuming IFA. None of the AWWs provided any health education to the beneficiaries similarly in the present study participants had moderate utilization of adolescent health services. In both the studies, individuals showed moderate utilization. The findings of the present study is consistent with above mentioned study and highlighted the need to assess the utilization of adolescent health services under RMNCH+A among adolescent girls

To find correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.

The findings of the study showed that there was moderate positive correlation between prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district.

The findings of the present study was supported by a cross sectional population-based study with exploratory and descriptive study design conducted to assess the level of anemia and nutritional status among the Baiga women and adolescent girls.⁴³ In the reference study, 300 Baiga women of reproductive age group and 360 Baiga adolescent girls were participated while in the present study the sample consists of 100 participants. In the reference study for assessing the nutritional status and health risks, BMI was calculated by taking measurements of height and weight and Haemo Cue method was used, likewise in the present study

laboratory method and a self-structured checklist was used. In the referent study the prevalence of anemia among Baiga adolescent girls was

found to be high and majority of Baiga women had low BMI and nutritional status. In both the studies individuals showed a high prevalence rate of anemia and low utilization of adolescent health services. The findings of the present study is consistent with abovementioned studies and highlighted the need to assess the effect of utilization of health services with prevalence of anemia among a adolescent girls

To find the association between prevalence of anemia among adolescent girls and selected demographic variables.

The association between prevalence of anemia and selected demographic variables such as age, education of parents, type of family, monthly income of family, economic status as per Government norms, age of menarche in years, duration of menstrual cycle, rate of menstrual flow, source of information regarding adolescent health services were computed by chi square. As the calculated chi-square value of all demographic variables were less than table value at 0.05 level of significance except source of information regarding adolescent health services. There was significant association between prevalence of anemia and source of information regarding adolescent health services.

The findings of the present study were supported by a study conducted to assess the prevalence of anemia and the associated factors among adolescent boys and girls and to investigate if there is any relationship between the demographic characteristics and knowledge.⁴⁴ The present study is descriptive study design while the reference study used a cross-sectional survey design. In the present study the researcher used structured questionnaire and checklist for data collection while in the referent study the researcher collected detailed information on family, media, community environment, assets acquired in adolescence, and transitions to young adulthood indicators by interview method. The referent study sample size was around 10,350 adolescents aged 10–

19 years while in the present study 100 adolescent girls were selected from Pallithottam. In the reference study prevalence of anemia was higher among adolescent girls than in boys. Lower education status, rural residence, late adolescence, no exposure to mass media, and stunting were the predictors of moderate/severe anemia among adolescents while in the present study the demographic variables except the source of information was not found to be statistically significant with prevalence of anemia.

To find the association between utilization of Adolescent Health Services under RMNCH+ A among adolescent girls and selected demographic variables.

The association between utilization of Adolescent health services under RMNCH+A among adolescent girls and selected demographic variables such as age, education of parents, type of family, monthly income of family, economic status as per Government norms, age of menarche in years, duration of menstrual cycle, rate of menstrual flow, source of information regarding adolescent health services were computed by chi square. As the calculated chi-square value of all demographic variables were less than table value at 0.05 level of significance except education of father and utilization of adolescent health services.

The findings of the present study were supported by a study conducted to assess the utilization of adolescent friendly health services and its associated factors among adolescents.⁴⁵ In the present study descriptive study design while the reference study a community based analytical cross-sectional study. In the present study the researcher used structured questionnaire and checklist for data collection while in the referent study data was collected through interview schedule by using semi-structured questionnaire. The referent study sample size was 380 adolescents while in the present study 100 adolescent girls were selected from Pallithottam. In the reference study, the age of participants, current educational status, educational status of mothers, ethnicity was significantly associated with utilization of adolescent friendly health services but sex, marital status, religion, type of school, educational status of father, distance of nearest health facility was not statistically significant with the utilization of adolescent friendly health services, while in the present study the demographic variable except the education of father was not found to be significantly associated with utilization of adolescent health services.

Summary

The present study was done to assess the prevalence of anemia and utilization of adolescent health services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district. Quantitative research approach with descriptive design was used. The study was conducted in different nagars of Pallithottam. The population included adolescent girls of 14-19 years of age group and sample consisted of 100 adolescents who met sampling and inclusion criteria. Convenient sampling was used to select the samples. The tools used was demographic proforma and self structured checklist regarding adolescent health services. The pilot study was conducted among 10 samples to confirm the feasibility of the study. The main study was conducted among 100 samples. Blood samples were collected by the investigator in the EDTA container to assess the hemoglobin level followed by administered the utilization checklist and the blood samples was sent to laboratory and assess the hemoglobin level. Reports were handed over to the samples with a inforamatory pamphlet about anemia and adolescent health services

CONCLUSION

The present study was aimed to assess the prevalence of anemia and utilization of Adolescent Health Services under RMNCH+A among adolescent girls at selected coastal areas of Kollam district

The present study revealed that utilization of adolescent health services had an impact on prevalence of anemia

RECOMMENDATIONS

- This study can be replicated in different community settings.
- A comparative study can be conducted to find the effect of utilization of adolescent health services and prevalence of anemia in different settings.
- Regular awareness programme to the public regarding anemia can be conducted.

- The study can be replicated using large sample. A large sample would help to create a higher statistical power that would increase the chance of finding statistically good significance to generalize

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