

ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAMME REGARDING KNOWLEDGE AND ATTITUDE ON NUTRITIONAL ANAEMIA AND ITS PREVENTION AMONG ADOLESCENT GIRLS

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ABSTRACT

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Introduction : Nutritional anaemia continues to be a major public health concern worldwide and remains one of the most prevalent nutritional deficiencies affecting adolescents. Despite decades of global and national efforts to reduce its burden, anaemia persists as a silent epidemic, particularly in low- and middle-income countries. Adolescents represent a nutritionally vulnerable population due to rapid growth, increased physiological demands, and lifestyle changes that often compromise dietary adequacy. The continued high prevalence of nutritional anaemia among adolescents clearly indicates that existing strategies are insufficient and that there is an urgent need to strengthen preventive approaches through effective, engaging, and age-appropriate educational interventions.

Material & Methods: The present study adopted a pre-experimental one-group pre-test post-test research design to assess the effectiveness of a Video Assisted Teaching Programme on knowledge and attitude regarding nutritional anaemia and its prevention among adolescent girls in a selected school of Gurugram, Haryana. A total of 60 adolescent girls were selected using a non-probability purposive sampling technique. Data were collected using a structured knowledge questionnaire and a structured five-point Likert attitude rating scale to assess the participants' knowledge and attitude regarding nutritional anaemia and its prevention. The research tool was validated by nursing experts and was found to be reliable, with a Cronbach's alpha reliability coefficient of 0.82. Data analysis was planned using both descriptive and inferential statistics, including frequency, percentage, mean, standard deviation, paired *t*-test, and chi-square test. Ethical clearance, administrative permission, informed consent, and

confidentiality of the participants were ensured throughout the study.

Result: The findings of the study revealed that in the pre-test, a majority of adolescent girls had average knowledge (53.3%) and a neutral attitude (60.0%) regarding nutritional anaemia and its prevention, while 30.0% had poor knowledge and 20.0% had an unfavourable attitude. The mean pre-test knowledge score was 10.8 ± 3.4 , and the mean pre-test attitude score was 49.2 ± 7.1 , indicating the need for educational intervention. Following the administration of the Video Assisted Teaching Programme, the mean post-test knowledge score increased to 17.6 ± 1.9 , and the mean post-test attitude score increased to 64.8 ± 5.2 . The improvements in both knowledge (mean difference = 6.8, $t = 14.72$) and attitude (mean difference = 15.6, $t = 12.84$) were found to be statistically significant ($p < 0.05$), demonstrating the effectiveness of the intervention. Furthermore, post-test knowledge was significantly associated with age, educational status, parents' educational status, monthly family income, prior information, and source of information, while post-test attitude showed significant associations with age, parents' educational status, monthly family income, and prior information regarding nutritional anaemia ($p < 0.05$).

Conclusion: Most participants had prior information regarding anaemia and exhibited average knowledge with a neutral attitude toward nutritional anaemia and its prevention at baseline. After the implementation of the video-assisted teaching programme, there was a significant improvement in both knowledge and attitude levels. The mean post-test scores for knowledge and attitude increased markedly and were statistically significant at $p < 0.05$, indicating the effectiveness

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of the intervention. Significant associations were found between post-test knowledge and variables such as age, educational status, parental education, monthly family income, prior information, and source of information. Similarly, post-test attitude levels were significantly associated with age, parental education, monthly family income, and prior information, while most other variables were not significantly associated.

INTRODUCTION

Nutritional anaemia continues to be a major public health concern worldwide and remains particularly important among children, adolescent girls, and women of reproductive age.^{1,2} Anaemia is a condition characterized by a haemoglobin concentration below the level required to meet physiological needs and can adversely affect physical functioning, cognitive development, well-being, and productivity.³ Anaemia has multiple causes, including nutritional deficiencies, infections, inflammation, gynaecological conditions, and inherited blood disorders.^{2,3} Despite decades of global and national efforts to reduce its burden, anaemia remains a substantial public health problem, particularly in low- and middle-income countries.^{2,4,5}

Adolescents represent a nutritionally vulnerable population because this period is characterized by rapid physical growth, sexual maturation, cognitive development, and increased nutritional requirements.^{6,7} Adolescence is also an important developmental stage during which nutritional deficiencies may have consequences for present health as well as future reproductive and maternal health.^{7,8} The nutritional demands of adolescence are increased by rapid growth and changes in body composition, while dietary inadequacy can contribute to micronutrient deficiencies.^{6,9} Therefore, adequate nutrition during adolescence is essential for healthy growth, development, and the establishment of appropriate dietary behaviours.^{6,7} Adolescence is a critical transitional period between childhood and adulthood. The World Health Organization defines adolescents as individuals aged 10–19 years.^{7,10} During this phase, adolescents experience substantial physical, psychological, cognitive, and social changes.^{7,10} Rapid growth during adolescence increases requirements for several nutrients, including iron, and inadequate intake can contribute to nutritional deficiencies.^{6,9} Adolescent dietary behaviours are influenced by individual preferences, family environment, socioeconomic conditions, cultural practices, food availability, peer influence, and access to nutrition information.^{6,9}

Nutritional anaemia among adolescents is an important public health concern because of its potential effects on growth, cognitive function, educational performance, physical capacity, and future health.^{2,5,11} Iron deficiency is the most

common nutritional cause of anaemia, although folate, vitamin B12 and other nutritional deficiencies can also contribute.^{2,3,11} WHO recognizes anaemia as a multifactorial condition and emphasizes that effective prevention requires identification and management of its underlying causes rather than relying on a single intervention.^{2,5} Adolescent girls are particularly vulnerable to iron deficiency and anaemia because increased nutritional requirements during growth occur together with iron loss through menstruation.^{12,13} Menstruating girls therefore require adequate dietary iron to compensate for physiological losses and support normal growth and development.^{12,13} Poor dietary diversity, inadequate intake of iron-rich foods, low socioeconomic status, and inadequate adherence to iron and folic acid supplementation can further increase the risk of anaemia among adolescent girls.^{14,15}

The burden of anaemia among adolescent girls in India remains high. A systematic review and meta-analysis of 35 studies involving 152,640 adolescent girls reported a pooled anaemia prevalence of 65.7% (95% CI 59.3–71.9%) among Indian adolescent girls, although substantial regional variation was observed.¹⁶ The high prevalence reported across Indian studies demonstrates that anaemia remains an important nutritional and public health problem among adolescent girls.^{16,17} A more recent systematic review also identified inadequate dietary iron intake, menstrual blood loss, poor sanitation, helminthic infections, low socioeconomic status, and inadequate adherence to iron-folic acid supplementation as important factors associated with anaemia among Indian adolescent girls.¹⁷

The problem is also significant from a global perspective. WHO estimates that more than 30% of women of reproductive age worldwide are anaemic, with at least half of this burden assumed to be attributable to iron deficiency in many settings.^{13,18} Menstruating adolescent girls are therefore an important target population for anaemia prevention programmes.^{12,13} WHO recommends iron supplementation strategies for adolescent girls in populations where anaemia is highly prevalent, along with broader nutrition and public health measures.^{12,19}

The burden of anaemia is not explained by iron deficiency alone. WHO emphasizes that anaemia can result from multiple nutritional, infectious, inflammatory, gynaecological, obstetric, genetic, and social determinants.^{2,5} Consequently, effective anaemia-control strategies should incorporate dietary improvement, micronutrient interventions, infection control, screening, appropriate treatment, health education, and improvement of access to health services.^{2,5}

India has implemented national strategies for prevention and control of anaemia among adolescent girls. The Weekly Iron and Folic Acid

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Supplementation (WIFS) programme was introduced to address anaemia among adolescents through iron-folic acid supplementation and related health education.²⁰ Earlier programme experience demonstrated the importance of combining knowledge generation, supplementation, programme evaluation, and intersectoral collaboration in adolescent anaemia control.²⁰ The evidence indicates that supplementation alone may not be sufficient and that sustained behavioural and educational approaches are also required.^{14, 20}

Nutrition education is therefore an important component of adolescent anaemia prevention. School-based programmes provide an opportunity to reach large numbers of adolescents during a period when health-related knowledge and behaviours are developing.^{6, 21} Educational interventions can provide information regarding the causes, signs and symptoms, dietary sources of iron, factors affecting iron absorption, menstrual health, prevention, and appropriate management of anaemia.^{21, 22}

Evidence from school-based interventions indicates that nutrition education can improve adolescents' understanding and attitudes towards anaemia prevention. Studies conducted among adolescent girls in India have reported considerable knowledge gaps before educational interventions and significant improvement following structured teaching or nutrition education.^{22, 23} A school-based intervention in Karnataka also demonstrated improvement in knowledge related to iron-deficiency anaemia following repeated nutrition education sessions.²⁴ These findings support the use of planned educational strategies as an important component of school health programmes.

Audiovisual approaches may be particularly useful for adolescent health education because they can combine verbal explanation with visual representation and may improve attention, understanding, and retention of health information.^{21, 22} Video-assisted teaching can present information regarding nutritional anaemia in a simple, engaging, and age-appropriate format and may help bridge gaps between theoretical information and practical dietary behaviour.

Therefore, considering the continuing burden of nutritional anaemia among adolescent girls, the increased physiological requirements during adolescence, the importance of menstruation-related iron loss, and the identified gaps in knowledge regarding anaemia prevention, there is a need for effective educational interventions at the school level.^{2, 16, 17}

METHODOLOGY

The present study adopted a pre-experimental one-group pre-test post-test research design (O_1-X-O_2) to evaluate the effectiveness of a Video Assisted Teaching Programme on knowledge and attitude regarding nutritional anaemia and its prevention among adolescent girls in a selected school of

Gurugram, Haryana. The design enabled the researcher to assess the baseline knowledge and attitude of the participants before the intervention and compare them with the post-test findings after the intervention.

The study included a sample of 60 adolescent girls, selected through a non-probability purposive sampling technique. The study was conducted at Government Senior Secondary School, Budhera, Gurugram, Haryana. The participants who were willing to participate, present during data collection, and studying in the selected school were included in the study. Girls who were unwilling to participate, absent during data collection, or unavailable for the post-test were excluded. The data collection period was from February 2026 to March 2026.

Data were collected using a structured research tool comprising three sections: Section A—socio-demographic variables, Section B—structured knowledge questionnaire, and Section C—structured attitude rating scale. The knowledge questionnaire consisted of 20 multiple-choice questions, with one mark for each correct response. Knowledge scores were categorized as poor (0–7), average (8–14), and good (15–20). The attitude scale consisted of five-point Likert-type statements, including both positive and negative items. Attitude scores were classified as unfavourable (15–35), neutral (36–55), and favourable (56–75).

The research tool was validated by eight nursing experts for clarity, relevance, appropriateness, adequacy, and organization. Reliability was established among six adolescent girls who were not included in the main study, using Cronbach's alpha, yielding a reliability coefficient of $r = 0.82$, indicating satisfactory reliability.

The intervention consisted of a 30–40-minute Video Assisted Teaching Programme, delivered through a PowerPoint presentation and educational video, followed by interactive discussion. A pre-test was conducted before the intervention, and the post-test was administered on the seventh day using the same tools. Ethical clearance, administrative permission, written informed consent, confidentiality, and anonymity were maintained throughout the study. Descriptive statistics and inferential tests, including frequency, percentage, mean, standard deviation, *t*-test, and chi-square test, were used for data analysis.

RESULT

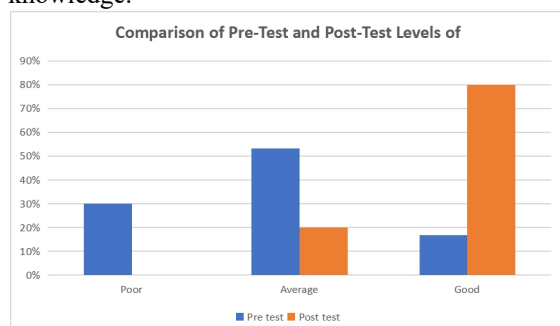
The frequency and percentage distribution of demographic variables among 60 adolescent girls. Regarding age, the majority of participants, 26 (43.3%), belonged to the age group of 13–15 years. With respect to religion, the majority, 42 (70.0%), were Hindu. Regarding type of family, 34 (56.7%) participants belonged to nuclear families. In relation to place of residence, the majority, 28 (46.7%), were from urban areas. Regarding father's educational status, the majority, 22 (36.7%), had secondary education, whereas in relation to mother's

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educational status, 20 (33.3%) mothers had primary education. Concerning father's occupation, the majority, 28 (46.7%), were private employees, while 40 (66.7%) mothers were homemakers. Regarding monthly family income, the majority, 24 (40.0%), had a family income of ₹10,001–20,000 per month. In terms of dietary pattern, 28 (46.7%) participants followed a mixed diet. With regard to history of anaemia, the majority, 32 (53.3%), had never been diagnosed with anaemia. Regarding prior information about nutritional anaemia, 38 (63.3%) participants had previous information. Concerning age at menarche, the majority, 36 (60.0%), attained menarche between 12–14 years. Regarding menstrual history, 40 (66.7%) participants reported regular menstruation. In relation to duration of menstruation, the majority, 38 (63.3%), reported a duration of 3–4 days. Regarding the source of information about anaemia, the highest proportion, 18 (30.0%), received information through social media.

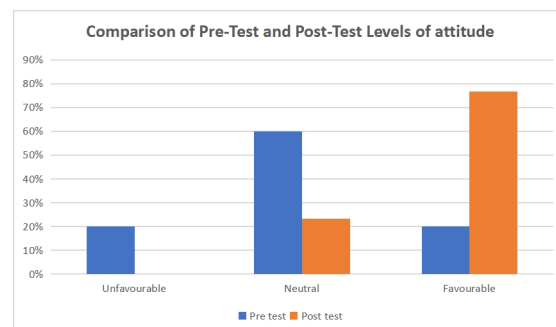
Comparison of Pre-Test and Post-Test Levels of Knowledge regarding Nutritional Anaemia

The majority of adolescent girls 32 (53.3%) had average knowledge, 18 (30.0%) had poor knowledge, and only 10 (16.7%) had good knowledge regarding nutritional anaemia. After the intervention, 48 (80.0%) participants achieved good knowledge and none of the participants had poor knowledge.



Comparison of Pre-Test and Post-Test Levels of Attitude regarding Nutritional Anaemia

During the pre-test, most adolescent girls 36 (60.0%) had a neutral attitude, while 12 (20.0%) had unfavourable attitude and 12 (20.0%) had favourable attitude regarding nutritional anaemia. In the post-test, 46 (76.7%) participants developed a favourable attitude and none of the participants had an unfavourable attitude.



Bar graph shows distribution according to Comparison of Pre-Test and Post-Test Level of attitude

Effectiveness of Video-Assisted Teaching Programme on Knowledge & Attitude Scores

Table 1: Comparison of Pre-Test and Post-Test Attitude Scores regarding Nutritional Anaemia n = 60

Variable	Mean	Standard Deviation	Mean Difference	t-value	p-value
Pre-test Knowledge Score	10.8	3.4	6.8	14.72	0.001*
Post-test Knowledge Score	17.6	1.9			
Pre-test Attitude Score	49.2	7.1	15.6	12.84	0.001*
Post-test Attitude Score	64.8	5.2			

*Significant at $p < 0.05$

The above table shows that the mean pre-test knowledge score of adolescent girls was 10.8 ± 3.4 , which increased to 17.6 ± 1.9 in the post-test after administration of the video-assisted teaching programme. The mean difference was 6.8. The calculated paired t-value was 14.72, which was statistically significant at $p < 0.05$. The mean pre-test attitude score was 49.2 ± 7.1 , which increased to 64.8 ± 5.2 after the video-assisted teaching programme. The mean difference was 15.6. The calculated paired t-value was 12.84, which was statistically significant at $p < 0.05$. The findings indicate that the video-assisted teaching programme was effective in improving the attitude of adolescent girls regarding nutritional anaemia and its prevention.

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Table 2: Association between Demographic Variables and Post-test Knowledge Level regarding Nutritional Anaemia among Adolescent Girls (n = 60)

S. No.	Demographic Variables	Categories	Average	Good	Test Value	df	p-value	Significance
1	Age	10–12 years	5	7	$\chi^2 = 8.24$	3	0.041*	S
		13–15 years	4	22				
		16–18 years	2	16				
		19 years	1	3				
2	Educational Status	6th standard	5	5	$\chi^2 = 9.16$	3	0.027*	S
		7th standard	4	11				
		8th standard	2	16				
		9th standard	1	16				
3	Religion	Hindu	7	35	$\chi^2 = 2.11$	3	0.549	NS
		Muslim	3	7				
		Christian	1	4				

		Others	1	2				
4	Type of Family	Nuclear family	7	27	$\chi^2 = 1.88$	2	0.391	NS
		Joint family	4	16				
		Extended family	1	5				
5	Place of Residence	Rural	6	12	$\chi^2 = 3.72$	2	0.155	NS
		Urban	3	25				
		Semi-urban	3	11				
6	Father Educational Status	No formal education	5	4	$\chi^2 = 10.82$	3	0.013*	S
		Primary education	4	14				
		Secondary education	2	20				
		Graduate and above	1	10				
7	Mother	No form	5	7	$\chi^2 =$	3	0.0	S

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	Education al Status	al education			1 1. 6 4	0 9 *	
		Primary education	4	1 6			
		Secondary education	2	1 6			
		Graduate and above	1	9			
8	Father's Occupation	Unemployed	3	3	$\chi^2 = 3.18$	3 0. 3 6 4	NS
		Private employee	5	2 3			
		Government employee	2	1 2			
		Business	2	1 0			
9	Mother's Occupation	Homemaker	8	3 2	$\chi^2 = 2.84$	3 0. 4 1 7	NS
		Private employee	2	8			
		Government	1	4			

		employee					
		Business	1	4			
10	Monthly Family Income	Below ₹10,000	6	8	$\chi^2 = 9.44$	3 0. 0 2 4 *	S
		₹10,001–20,000	4	2 0			
		₹20,001–30,000	1	1 3			
		Above ₹30,000	1	7			
11	Dietary Pattern	Vegetarian	5	1 3	$\chi^2 = 3.26$	2 0. 1 9 6	NS
		Non-vegetarian	4	1 0			
		Mixed	3	2 5			
12	Ever Diagnosed with Anaemia	Yes	5	1 5	$\chi^2 = 4.02$	2 0. 1 3 4	NS
		No	5	2 7			
		Don't know	2	6			
13	Prior Inform	Yes	4	3 4	Fish	1 0. 0	S

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	Information regarding Nutritional Anaemia				Exact Test = 5.28	18*	
		No	8	14			
14	Age of Menarche	10–11 years	4	12	$\chi^2 = 2.76$	2	0.251 NS
		12–14 years	6	30			
		More than 14 years	2	6			
15	Menstrual History	Regular	6	34	$\chi^2 = 3.64$	2	0.162 NS
		Irregular	4	10			
		Heavy bleeding	2	4			
16	Duration of Menstruation	Less than 3 days	3	7	$\chi^2 = 2.14$	2	0.343 NS
		3–4 days	6	32			
		More than	3	9			

		4 days					
17	Source of Information regarding Anaemia	Books	3	7	$\chi^2 = 8.06$	3	0.045* S
		Social Media	2	16			
		Friends/Family Members	4	12			
		Teachers	3	13			

*Significant at $p < 0.05$

The findings revealed that age, educational status, father's educational status, mother's educational status, monthly family income, prior information regarding nutritional anaemia, and source of information regarding anaemia had a statistically significant association with the post-test knowledge level among adolescent girls at the $p < 0.05$ level. However, religion, type of family, place of residence, father's occupation, mother's occupation, dietary pattern, history of anaemia, age of menarche, menstrual history, and duration of menstruation did not show a statistically significant association with post-test knowledge level regarding nutritional anaemia.

Table 3: Association between Demographic Variables and Post-test Attitude Level regarding Nutritional Anaemia among Adolescent Girls (n = 60)

S.N.	Demographic Variables	Categories	Neutral	Favourable	Test Value	df	p-value	Significance
1	Age	10–12 years	5	7	$\chi^2 = 8.06$	3	0.04	S

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					0 2	6 *	
		13– 15 year s	4	22			
		16– 18 year s	3	15			
		19 year s	2	2			
2	Edu cati onal Stat us	6th stan dard	5	5	χ^2 = 5. 2 2	3	0. 1 5 6 NS
		7th stan dard	4	11			
		8th stan dard	3	15			
		9th stan dard	2	15			
3	Reli gion	Hind u	8	34	χ^2 = 1. 9 4	3	0. 5 8 6 NS
		Mus lim	3	7			
		Chri stian	2	3			
		Othe rs	1	2			
4	Typ e of Fam ily	Nucl ear fami ly	8	26	χ^2 = 2. 0 2	2	0. 3 6 4 NS
		Joint fami ly	4	16			

		Exte nded fami ly	2	4			
5	Plac e of Resi denc e	Rura l	6	12	χ^2 = 3. 2 8	2	0. 1 9 4 NS
		Urba n	4	24			
		Sem i- urba n	4	10			
6	Fath er Edu cati onal Stat us	No form al educ ation	5	4	χ^2 = 9. 7 6	3	0. 0 2 1 * S
		Prim ary educ ation	4	14			
		Seco ndar y educ ation	3	19			
		Grad uate and abov e	2	9			
7	Mot her Edu cati onal Stat us	No form al educ ation	5	7	χ^2 = 1 0. 4 2	3	0. 0 1 5 * S
		Prim ary educ ation	4	16			
		Seco ndar	3	15			

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		y educ ation						
		Grad uate and abov e	2	8				
8	Fath er's Occ upat ion	Une mpl oyed	3	3	χ^2 = 2. 8 4	3	0. 4 1 7	NS
		Priv ate empl oyee	5	23				
		Gov ern ment empl oyee	3	11				
		Busi ness	3	9				
9	Mot her's Occ upat ion	Hom ema ker	8	32	χ^2 = 2. 1 8	3	0. 5 3 6	NS
		Priv ate empl oyee	3	7				
		Gov ern ment empl oyee	2	3				
		Busi ness	1	4				
10	Mon thly Fam ily Inco me	Belo w ₹10, 000	5	9	χ^2 = 8. 8 8	3	0. 0 3 1 *	S

		₹10, 001– 20,0 00	4	20				
		₹20, 001– 30,0 00	3	11				
		Abo ve ₹30, 000	2	6				
11	Diet ary Patt ern	Vege taria n	5	13	χ^2 = 2. 6 4	2	0. 2 6 7	NS
		Non - vege taria n	4	10				
		Mix ed	5	23				
12	Ever Dia gnos ed with Ana emi a	Yes	5	15	χ^2 = 3. 4 2	2	0. 1 8 1	NS
		No	6	26				
		Don 't kno w	3	5				
13	Prio r Info rmat ion rega rdin g Nutr ition al Ana	Yes	5	33		Fi s h er E x a ct T es t =	1	0. 0 2 2 *

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	emi a				4. 9 6			
		No	9	13				
1 4	Age of Men arche	10– 11 year s	4	12	χ^2 = 2. 4 8	2	0. 2 8 9	NS
		12– 14 year s	7	29				
		Mor e than 14 year s	3	5				
1 5	Men stru al Hist ory	Reg ular	7	33	χ^2 = 3. 1 2	2	0. 2 1 0	NS
		Irreg ular	5	9				
		Hea vy blee ding	2	4				
1 6	Dur atio n of Men stru atio n	Less than 3 days	3	7	χ^2 = 2. 0 2	2	0. 3 6 4	NS
		3–4 days	7	31				
		Mor e than 4 days	4	8				
1 7	Sour ce of Info rmat	Boo ks	3	7	χ^2 = 5.	3	0. 1	NS

	ion rega rdin g Ana emi a				8 4		2 0	
		Soci al Med ia	3	15				
		Frie nds/ Fam ily Me mbe rs	5	11				
		Teac hers	3	13				

*Significant at $p < 0.05$

The findings revealed that age, father's educational status, mother's educational status, monthly family income, and prior information regarding nutritional anaemia had a statistically significant association with the post-test attitude level among adolescent girls at the $p < 0.05$ level. However, educational status, religion, type of family, place of residence, father's occupation, mother's occupation, dietary pattern, history of anaemia, age of menarche, menstrual history, duration of menstruation, and source of information regarding anaemia did not show a statistically significant association with post-test attitude level regarding nutritional anaemia.

DISCUSSION

The present study was conducted to assess the effectiveness of a Video Assisted Teaching Programme regarding knowledge and attitude on nutritional anaemia and its prevention among adolescent girls in a selected school of Gurugram, Haryana. The study included 60 adolescent girls and adopted a pre-experimental one-group pre-test post-test design. The findings demonstrated a marked improvement in both knowledge and attitude following the intervention. The results are discussed in relation to the objectives of the study and compared with findings from previous studies.

Discussion related to socio-demographic characteristics

In the present study, the majority of adolescent girls, 26 (43.3%), were in the age group of 13–15 years. Most participants were Hindu, 42 (70.0%), belonged to nuclear families, 34 (56.7%), and were residing in urban areas, 28 (46.7%). Regarding parental education, the largest proportion of fathers, 22 (36.7%), had secondary education, whereas 20

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(33.3%) mothers had primary education. The majority of participants, 24 (40.0%), belonged to families with a monthly income of ₹10,001–20,000. Nearly half, 28 (46.7%), followed a mixed dietary pattern. Most girls, 38 (63.3%), had received prior information regarding nutritional anaemia, with social media being the most commonly reported source of information, 18 (30.0%).

These findings indicate that although a considerable proportion of the participants had previously received information about anaemia, baseline knowledge was not uniformly adequate. This suggests that mere exposure to health information may not be sufficient to produce comprehensive understanding or appropriate attitudes, particularly when information is obtained from informal sources such as social media. A structured and age-appropriate educational intervention may therefore be required to strengthen knowledge and translate information into positive attitudes and preventive practices.

A similar need for targeted educational interventions among adolescent girls was reported by Bhalsod et al., who studied 100 adolescent girls aged 17–19 years in Vadodara and found substantial gaps in knowledge regarding causes, symptoms, dietary sources of iron, factors affecting iron absorption, and treatment of anaemia before educational intervention.

Discussion related to effectiveness of the Video Assisted Teaching Programme on knowledge

The findings of the present study demonstrated a substantial improvement in knowledge following the Video Assisted Teaching Programme. The mean knowledge score increased from 10.8 ± 3.4 in the pre-test to 17.6 ± 1.9 in the post-test, with a mean difference of 6.8. The calculated paired *t* value was 14.72, which was statistically significant at $p < 0.05$. Furthermore, the proportion of girls with good knowledge increased from 16.7% to 80.0%, while the proportion with poor knowledge decreased from 30.0% to 0%.

These findings clearly indicate that the Video Assisted Teaching Programme was effective in improving knowledge regarding nutritional anaemia and its prevention. The relatively lower standard deviation in the post-test also suggests that knowledge became more consistent among the participants after the intervention.

The present finding is strongly supported by Bhalsod et al. (2019), who administered a 45-minute educational intervention to 100 adolescent girls in Vadodara. Following the intervention, knowledge regarding causes, signs and symptoms, dietary sources of iron, factors affecting iron absorption, and treatment of anaemia improved substantially. The authors concluded that a single educational session was effective in improving knowledge regarding anaemia and its preventive measures.

Similarly, Kaparwan reported a marked improvement after a structured teaching programme among adolescent girls. Adequate knowledge increased to **90.63%** in the post-test compared with only 5% during the pre-test, demonstrating the effectiveness of structured educational interventions.

The findings are also comparable with the study conducted in Hoshiarpur, where the proportion of adolescent girls with adequate knowledge increased to approximately **70%** after structured teaching, compared with only 18% before the intervention. Although the teaching method in that study was structured teaching rather than video-assisted teaching, both findings demonstrate that planned educational interventions can substantially improve adolescents' understanding of anaemia.

Further support comes from the school-based intervention conducted by Salam et al. in three government schools in Karnataka among 455 students. Seven 30-minute educational sessions delivered over seven weeks resulted in an increase of 3.67 points in mean knowledge score ($p < 0.01$), with improvements in correct responses across several anaemia-related questions. The students also reported greater awareness and more positive attitudes towards dietary behaviour.

A particularly relevant comparison is provided by Jebasingh (2026), who evaluated a Video Assisted Teaching programme regarding dietary management of anaemia among adolescent girls in a school setting in Pudukkottai, Tamil Nadu. The study specifically supports the use of video-assisted education for improving anaemia-related dietary knowledge among adolescent girls.

Discussion related to effectiveness of the Video Assisted Teaching Programme on attitude

The present study demonstrated a statistically significant improvement in attitude following the Video Assisted Teaching Programme. The mean attitude score increased from 49.2 ± 7.1 in the pre-test to 64.8 ± 5.2 in the post-test, giving a mean difference of 15.6. The calculated paired *t* value was 12.84, which was statistically significant at $p < 0.05$. At the categorical level, the findings were even more pronounced. Before the intervention, only **20.0%** of participants had a favourable attitude, whereas after the intervention, **46 (76.7%)** developed a favourable attitude and none remained in the unfavourable category. This indicates that the Video Assisted Teaching Programme was effective not only in improving factual knowledge but also in promoting more favourable perceptions regarding nutritional anaemia and its prevention.

These findings are supported by Adhikari Poudel et al., who reported significant improvements in mean knowledge and attitude scores following nutritional education among school children in Belgaum. Their study demonstrated an overall 51.2% increase in mean knowledge score and 20.7%

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increase in mean attitude score, both statistically significant.

The present findings are also consistent with a 2024 study from Moradabad, which reported that nutritional education among adolescent girls produced significant improvements in knowledge and attitude, with an overall increase of 53.6% in knowledge and 18% in attitude scores. The investigators concluded that nutritional education was an affordable and sustainable strategy for improving understanding and attitudes related to anaemia.

Discussion related to association between demographic variables and post-test knowledge

In the present study, post-test knowledge was significantly associated with age ($\chi^2 = 8.24$, $p = 0.041$), educational status ($\chi^2 = 9.16$, $p = 0.027$), father's educational status ($\chi^2 = 10.82$, $p = 0.013$), mother's educational status ($\chi^2 = 11.64$, $p = 0.009$), monthly family income ($\chi^2 = 9.44$, $p = 0.024$), prior information regarding nutritional anaemia (Fisher exact = 5.28, $p = 0.018$), and source of information ($\chi^2 = 8.06$, $p = 0.045$).

The significant association with age may indicate that older adolescents have greater exposure to health-related information and may possess greater cognitive maturity to understand concepts related to nutrition, menstruation and anaemia. Similarly, educational status may influence the ability to understand, process and retain health information.

The significant association with both father's and mother's educational status suggests that the family educational environment may contribute to adolescents' access to health information. Parents with higher educational exposure may be more likely to discuss nutrition, encourage healthy dietary practices and guide adolescents towards reliable health information.

The significant association with family income may also reflect differences in access to nutritious food, educational resources and health information. However, this association should not be interpreted as a direct causal relationship because the present study used a non-probability sample and a one-group design.

The significant association between previous information and post-test knowledge is particularly noteworthy. Participants who had already been exposed to information about anaemia may have had a foundation upon which the video-assisted programme could build. Similarly, the significant association with source of information indicates that the quality and type of previous exposure may influence learning outcomes.

These findings are comparable with **Kaparwan**, who reported significant associations between knowledge and demographic variables such as age, education and previous exposure to information. This supports the present finding that demographic

and informational characteristics can influence adolescents' knowledge levels.

Discussion related to association between demographic variables and post-test attitude

The present study found that post-test attitude was significantly associated with age ($\chi^2 = 8.02$, $p = 0.046$), father's educational status ($\chi^2 = 9.76$, $p = 0.021$), mother's educational status ($\chi^2 = 10.42$, $p = 0.015$), monthly family income ($\chi^2 = 8.88$, $p = 0.031$), and prior information regarding nutritional anaemia (Fisher exact = 4.96, $p = 0.022$).

The significant association between age and attitude may be related to increasing maturity and greater understanding of health and reproductive issues as adolescents progress through the teenage years. Similarly, parental education may influence the development of health-related beliefs through communication, modelling of healthy practices and support for appropriate dietary behaviours.

The association with family income may reflect differences in access to healthy food choices and health information. However, attitude is influenced by multiple factors, and socioeconomic status alone cannot explain the development of favourable health attitudes.

The significant association between prior information and post-test attitude suggests that previous exposure may have helped participants relate the new information to their existing knowledge and experiences. In contrast, educational status, religion, type of family, residence, parental occupation, dietary pattern, history of anaemia, menstrual characteristics and source of information did not demonstrate statistically significant associations with post-test attitude.

CONCLUSION

The present study concludes that the majority of adolescent girls in the selected area of Gurgaon, Haryana, were aged 13–15 years, studying in 8th standard, belonging to nuclear families, and residing in urban areas. Most participants had prior information regarding anaemia and exhibited average knowledge with a neutral attitude toward nutritional anaemia and its prevention at baseline. After the implementation of the video-assisted teaching programme, there was a significant improvement in both knowledge and attitude levels. The mean post-test scores for knowledge and attitude increased markedly and were statistically significant at $p < 0.05$, indicating the effectiveness of the intervention. Significant associations were found between post-test knowledge and variables such as age, educational status, parental education, monthly family income, prior information, and source of information. Similarly, post-test attitude levels were significantly associated with age, parental education, monthly family income, and prior information, while most other variables were not significantly associated. Overall, the study concludes that the video-assisted teaching

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programme was effective in improving knowledge and attitude regarding nutritional anaemia among adolescent girls.

REFERENCES

1. World Health Organization. Anaemia [Internet]. Geneva: World Health Organization; 2025 [cited 2026 Sep 14]. Available from: [WHO: Anaemia](#)
2. World Health Organization. Accelerating anaemia reduction: a comprehensive framework for action. Geneva: World Health Organization; 2023. Available from: [WHO: Accelerating anaemia reduction](#)
3. World Health Organization. Guideline on haemoglobin cutoffs to define anaemia in individuals and populations. Geneva: World Health Organization; 2024. Available from: [WHO haemoglobin cutoffs guideline](#)
4. Stevens GA, Paciorek CJ, Flores-Urrutia MC, Borghi E, Namaste S, Wirth JP, et al. National, regional, and global estimates of anaemia by severity in women and children for 2000-19: a pooled analysis of population-representative data. *Lancet Glob Health*. 2022;10(5):e627-e639. doi:10.1016/S2214-109X(22)00084-5.
5. World Health Organization. Accelerating anaemia reduction: a comprehensive framework for action. Geneva: World Health Organization; 2023. p.1-46. Available from: [WHO framework for anaemia reduction](#)
6. Christian P, Smith ER. Adolescent undernutrition: global burden, physiology, and nutritional risks. *Ann Nutr Metab*. 2018;72(4):316-328. doi:10.1159/000488865.
7. World Health Organization. WHO guideline: implementing effective actions for improving adolescent nutrition. Geneva: World Health Organization; 2018. Available from: [WHO adolescent nutrition guideline](#)
8. Das JK, Salam RA, Thornburg KL, Prentice AM, Campisi S, Lassi ZS, et al. Nutrition in adolescents: physiology, metabolism, and nutritional needs. *Ann N Y Acad Sci*. 2017;1393(1):21-33. doi:10.1111/nyas.13330.
9. Salam RA, Hooda M, Das JK, Arshad A, Lassi ZS, Middleton P, et al. Interventions to improve adolescent nutrition: a systematic review and meta-analysis. *J Adolesc Health*. 2016;59(4 Suppl):S29-S39. doi:10.1016/j.jadohealth.2016.06.022.
10. World Health Organization. Adolescent health [Internet]. Geneva: World Health Organization [cited 2026 Sep 14]. Available from: [WHO: Adolescent health](#)
11. Camaschella C. Iron-deficiency anemia. *N Engl J Med*. 2015;372(19):1832-1843. doi:10.1056/NEJMra1401038.
12. World Health Organization. Daily iron supplementation in adult women and adolescent girls. Geneva: World Health Organization; 2016. Available from: [WHO iron supplementation guideline](#)
13. World Health Organization. Intermittent iron and folic acid supplementation in adult women and adolescent girls [Internet]. Geneva: World Health Organization; 2023 [cited 2026 Sep 14]. Available from: [WHO iron and folic acid supplementation](#)
14. Kumar A, et al. Anaemia among adolescent girls in India: prevalence, determinants and prevention strategies. *J Family Med Prim Care*. 2021;10(6):2205-2212.
15. World Health Organization. Weekly iron and folic acid supplementation as an anaemia-prevention strategy in women and adolescent girls. Geneva: World Health Organization; 2018. Available from: [WHO weekly iron and folic acid supplementation](#)
16. Roy Arokiam Daniel R, Kalaivani M, Kant S, Gupta S. Prevalence of anaemia among adolescent girls (10-19 years) in India: a systematic review and meta-analysis. *Natl Med J India*. 2023;36(4):233-240. doi:10.25259/NMJI_637_21.
17. Anaemia among school-going adolescent girls in India: a systematic review of prevalence, predictors, and prevention pathways. [Journal details as indexed]. 2026.
18. World Health Organization. Intermittent iron and folic acid supplementation in menstruating women. Geneva: World Health Organization; 2011. Available from: [WHO guideline on intermittent iron and folic acid supplementation](#)
19. World Health Organization. WHO recommendations on adolescent health: guidelines approved by the WHO Guidelines Review Committee. Geneva: World Health Organization; 2017.
20. Kapil U, Saxena R, Ramachandran P, Sachdev HP, Kapil U, et al. The Adolescent Girls' Anaemia Control Programme: a decade of programming experience to break the inter-generational cycle of malnutrition in India. *Public Health Nutr*. 2013;16(12):2320-2326.
21. Salam RA, Hooda M, Das JK, Arshad A, Lassi ZS, Middleton P, et al. Interventions to improve adolescent nutrition: a systematic review and meta-analysis. *J Adolesc Health*. 2016;59(4 Suppl):S29-

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KNOWLEDGE AND ATTITUDE ON NUTRITIONAL ANAEMIA AND ITS PREVENTION AMONG
ADOLESCENT GIRLS

- S39.
doi:10.1016/j.jadohealth.2016.06.022.
22. Adhikari Poudel S, Angolkar M, Naik V. Impact of nutritional education on knowledge, attitude and practice regarding anemia among school children in Belgaum, India. *Glob Health J.* 2022;6(2):91-94. doi:10.1016/j.glohj.2022.04.001.
23. Bhalsod AS, Dave NN, Thakor N. Impact of educational intervention regarding anaemia and its preventive measures among adolescent girls of Government Arts College of Vadodara, Gujarat, India. *Int J Adv Med.* 2019;6(6):1894-1897. doi:10.18203/2349-3933.ijam20195158.
24. Salam SS, et al. Impact of a school-based nutrition educational intervention on knowledge related to iron deficiency anaemia in rural Karnataka, India: a mixed methods pre-post interventional study. *BJOG.* 2023. doi:10.1111/1471-0528.17619.