

EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON PREVENTION OF IRON DEFICIENCY ANAEMIA AMONG ADOLESCENT GIRLS

Mrs. Monika Devi NR

M.Sc. Nursing (Cardiothoracic Nursing)
Govt Medical College and Hospital Jammu, J&K UT India
Email- Monikasyal98@gmail.com

Abstract

Introduction: Adolescent girls significantly go through internal changes and mal-nutrition may lead to ineffective or unhealthy development of their body. Structured teaching allows participants or students to learn effectively and quickly through a visual presentation of an issue. Visual mode of teaching is effective in visualisation of issues that helped learners to learn comparatively better than a traditional mode of teaching.

Need of the study: High school and preliminary schools need to adopt structured teaching to aware girls with various health issues as it is effective in developing knowledge and awareness among Adolescent girls. Survey and study statistics helped in understanding iron deficiency or anaemia is more common in adolescent girls.

Research method: "Quasi-experimental method was used with "one group pre-test and post-test design". Structured Questionnaires was used to know about awareness of anaemia and iron deficiency in adolescent girls. Data was collected by convenient sampling technique from the 50 adolescent girls of Hoshiarpur, between the age of 12 to 18 years who are present at the time of data collection.

Results: Shows that post-test result significantly improves as compared to pre-test result after implementation of structured teaching. Around 6% of adolescent girls have inadequate knowledge and 18% have adequate knowledge issues regarding anaemia, around 76% have minimal knowledge. After completion of structured training program statistics revealed that around 70% of adolescents have adequate knowledge and around 30% of adolescents still lack of knowledge.

Conclusion: Structured teaching is effective in ensuring adolescent awareness about iron insufficiency.

Key words: Structured teaching, Effectiveness, Anaemia, Menstrual disorder, Adolescent girl, Teaching, Pre-test, Post-test.

Introduction

Structured teaching refers to visual-based approaches to learning in a highly structured environment, especially in teaching individuals with autism spectrum disorders (ASD) in various learning and educational fields. Structured teaching allows participants or students to learn effectively and quickly through a visual presentation of an issue. Visual mode of teaching is effective in visualisation of n issues that helped learners to learn comparatively better than a traditional mode of teaching. Schools and other institutions prefer this mode of teaching in teaching a complex and sensitive topic that helped teachers significantly convey their instructions of knowledge to students. Adolescent girls significantly go through internal changes and mal-nutrition may lead to ineffective or unhealthy development of their body. They need to be taught about common diseases and conditions like Anaemia and other forms of changes in body as a result of getting older. Different survey results on development of adolescent girls raise a concern regarding healthy development of girls that needs to prevent by structured teaching to aware girls regarding this issue and ensure healthy development.

Need for the study

Mal-nutrition and an unhealthy diet in adolescent girls may result in iron deficiency or Anaemia and structured teaching on this issue significantly helps in increasing effectiveness of prevention plans. According to Meena and Yashaswinideepak (2018), High school and preliminary schools need to adopt structured teaching to aware girls with various health issues as it is effective in developing knowledge and awareness among girls. Adolescent girls are exposed to new things daily and they learn comparatively faster than older ones. This enhances importance of structured teaching to adolescent girls on sensitive and

complex health issues to help them to live a healthy life. It is important to conduct a study on this issue and measure effectiveness of structured teaching in providing awareness and implementing prevention plans to identify necessity of adopting these strategies at school levels.

Survey and study statistics helped in understanding iron deficiency or anaemia is more common in adolescent girls and pregnant women. Based on this statistic it can be concluded that a prevention or cure plan needs to be implemented to improve health and normal development of a girl and offspring respectively. Conducting awareness programmes or adopting structured teaching in school curricula will be effective in developing a prevention plan to prevent iron deficiencies in adolescent girls.

Research Methodology

Research approach: - Quantitative research approach

Research design: - Quasi-experimental research design with one group post-test design.

Research setting: - Conducted in the high school of Hoshiarpur.

Population: - Adolescent girls between the age of 12 to 18 years.

Sampling technique: - Convenient sampling technique was used.

Sample size: -Sample size for the study was 50 adolescent girls between the age of 12 to 18 years.

Inclusive Criteria: -The study include-

Adolescent girls who

Are studying in selected school, Hoshiarpur.

Adolescent girl between the age group of 12-18years.

Available at the time of data collection.

Able to understand and speak English

Exclusive criteria: -The study excluded Adolescent girls who

Are not studying in selected school, Hoshiarpur.

Who are above the age group and less than 18 years.

Not Available at the time of data collection.

Not Able to understand and speak English

Adolescent boys are excluded.

The following tools were used in the study:

Socio-demographic characteristics.

A self-structured questionnaire was developed

Method for data collection

Ethical And Administrative Permission Was Taken. Then Adolescent Girls Was Taken Based on Inclusion and Exclusion Criteria then Consent Was Taken from The Participants then Pre- Test Was Done – Regarding Knowledge of Iron Deficiency Anaemia Was Assessed then Teaching Was Given On (Regarding Iron Deficiency Anaemia, Risk Factors, Signs and Symptoms, Diagnostic Findings, Complications, Management and Prevention) Iron Deficiency Anaemia Post-test was done to assess the improvement in the knowledge of the adolescent girls about iron deficiency anaemia

Result

According to Masih and Linson (2020), only around 3% of adolescent girls have efficient and effective knowledge issues regarding Anaemia, around 86% of adolescents have average knowledge and around 11% of adolescents have minimal knowledge. These statistics helped in understanding maximum adolescent girl who lacks knowledge of anaemia prevention and its impact on their lives. After completion of structured training program statistics revealed that around 70% of adolescents have sufficient knowledge and around 30% of adolescents stills lack knowledge. These pre and post-test or implementation results helped in concluding that implementation of structured training are highly effective in ensuring adolescents' awareness of this issue. In addition to that, lack of education and poor economic conditions adversely contributes to this issue and in such cases; structured teaching program in schools significantly improves knowledge of adolescent girls on iron deficiency or anaemia. Adolescent girls who belong to nuclear families mainly lack knowledge on these issues and structured teaching effectively helps them in anaemia prevention.

According to Deepti *et al.* (2020), in India, adolescent girls who are aged between 14 to 15 years and 16 to 17 years mostly suffer from anaemia as compared to 12 to 13 years and 18 to 19 years of adolescents. This

helped in concluding that due to a lack of knowledge girls are significantly impacted by this deficiency and it adversely impacts their healthy development. In addition to that, educational status, living status, economic status and regions also significantly influence their knowledge of this issue. Lack or deficiency of iron may adversely impact their menstrual period and may last more than 7 days.

According to Malathi and Vijayalakshmi (2020), pre and post-test knowledge of adolescent girls has significant differences and the mean value increases from 17.63 to 28.30 out of 40. This helped in concluding that structured training is effective in sharing knowledge and increasing knowledge of adolescent girls regarding iron deficiency. Pre-test scores revealed that around 62.5% of adolescents aged 14 years, around 52.5% of adolescents who belong to nuclear families and around 70% of adolescents who preferred an unhealthy diet were victims of iron deficiency. This helped in understanding that family background and diet play a significant role in causing iron deficiency or anaemia and it can be resolved through awareness programmes conducted by schools and following a healthy diet. In addition to that, adolescent girls who are victims of menstrual disorder and iron deficiency or anaemia majority of them lack adequate knowledge and around 82.5% of adolescent girls lack adequate knowledge. This helped in concluding that the implementation of structured teaching is necessary for schools to ensure awareness of these issues.

Discussion: This means structured teaching significantly improved knowledge regarding health issues of adolescents, especially iron deficiency or anaemia. Nutrition education and structured teaching or counselling significantly improve diets and nutrition intake of adolescent girls that significantly improves their health conditions and ensure healthy development. This study result helped in understanding that these awareness programmes are effective in promoting a healthy diet and managing iron status of adolescents.

Discussion

Implementation of structured teaching in regular school curricula will be effective in raising awareness and concern among adolescent girls regarding an iron deficiency or anaemia. Study statistics and results helped in concluding that structured teaching significantly improves knowledge of adolescent girls on iron deficiency that led them to follow a healthy diet and a prevention plan. Study result shows significant improvement in post-test results as compared to pre-test results that mean structured teaching significantly enhanced knowledge of adolescent girls (Ashtarian *et al.* 2018). Adding structured teaching in school curricula focused on discussing sensitive and complex health issues of adolescent girls will significantly help in dealing with health conditions like menstrual disorders and iron deficiency or nutritional anaemia. Structured teaching on these issues significantly led adolescent girls to follow a healthy diet and be more concerned with hygiene concerns. Adolescent girls gain an opportunity to know and discuss their developmental changes that significantly helped them in living healthy life.

Study results helped in understanding that lack of awareness, economic status, social status, lifestyle and unhealthy diet may lead to severe health issues or consequences such as menstrual disorder, nutritional anaemia and Dysmenorrhea. A huge percentage of girls lack knowledge on these issues due to social constraints, social tabues and restrictions to talking about these issues. Parenting plays an important role in primary health care education but due to ineffective knowledge of parents, their daughters eventually lack knowledge on these issues. According to Wiafeet *al.* (2022), nutrition education and structured teaching or counselling significantly improve diets and nutrition intake of adolescent girls that significantly improves their health conditions and ensure healthy development.

This study result helped in understanding that these awareness programmes are effective in promoting a healthy diet and managing iron status of adolescents. This eventually helps in tackling iron deficiency and diseases associated with iron deficiency. According to Rocheet *al.* (2018), Governments need to take effective and strategic steps to prevent iron deficiency in adolescent girls and need to introduce national programmes that aim to ensure healthy development of adolescent girls. These government programmes will significantly improve effectiveness of structured teaching focused on awareness of iron deficiency.

Structured teaching programmes significantly improve knowledge of adolescent girls regarding issues like iron deficiency or anaemia and allow them to live healthy lives. According to Alamiet *al.* (2019), the intervention group is comparatively more effective than a control group in preventing iron deficiency and intervention group significantly improved iron and Vitamin D supplements intake. An increase in iron

supplements and vitamin D supplements helped in preventing issues associated with iron deficiency and it significantly reduces the probability of menstrual disorder and anaemia in adolescent girls.

Table 1: Sociodemographic Variables among adolescent girls about iron insufficiency and anaemia.

N = 50

S.No	Demographic Variables		Freueny	Percentage
1.	Age in years	a)10-5	10	20
		b)15-19 years	40	80
2	Standard of education	a) Secondary	27	54
		b)Higher secondary	23	46
-3	Religion	a) Hindu	18	36
		b) Sikh	12	24
		c)Christian	14	28
4	Educational status of the father	a) Illiterate	13	26
		b)Primary education	17	34
		c)Secondary education	12	16
5	Educational status of the mother	a)Illiterate	19	38
		b)Primary education	11	22
		c)Secondary education	10	20
6	Fathers occupation	d)Degree and above	10	20
		a)Self employed	22	44
		b)Private job	14	28
		c)Government job	6	12
7	Mothers occupation	a) House wife	20	40
		b)Self employed	15	30
		c)Private job	10	20
		d)Government job	5	10
8		a)Rs5000/- -8000/	17	34
		b)8000/--10000/-	13	26
		c)Greater than Rs10000/-	7	
9	Diet pattetll	b)Vegetarian	7	14
		c)Non vegetarian	20	40
		Mixed	23	
10	Source of information	b)Television	14	28
		c)School	26	52
		d)News paper	7	14
		Health care professional.	13	26
11	Place of residence	b)Slum	22	44
		c)Rural	20	40
		Urban	8	16
12	Age at menarche	b)< 10 years	2	4
		c)10-11 years	16	32
		d)12-14 years	18	36
		15-18 years	14	28
13	Mensüual cycle	b) Regular	32	64
		Irregular	18	36
14	Duration of mensüual cycle	a) < 3 days	9	18
		b)3-4 days	21	40

Description

This above table helps to define Mal-nutrition and an unhealthy diet in adolescent girls suffering from iron deficiency or Anemia. This table discussed about survey report that has been assumed while doing this survey. This table includes age group, marital status, and ethnicity, educational level and sample size. These are some of effective features which have been analyses over here. According to a research study,

Study result shows that the post-test result significantly improves as compared to pre-test result after implementation of structured teaching. Around 3% of adolescent girls have efficient and effective knowledge issues regarding Anaemia, around 86% of adolescents have average knowledge and around 11% of adolescents have minimal knowledge.

After completion of structured training program statistics revealed that around 70% of adolescents have sufficient knowledge and around 30% of adolescents still lack knowledge. Thus, from the above survey which has been divided between the age group of 10-5 and 15-19 which is approximately (20% to 80%). This has been also discussed over here which helps to present a current report based on Anemia that has been found mainly in adolescent girls due to a lack of iron in the diet. This anaemia is also an appreciated reason for malnutrition which has been found while doing this survey.

This demographic variable table helps to Identify and measure the effectiveness of structured teaching for improving health knowledge of adolescent girls that supports prevention plans that helps to improve the conditions of girls those are affected by anaemia due to lack of malnutrition in their diet. These tables is been evaluated in this research study because it helps to analyse widely used reports that help in identifying baseline characteristics in medical research which allow analyzing of reasons for increasing anaemia within adolescence and its rate of growth. This table includes census data based on age, economic characteristics, marital status age group and many more. Here in this table, it has not been mentioned both economic status because participants are too small for economic status thus to maintain quality of research Age (20% - 80%), standard of educations secondary (54%) and higher secondary (46%) is mainly focused over here throughout. These are some of effective data that have been analysed over here in this research to understand the “effectiveness of structured teaching programmes on prevention of iron deficiency anaemia among adolescent girls.

First literature is based on a primary case study of adolescent girls of Kasturba Vidya Mandir, Sevagram, Wardha and this study found that mean value of pre-test was around 10.1 and post-test was around 19.08. This improvement in post-test results means structured teaching was effective in improving the knowledge of students in 9th grade and significantly helped in preventing nutritional anaemia.

2nd literature focuses on the prevalence of iron deficiency or anaemia in tribal adolescent children of rural areas and it studied health behaviour of students at Aralam farm high school and H.S.S Pala. Study results found that according to pre-test results around 61.1% of adolescents were anaemic or suffered from iron deficiency due to lack of knowledge. The post-test result ensured the offer of knowledge regarding iron deficiency to around 76.6% of adolescent students in those schools. Study results helped in concluding that structured teaching programmes significantly improved effectiveness of prevention plans and allowed tribal adolescent children to effectively prevent iron deficiency. In short, a structured teaching programme effectively improved knowledge of adolescent girls significantly reducing anaemic patients and ensuring healthy development of adolescent girls.

Limitations

Identifying and measuring effectiveness of structured teaching in improving health knowledge of adolescent girls and supporting prevention plans is quite a difficult job with a secondary academic approach to research. These factors led this research to consider previously published research that is based on primary research. In addition, in most cases, this journal focuses on a single school reduces diversity of their project that may adversely impact on data analysis findings of their studies (KHAN *et al.* 2020). This is because factors of health knowledge vary with location or region and with a change in region may cause a change in data analysis findings of a study. Demographic of students, especially their age are fixed in most journals and they are based on a significant age group of adolescents that may adversely impact post-test results. These factors combined may adversely influence a study and may divert a study.

Adequate health knowledge of sample participants of previous journals may influence by several factors that include demographics, religion, social constraints and economic status of a participant's family (Kotkar, 2021). Due to limited allocated time, this study does not concern with a brief analysis of these factors and their influence on health status of adolescents and knowledge regarding iron deficiency or other health issues. A time gap between pre-test and post-test was a minimum that may adversely impact data analysis findings. Most importantly, most studies are considered a case study on a developing country

India due to its diversity in economic and social backgrounds may fail in producing an effective conclusion from the UK perspective.

Recommendations

This research report aims to evaluate the effectiveness of structured teaching programs in preventing deficiency anaemia among adolescent girls. This study recommended every essential factor that is required for the "Immediate prevention of anaemia". This program of prevention aims to achieve techniques that are needed to be followed by adolescence from getting rid of anaemia diseases through a well-balanced diet. This diet structure is very essential for the prevention of anaemia which includes rich iron substances like watermelons, strawberries raisins and many other vitamins and minerals substances (Rocheet *al.*, 2018). This also involves different techniques and functions that help in generating iron in a body or in production of "RBCs/Haemoglobin" in an individual diet chart.

Adolescence is a considerable period for physical growth and sexual maturation that helps people to gain knowledge apart from this stage is also very risky because this can cause diseases like anaemia due to lack of proper nutrients. "Eating a well-balanced diet" encourages including iron-rich foods that help an individual get prevent iron-deficiency anaemia these are some of effective infractions that can reduce level of detests which can affect patient parties. Handling nutrient charts can cause an increase in iron supplements in daily life and also may lower risk that can cause loss of blood. Sustained stress is another cause's one of important cause of anaemia. Doctor also prescribed a balanced chart which can be very impactful for bringing balanced growth in diet.

Iron insufficiency is a reason for causing anaemia, this condition occurs when a person accomplishes this only happens when a person is facing problems, their body cannot use iron properly or find shortages in accessing Iron (Kotkar, 2021). While extreme Iron shortage anaemia can cause certain problems within the body. These symptoms include shortness of fatigue, chest pain, and shortness of breath, and some people also encounter hair loss and hair-related problems. Thus some effective steps like dictatorial concerns and many more needed to be followed by anaemia patients.

Conclusion

This study helped in concluding that structured teaching is effective in preventing iron deficiency or anaemia and menstrual disorders in adolescent girls. This is because structured teaching is effective in discussing and teaching sensitive and complex topics with a visual presentation that allowed adolescent girls to gain knowledge and implement them faster and more effectively. In addition to that, intervention through structured teaching is more effective than controlling plans to prevent nutritional anaemia. Factors like religion, age, living style, economic status and upbringing significantly influence knowledge of adolescent girls on these health issues and implementation of structured teaching significantly improves knowledge of adolescent girls on these issues. This statement can be supported by pre-test and post-test results of implementing structured teaching and positive differences in test scores helped in concluding that structured teaching is effective in preventing iron deficiency. Structured teaching is effective in ensuring adolescent awareness and governmental support and actions may increase the effectiveness of structured teaching significantly.

References

1. Reichardt, C.S., 2019. *Quasi-experimentation: A guide to design and analysis*. Guilford Publications. HQ: New York City
2. Tjora, A., 2018. *Qualitative research as stepwise-deductive induction*. Routledge. HQ: Milton Park, Abingdon-on-Thames, Oxfordshire, England, UK
3. Alami, A., Tavakoly Sany, S.B., Tehrani, H., Lael-Monfared, E., Hosseini, Z. and Jafari, A., 2019. The effect of educational intervention on iron and vitamin D consumption based on the theory of planned behaviour in Iranian adolescent girls: a quasi-experimental study. *International Journal of Health Promotion and Education*, 57(6), pp.316-331.
4. Ashtarian, H., Marzbani, B., Almasi, A., Marzbani, B., Khezeli, M. and Shahabadi, S., 2018. The Effect Of Educational Intervention Based On The Theory Of Planned Behaviour On Consumption Of Iron Supplement In High School Girls. *Journal Of Evolution Of Medical And Dental Sciences-Jemds*, 7(39), pp.5091-5098.

5. Ashtarian, H., Marzbani, B., Almasi, A., Marzbani, B., Khezeli, M. and Shahabadi, S., 2018. The Effect Of Educational Intervention Based On The Theory Of Planned Behaviour On Consumption Of Iron Supplement In High School Girls. *Journal Of Evolution Of Medical And Dental Sciences-Jemds*, 7(39), pp.5091-5098.
6. Biswas, U.N., 2020. Adolescent Reproductive Health in South Asia: Issues and Challenges. *Gender Equality Eds*, pp.1-10.
7. Deepti, M., Chaudhary, P., Kaur, M.R. and Chitra, M.P., 2021. A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention and Prevalence of Anemia among Adolescent Girls in Selected Areas.
8. Dhanya, V.J., Elsamra, C.S. and Fijo, S., 2019. Effectiveness of Structured Teaching Program on Knowledge about Anaemia among Tribal Adolescent Children with Anaemia. *International Journal of Nursing Education*, 11(3).
9. Kamalaja, T., Prashanthi, M. and Rajeswari, K., 2018. Effectiveness of health and nutritional education intervention to Combat anemia problem among adolescent girls. *Int. J. Curr. Microbiol. Appl. Sci*, 7(9), pp.3152-3162.
10. Kapil, U., Kapil, R. and Gupta, A., 2019. Prevention and control of anemia amongst children and adolescents: theory and practice in India. *The Indian Journal of Pediatrics*, 86(6), pp.523-531.
11. KHAN, A., SHAN, A. and ISLAM, D., 2020. A Study To Assess The Effectiveness Of Structured Teaching Program Regarding Anemia And Its Prevention Among Antenatal Mothers In Selected Hospital Of Greater Noida. *Galgotias University*.
12. Kotkar, M., 2021. A study to assess the effectiveness of self-instruction module regarding knowledge on prevention of iron deficiency anemia among 8th–10th standard girls in selected school, Pune.
13. Malathi, K.V. and Vijayalakshmi, G., 2018. Study Assess the Effectiveness Planned Teaching Programme Knowledge Adolsecent Girls Regarding Management Menstrual Disorders Nutritional Anemia Selected High School Rural Kolar.
14. Masih, S.D. and Linson, C.C., 2020. Evaluate the effectiveness of planned teaching Programme on knowledge of adolescent girls regarding prevention and management of iron deficiency anemia in selected English medium School Bilaspur. *Trends in Nursing Administration and Education (2348-2141)*, 9(2), pp.11-16.
15. Meena, S. and Yashaswinideepak, M., 2018. Effectiveness of Structured Teaching Programme on Knowledge Regarding Iron Deficiency Anemia Among Adolescent Girls In Higher Secondary School. *IOSR Journal of Nursing and Health Science*, 7(2), pp.76-80.
16. Park, I. and Kim, Y.R., 2018. Effects of TEACCH structured teaching on independent work skills among individuals with severe disabilities. *Education and Training in Autism and Developmental Disabilities*, 53(4), pp.343-352.
17. Riyanti, R.N., 2018. The use of education booklet for anemia prevention on teenage girls. *Indian Journal of Public Health Research & Development*, 9(11), pp.230-234.
18. Roche, M.L., Bury, L., Yusadiredja, I.N., Asri, E.K., Purwanti, T.S., Kusyuniati, S., Bhardwaj, A. and Izwardy, D., 2018. Adolescent girls' nutrition and prevention of anaemia: a school based multisectoral collaboration in Indonesia. *bmj*, 363.
19. Sakharkar, S., Punnoose, P., Pande, S. and Navarate, P., 2021. A Study to Assess the Effectiveness of Planned Teaching on Knowledge Regarding Prevention of Nutritional Anemia among Adolescents in Kasturba Vidya Mandir, Sevagram, Wardha. *Indian Journal of Forensic Medicine & Toxicology*, 15(4).
20. Seminar, A.U., Briawan, D., Khomsan, A., Dewi, M., EkAYANTI, I., Raut, M.K., ZAKARIA, A. and Roche, M.L., 2020. Awareness about anaemia and Weekly Iron-Folic Acid Supplementation (WIFAS) among school-going adolescent girls and parents in East Java and East Nusa Tenggara, Indonesia. *Journal of nutritional science and vitaminology*, 66(Supplement), pp.S111-S117.
21. Wiafe, M.A., Apprey, C. and Annan, R.A., 2022. Effectiveness of nutrition education and counselling programme on iron deficiency anaemia among adolescents: A study protocol of a randomized trial. *Nutrition and Health*, p.02601060221074433.