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Email:- Mo. 9429429550 ctefeduinspire@gmail.com

Identifying Needs for Developing Food and Nutrition E-Modules on Family Life Education for Rural Adolescent Girls in Vadodara District, Gujarat

Krishnaben Patel
Research Scholar
Department of Extension and Communication, Faculty of Family and Community Sciences
The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat
patelkrishna331@gmail.com

Prof. Avani Maniar
Research Guide
Department of Extension and Communication, Faculty of Family and Community Sciences
The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat
maniar.avani-extcomm@musbaroda.ac.in

Abstract
Adolescence is a crucial period characterized by rapid physical, mental, and emotional changes. Adequate nutrition during these years plays a vital role in supporting growth, menstrual health, cognitive development, and future maternal outcomes. Nutrition plays a key role in Family Life Education (FLE), particularly for adolescent girls in rural areas who face malnutrition, anemia, and limited health information. This study addresses these challenges by examining nutritional awareness, media access, and learning needs of rural adolescent girls in Vadodara district to inform culturally relevant e-modules that reflect local beliefs, practices, and language. A total of 105 girls aged 15–18 years from government schools across five villages were selected through convenience sampling. Data were collected using structured questionnaires and analyzed using frequency and percentage. Results showed that 58.0% were less aware of nutrition, 58.4% lacked a personal smartphone, yet 90.0% had internet access. About 51.4% felt somewhat comfortable using technology and online resources. A very high majority (91.4%) of respondents believe there is a need for family life education, and 89.5% prefer receiving e-modules in the Gujarati language. Nearly half (49.0%) of the respondents prefer video content, and 43.8% prefer animated presentations as formats for developing e-modules, respectively. Additionally, 56.3% of respondents prefer e-module sessions of less than 10 minutes, and 44.9% of respondents prefer online platforms.

Keywords: Adolescent Girls, Nutrition, Health Education, Family Life Education, E-Modules, Rural Gujarat

Introduction

Adolescence is a crucial period characterized by rapid physical, mental, and emotional changes. Adequate nutrition during these years plays a vital role in supporting growth,

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menstrual health, cognitive development, and future maternal outcomes. In the Indian context, adolescent girls are particularly at risk of malnutrition and anemia due to socio-cultural norms, gender discrimination, poverty, and limited access to nutrition education.

In rural areas, many families live in joint or extended households, where community ties are strong, and households rely on mutual support. Many rural families depend on farming, labor, and small-scale jobs, which involve all members in daily activities. Adolescent girls often contribute by doing household chores, caring for siblings, and helping with farming, which shapes their early sense of responsibility, but leaves limited space for nutrition awareness and self-care practices. According to UNICEF India (2020), rural adolescent girls often face challenges accessing health information, digital tools, and life skills education, making them more vulnerable during this transitional phase. NCERT (2021) also highlights that rural areas need specific educational programs to help adolescents navigate physical, emotional, and social changes.

Family Life Education (FLE) is a process that helps adolescents acquire the knowledge, attitudes, and life skills necessary to thrive within their families and society. FLE helps adolescents gain the knowledge, attitudes, and life skills needed to grow confidently within their families. As defined by NCERT (2021), FLE combines principles from sociology, psychology, education, biology, social work, and home science to support the holistic growth of young people. UNICEF India (2020) further emphasizes that FLE is particularly essential for adolescents in rural areas, where reliable information and support systems can be limited.

Within the Family Life Education (FLE) framework, Food and Nutrition is identified as a core content area because nutritional literacy is foundational to health and well-being. Nutrition awareness helps adolescents develop healthy eating habits, strengthen immunity, reduce disease risk, enhance academic performance, and prepare for a healthier adulthood. Strengthening nutrition education within FLE is therefore essential for empowering rural adolescent girls to make informed dietary choices and adopt lifelong healthy practices.

Government Initiatives for Digital Education in India

The Government of India is adopting new measures to ensure that every citizen has access to digital education by devising policies and systems that recognize its transformative power. With the rise of technology, quality digital education has become a prerequisite for students all over the country.

The National Education Policy 2020 campaign, promoted by the Ministry of Education, is set to transform India's digital learning space. It helps make learning easier through quality content, supported by various mechanisms and educational technology. Some of the major programs are:

- SWAYAM (Study Webs of Active Learning for Young Aspiring Minds) is an online course offering online courses from schools to University students.
- Swayam Prabha comprises a set of educational DTH channels featuring high-quality academic content, accessible 24/7.
- The National Digital Library is the largest repository of academic texts and surpasses millions of other learning resources.

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- E-Pathshala is a mobile and web app that offers and interacts with students through digital textbooks and learning materials.
- E-Shodh Sindhu is a powerful tool that provides access to numerous journals and e-books applicable to higher education.
- DIKSHA: A digital platform for teachers and students offering resources aligned with curriculum standards.
- National Repository of Open Educational Resources (NROER): Hosts multimedia learning materials in various languages.
- Virtual Labs: Enable remote access to science and engineering lab experiments.
- National Program on Technology Enhanced Learning (NPTEL): Provides technical education in engineering and sciences.
- Pragyata Guidelines: Offers a framework for digital learning in schools.

Together, these initiatives are helping millions of students gain knowledge and skills, shaping a more inclusive and future-ready education system in India.

Status of adolescent girls in Gujarat

According to the NFHS-5 (2019–21) Gujarat State Fact Sheet, adolescent girls and young women continue to experience significant health and social challenges that affect their overall well-being. Anemia remains a primary concern, with 69% of women aged 15–49 years in Gujarat being anemic. This reflects widespread nutritional deficiencies, including low iron intake and limited awareness about balanced diets.

Menstrual hygiene practices show mixed progress. NFHS-5 reports that **83% of young women aged 15–24 years** in Gujarat use hygienic methods of menstrual protection. While this marks an improvement compared to past surveys, gaps remain for girls from rural, tribal, and low-income households.

Early marriage continues to affect young women's health and education. NFHS-5 data indicate that **21% of women aged 20–24** in Gujarat were married before the legal age of 18. Early marriage increases vulnerability to early pregnancy, health complications, and interrupted schooling.

These findings highlight the need for continued educational interventions, such as Family Life Education (FLE), especially in nutrition, menstrual health, reproductive health, and life-skills development. Strengthening awareness and support systems is crucial for improving adolescent health outcomes and ensuring a smoother transition into adulthood.

Justification of the Study

Nutrition is a key factor in adolescent health, but rural adolescent girls often struggle to access reliable and helpful information about nutrition that fits their culture. Financial constraints, limited food options, cultural norms, and misunderstandings about healthy eating influence their eating habits. Therefore, many girls transition into adulthood without a solid understanding of nutrition. They experience fatigue, weakened immunity, menstrual pain, and increased long-term health risks. These problems highlight the urgent need to improve nutrition education as a vital part of Family Life Education (FLE).

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Nutrition affects adolescent health, but school curricula often provide limited or inconsistent information about diet. To fix this, schools should include practical topics for rural girls, such as budget-friendly meal planning, understanding the roles of micronutrients, and ways to improve diets with local foods. More organized nutrition education can address poor eating habits, correct misunderstandings about food, and encourage evidence-based choices.

Family Life Education (FLE) emphasizes the significance of Food and Nutrition for adolescent growth. Schools need to focus on teaching nutrition to help girls make smart choices, connect diet and health, and build lifelong healthy habits. With these adjustments, schools can help prevent poor health, low school attendance, weak concentration, and limited well-being among adolescent girls.

In rural Gujarat, economic pressures and cultural norms shape eating habits. There is a clear need for accessible, culturally relevant, and scientific nutrition education. Digital technology is a practical solution as many rural adolescents now have smartphones and internet access. E-learning modules can deliver engaging, visual, and language-appropriate content. These simplify complex nutrition concepts and give guidance not found at home or school.

Therefore, this study addresses the urgent need to improve nutrition knowledge among rural adolescent girls in Vadodara district. It aims to create targeted e-modules on Food and Nutrition. This will help fill existing knowledge gaps, encourage healthier behaviors, and empower adolescent girls to make informed choices that benefit their current and future health.

Objectives of the Study

1. To study the demographic profile of rural adolescent girls of Vadodara district
2. To assess the awareness level related to the food and nutrition area of family life education among rural adolescent girls of Vadodara district.
3. To assess the accessibility of media among rural adolescent girls of Vadodara district.
4. To identify the need for designing e-modules related to the food and nutrition area of family life education among rural adolescent girls of Vadodara district.

Methodology

The population under the study comprised rural adolescent girls aged 15-18 years and studying in 10th, 11th, and 12th standards of government schools from 5 selected villages, such as Shree Khodiyar School in Anagad Village, Koyali Vidhya Mandir in Koyali Village, Budhdev Vidhyalaya in Rayka Village, Shree Mahireva Ardars Vidhyalaya in Bajwa Village, and Shree Nandeshri Vidhyalaya in Nandesari Village of Vadodara district in the year 2024. The study sample comprised 105 girls in the 10th, 11th, and 12th grades. 21 girls from each government school in Vadodara district were selected using convenience sampling. The investigator prepared the questionnaire. Data was collected directly by the investigator through a structured questionnaire. For analysis, frequency and percentage methods were employed to interpret the responses.

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Findings of the Study

Background Information

A little more than one-fourth (36.2%), (32.4%), and (31.4%) of the respondents are in the 11th, 10th, and 12th standards, respectively. Among the mothers, less than half (43.8%) have completed primary schooling, while more than one-fourth (29.5%) are illiterate, and a little less than one-fourth (21.0%) have finished secondary schooling. Only 5.7% have attained higher secondary schooling. None of the mothers holds a graduate or postgraduate qualification. A little less than half (41.9%) of fathers have completed secondary schooling, 21.0% have completed primary schooling, and 11.4% have attained higher secondary schooling. Only 1.9% have a bachelor's degree, and no fathers have postgraduate degrees. A high majority (83.8%) of the mothers are engaged in housework, while very few are employed in the private sector (6.7%) or the government sector (5.7%), or are involved in farming (3.8%). A little more than half (52.4%) of the fathers work in the private sector, 21.9% are involved in agriculture, 17.1% are self-employed, and very few are engaged in labor work or employed in the government sector. The majority (67.6%) of respondents belong to joint families, and 25.7% to nuclear families. While only 6.7% from extended families.

Familiarity with Family Life Education and Awareness of Food and Nutrition

A very high majority (90.5%) of respondents are familiar with Family Life Education, while 9.5% are not. The majority (66.0%) of the respondents received information about Family Life Education in school, 18.9% from friends, 12.6% through community events, 9.4% from their mothers, and 2.9% from the media. More than one-fourth (38.1%) of the respondents are familiar with food and nutrition. A little more than half (55.2%) of the respondents received family life education as a school subject, while 44.8% did not.

A little less than half (43.8%) of the respondents consider food and nutrition the most important area.

Comfort level of discussing various areas of FLE with Peers and Adults

A high majority (72.4%) of the respondents are very comfortable discussing food and nutrition with their peers and adults.

Awareness Level on the Area of Family Life Education

A little less than a majority (58.0%) of the respondents are less aware of nutrition-related areas.

Accessibility and Ownership of a Smartphone or Computer

The majority (73.3%) have access to a smartphone or computer, while 26.7% do not. A little less than a majority (58.4%) do not own a personal smartphone, while 41.5% do. A little more than a high majority (66.6%) of respondents use their father's smartphone, whereas a little less than half (44.4%) use their mother's, and very few (2.2%) share smartphones with siblings or other relatives. A very high majority (90.0%) have internet access on smartphones or computers. The majority (77.1%) of respondents use mobile networks, whereas 18.5% use Wi-Fi, and only 2.9% use broadband for internet access. The majority (70.0%) of the

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respondents use the internet daily, while 18.6% use it monthly and 2.9% use it weekly or rarely. In contrast, 5.7% do not use the internet at all. A little more than half (51.4%) of the respondents are somewhat comfortable using technology and online resources, while a little more than one-fourth (31.4%) are very comfortable. At the same time, 17.1% are not comfortable.

Preference of language, content format of e-modules, duration, and medium for Learning Family Life Education

A very high majority (91.4%) of respondents believe there is a need for family life education, while 8.6% do not. A little less than a majority (89.5%) prefer e-modules in the Gujarati language, 19.7% prefer it in the English language, and no respondents prefer the Hindi language for developing e-modules. Less than half (49.0%) of the respondents prefer video content, and 43.8% prefer animated presentations as formats for developing e-modules, respectively. At the same time, smaller percentages prefer text-based information, audio, or interactive quizzes. A little less than a majority (56.3%) of respondents prefer e-module sessions of less than 10 minutes, whereas 21.9% prefer sessions of 10-20 minutes, and 15.6% prefer sessions of 20-30 minutes. Only 6.7% prefer sessions longer than 30 minutes. Less than half (44.9%) of the respondents prefer online platforms, 33.3% prefer in-person workshops, and very few prefer printed materials or mobile applications.

Conclusion

From the present study, it can be concluded that Family Life Education (FLE) is perceived as needing improvement. Most of the respondents are high school students, so the educational content should be designed specifically for their level and interests.

The educational backgrounds of parents show that many mothers have only completed primary education or are illiterate, while most fathers have finished secondary school. This suggests a need to help both parents and students improve their education. Most mothers are involved in housework, and many fathers work in the private sector or farming. This indicates a need for practical training to improve job opportunities. Since many respondents come from joint families, this substantial family support could be used to help with educational programs. Many respondents are aware of Family Life Education, with a particular interest in food and nutrition. This shows that these topics should be included in educational materials. Since respondents prefer video and animated presentations, these formats should be used to keep them interested.

Most respondents have access to smartphones or computers and use mobile networks for the internet. However, some do not own personal smartphones, so educational content should work well across different learning formats. Respondents prefer short e-module sessions (less than 10 minutes), so keeping content brief will be more effective. Respondents prefer receiving educational materials in the Gujarati language, so the content needs to be created accordingly. They also prefer online learning over printed materials or mobile apps, so a mix of online and in-person sessions would be best.

In Summary, to make family life education engaging and relevant, content should be created for high school students to help their parents improve their education and utilize suitable

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formats, such as videos and animations. By addressing these needs, FLE programs will be more effective and accessible to everyone.

References

Digital education in India - Initiatives by the Ministry of Education. (2023, February 2). Testbook. https://testbook.com/ias-preparation/digital-education-in-india

International Institute for Population Sciences (IIPS) & ICF. (2021). *National Family Health Survey (NFHS-5), 2019–21: Gujarat State Report.* Mumbai: IIPS.

Ladly Faiz, Hasina Banu, Devi Sharma, chapter-1 Adolescent Family Life Education Program, ADOLESCENT FAMILY LIFE EDUCATION: REVIEW OF CURRICULUM- A final report https://pdf.usaid.gov/pdf_docs/pnack924.pdf

Mohapatra S. (2021) Unit-2: Family life education- concept and meaning https://egyankosh.ac.in/handle/123456789/79999

NCERT. (2021). *Adolescence Education Program: Life Skills Development Modules.* National Council of Educational Research and Training. https://ncert.nic.in

Nep 2020 school education policy for online classes https://leadschool.in/blog/thriving-in-the-new-digital-age-is-what-nep-policy-2020-envisions-how-can-your-school-step-up/#:~:text=NEP%20Policy%202020%20advocates%20the,COVID%2D19%20pandemic%20has%20shown.

Prof. Chacko. T Unit 3 Importance of Family Life Education https://www.egyankosh.ac.in/bitstream/123456789/80000/1/Unit-3.pdf

UNICEF India. (2020). *Adolescent Development and Participation.* United Nations Children's Fund India. https://www.unicef.org/india/