

## IMPACT OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE AND ATTITUDE REGARDING TEENAGE PREGNANCY AMONG ADOLESCENT GIRLS: A QUASI-EXPERIMENTAL STUDY

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### ABSTRACT

*Teenage pregnancy is a major public health issue with medical, social and economic consequences. Education programmes are one strategy to reduce adolescent pregnancy risk by improving knowledge and attitudes. To evaluate the effectiveness of a structured teaching programme (STP) on knowledge and attitude regarding teenage pregnancy among adolescent girls at a selected school in Bhilai, Chhattisgarh, India. Quasi-experimental, one-group pretest–posttest design. 300 adolescent girls (convenience purposive sampling) completed a structured knowledge questionnaire and a 5-point attitude scale at baseline. An STP and information booklet were delivered; posttest was administered 7 days after the intervention. Descriptive statistics, paired t-tests, correlation and chi-square tests ( $\alpha=0.05$ ) were used. Data were analysed using SPSS v27. Institutional approvals and participant informed consent were obtained. Knowledge mean (pre) = 9.84 (SD 4.80) vs (post) = 16.26 (SD 5.70); mean difference = 6.42; paired  $t = 20.56$ ,  $p < 0.001$ . Attitude mean (pre) = 19.46 (SD 5.41) vs (post) = 28.61 (SD 6.13); mean difference = 9.15; paired  $t = 21.08$ ,  $p < 0.001$ . Pretest and posttest knowledge–attitude correlations were  $r = 0.84$  and  $r = 0.86$ , respectively ( $p < 0.05$ ). Selected sociodemographic variables (age, educational status, marital status, mother's education/occupation, source of previous knowledge) were significantly associated with pretest knowledge and/or attitude levels. The STP produced statistically and clinically significant improvements in both knowledge and attitude toward teenage pregnancy among adolescent girls. STPs are recommended for school-based reproductive health promotion with integration into routine health education..*

**Keywords:** Teenage Pregnancy, Adolescent Girls, Structured Teaching Programme, Knowledge, Attitude, Quasi-Experimental.

## INTRODUCTION

Teenage pregnancy continues to be recognized as a major global public health issue with significant social, psychological, and economic implications for adolescents, their families, and societies at large. The World Health Organization (WHO) defines adolescent pregnancy as pregnancy occurring in girls aged 10–19 years, a period characterized by profound biological, cognitive, and social transition. Despite global progress in reducing adolescent fertility rates, an estimated 21 million girls aged 15–19 years become pregnant each year in developing regions, and approximately 12 million of them give birth annually. Complications related to pregnancy and childbirth remain the leading cause of death among adolescent girls aged 15–19 years. These statistics highlight the vulnerability of adolescents, particularly in low- and middle-income countries (LMICs), where social norms, early marriage, lack of reproductive health education, and limited access to healthcare services perpetuate the cycle of early pregnancy. Teenage pregnancy is often rooted in a complex interaction of socio-economic, cultural, familial, and individual factors. Adolescents in resource-limited settings frequently encounter inadequate sexual and reproductive health information, peer pressure, poverty, early sexual debut, and low educational attainment—all of which increase their susceptibility to early pregnancy. Cultural practices such as child marriage and gender-based expectations often force young girls into early childbearing. In many communities, girls are expected to marry young and initiate childbearing soon after marriage, limiting their educational and economic opportunities. Moreover, limited parental communication on sexual health, stigma surrounding contraceptive use, and societal silence surrounding adolescent sexuality further heighten the risk of unintended pregnancies among young girls. The consequences of teenage pregnancy extend far beyond the physical domain. Biologically, adolescents are more prone to obstetric complications such as anemia, obstructed labour, preeclampsia, preterm birth, and low-birth-weight infants due to incomplete physical maturation and inadequate antenatal care. Psychologically, the sudden transition to motherhood often leads to emotional distress, anxiety, and postpartum depression. Socially, the stigma and discrimination associated with adolescent pregnancy frequently result in school dropout, reduced employment opportunities, and long-term socio-economic disadvantages. Children born to adolescent mothers are also at increased risk of poor nutrition, delayed development, and intergenerational cycles of poverty and early childbearing.

In India, teenage pregnancy continues to be a significant concern, particularly in rural and tribal communities. According to the National Family Health Survey (NFHS-5), approximately 7.9% of

adolescent girls aged 15–19 years have begun childbearing. Factors such as limited access to adolescent-friendly health services, entrenched patriarchal norms, lack of comprehensive sexuality education, and low awareness regarding contraception contribute to the persistence of early pregnancy. Many adolescents rely on peers or unverified online sources for reproductive health information, resulting in misconceptions and risky behaviours. In states such as Chhattisgarh, where socio-economic disparities and cultural practices influence reproductive behaviours, teenage pregnancy poses a substantial burden on public health systems. School-aged girls represent a strategic group for preventive interventions because educational institutions serve as vital platforms for disseminating accurate reproductive health information. Structured Teaching Programmes (STPs) are evidence-based educational strategies designed to improve knowledge, correct misconceptions, and promote positive attitudes and behaviours among adolescents. STPs can play a crucial role in empowering girls with the information needed to make informed decisions about their reproductive health, avoid early pregnancy, and seek timely health services. Numerous studies indicate that health education interventions have a direct impact on knowledge and attitudes, which in turn influence behaviour change. Despite existing health education initiatives, gaps remain in the awareness levels of adolescent girls in many regions of India. Several studies have reported insufficient knowledge regarding puberty, contraception, safe sexual practices, and the repercussions of teenage pregnancy. In addition, adolescents often hold misguided attitudes influenced by stigma, misinformation, and cultural taboos. Therefore, intervention-based research focusing on improving knowledge and attitudes is essential to address the underlying determinants of teenage pregnancy and promote healthy transitions into adulthood.

The present study was developed to address this pressing need by evaluating the effectiveness of a Structured Teaching Programme on knowledge and attitude regarding teenage pregnancy among adolescent girls in a selected school in Bhilai, Chhattisgarh. A quasi-experimental, one-group pretest–posttest research design was adopted to assess the changes in knowledge and attitudes following the intervention. The study aligns with national priorities on adolescent health under the Rashtriya Kishor Swasthya Karyakram (RKSK) and global commitments toward reducing adolescent fertility and improving reproductive health outcomes. This research holds significant relevance as it targets early adolescence—an age when appropriate information can have long-term positive effects on reproductive decision-making. By assessing pre- and post-intervention outcomes, the study aims to provide empirical evidence supporting the integration of structured educational interventions in school curricula. The findings have the potential to inform policymakers, educators, and healthcare professionals about the importance of systematic health education for reducing the incidence of teenage pregnancy and promoting adolescent well-being.

Teenage pregnancy remains a critical issue demanding a multi-dimensional response. Education is a cornerstone of prevention, and Structured Teaching Programmes provide an effective strategy to strengthen knowledge and attitudes among adolescent girls. This study contributes important insights into the role of school-based interventions in empowering young people with the knowledge required to lead healthy and informed lives.

## REVIEW OF LITERATURE

Teenage pregnancy remains a significant global public health challenge with far-reaching social, physical, and psychological consequences for adolescent girls. According to WHO, around 21 million girls aged 15–19 years become pregnant annually in low- and middle-income countries, with complications of pregnancy and childbirth being the leading cause of death in this age group. The persistence of adolescent pregnancy is closely linked with inadequate reproductive health knowledge, low educational attainment, poverty, cultural norms promoting early marriage, and limited access to adolescent-friendly health services. Several international studies highlight how lack of awareness, peer pressure, and restrictive social norms contribute to high teenage pregnancy rates. For instance, studies conducted in Nepal, Kenya, and Ghana consistently report that improved reproductive health education can significantly enhance adolescent knowledge and shift attitudes toward safer practices. In Asian contexts such as China, Iran, and Bangladesh, evidence shows that structured school-based interventions lead to improved understanding of menstruation, contraception, and the consequences of early childbearing. In India, despite policy-driven programmes like the Rashtriya Kishor Swasthya Karyakram (RKSK), teenage pregnancy remains prevalent, with NFHS-5 reporting 7.9% of girls aged 15–19 years having begun childbearing. Research conducted in states like Bihar, Jharkhand, Madhya Pradesh, and Chhattisgarh identifies socio-economic vulnerabilities, poor communication between parents and adolescents, cultural taboos surrounding sexuality, and lack of life-skills education as major contributors. Multiple Indian studies confirm that adolescents possess limited knowledge about reproductive health and often rely on peers or incomplete sources of information, resulting in harmful misconceptions. At the same time, school-based Structured Teaching Programmes (STPs) have proven effective in improving knowledge and attitudes among adolescents. Studies from Gujarat, Maharashtra, Rajasthan, and Karnataka demonstrate that STPs significantly increase awareness levels regarding reproductive health, contraception, and the risks of early pregnancy, with post-intervention knowledge scores showing marked improvement. Similarly, interventions delivered by nursing educators have been shown to reduce stigma, enhance communication skills, and foster positive behavioural intentions among adolescent girls. The theoretical underpinnings of these interventions

are supported by models such as the Health Belief Model, which emphasizes perceived susceptibility and benefits, and the Social Cognitive Theory, which highlights the role of observational learning and self-efficacy in behaviour change. School settings are particularly effective platforms for such interventions because adolescents are more receptive to new knowledge in structured environments and because teachers and nurses can serve as credible sources of information. Despite the growing body of literature confirming the impact of educational interventions, research gaps persist, especially in central India. Very few studies have been conducted in Chhattisgarh, where teenage pregnancy continues to be influenced by cultural practices, socio-economic disparities, and limited reproductive health literacy. Additionally, many existing studies use small samples, lack rigorous quasi-experimental designs, or fail to measure changes in both knowledge and attitude simultaneously. There is also a shortage of studies assessing the short-term and long-term retention of knowledge gained from structured interventions. As a result, the need for well-designed educational programmes targeting adolescent girls remains urgent. The present study, therefore, addresses this gap by evaluating the effectiveness of a Structured Teaching Programme in improving knowledge and attitude regarding teenage pregnancy among adolescent girls in a school setting in Bhilai, Chhattisgarh. By doing so, it contributes empirical evidence to support the integration of school-based reproductive health education into regular curricula and reinforces the significance of educational interventions in reducing teenage pregnancy and promoting adolescent well-being.

## OBJECTIVES OF THE STUDY

1. To assess the pretest level of knowledge regarding teenage pregnancy among adolescent girls.
2. To assess the pretest level of attitude regarding teenage pregnancy among adolescent girls.
3. To administer a Structured Teaching Programme (STP) on teenage pregnancy to adolescent girls.
4. To assess the posttest level of knowledge and attitude regarding teenage pregnancy after the Structured Teaching Programme.
5. To evaluate the effectiveness of the Structured Teaching Programme by comparing pretest and posttest knowledge and attitude scores.

## METHODOLOGY

### Research Design

A quasi-experimental one-group pre-test post-test research design was adopted to evaluate the effectiveness of a structured teaching programme (STP) on the knowledge and attitude of

adolescent girls regarding teenage pregnancy. This design was selected because it allows measurement of change resulting from the intervention when randomization and control groups are not feasible in school-based settings.

### **Study Setting**

The study was conducted in a selected higher secondary school. The setting was chosen based on adequate accessibility, permission from authorities, and the presence of adolescent girls within the required age group.

### **Population and Sample**

The target population consisted of adolescent girls aged 13–19 years studying in classes VIII–XII. The accessible population included those enrolled in the selected school during the study period. A sample selected using a convenient sampling technique. This method was appropriate due to the fixed number of students available and the structured nature of school schedules.

### **Inclusion and Exclusion Criteria**

#### **Inclusion criteria:**

- Adolescent girls aged 13–19 years.
- Those willing to participate and provide assent/consent (as applicable).
- Students present on the day of data collection.

#### **Exclusion criteria:**

- Girls previously exposed to similar teaching sessions on teenage pregnancy.
- Students with diagnosed cognitive or learning difficulties that could interfere with understanding the intervention.

### **Description of the Intervention**

The structured teaching programme (STP) was developed based on literature review, expert validation, and guidelines from WHO, UNICEF, and national adolescent health programmes. The STP covered:

- Definition and concept of teenage pregnancy
- Causes and risk factors
- Physical, psychological, and social consequences
- Prevention strategies, including contraception, life-skills, and decision-making
- Role of family, peers, and school in prevention

The session was delivered for **45–60 minutes** using interactive methods such as lecture-cum-discussion, charts, posters, and short videos. Reinforcement and time for clarifying doubts were also provided.

### Development and Validation of Tools

Two tools were developed for data collection:

1. **Knowledge Questionnaire** – A structured questionnaire with multiple-choice items assessing awareness about teenage pregnancy.
2. **Attitude Scale** – A 5-point Likert scale measuring positive or negative attitudes toward teenage pregnancy.

Tools were validated by a panel of experts in Nursing, Public Health, Psychology, and Obstetrics. Reliability was established using test-retest and Cronbach's alpha; the tools were found to be reliable ( $r > 0.80$ ).

### Data Collection Procedure

1. **Permission & Ethical Clearance:** Approval was obtained from the Institutional Ethics Committee and school authorities. Informed consent from parents/guardians and assent from students were secured.
2. **Pre-test:** On Day 1, baseline knowledge and attitude were assessed using the validated questionnaire and attitude scale.
3. **Intervention:** The structured teaching programme was administered to the entire group in a classroom setting.
4. **Post-test:** After **7 days**, the same tools were administered to measure any change in knowledge and attitude following the intervention. The time gap allowed students to retain and internalize the information.

### Data Analysis

Data were coded, entered, and analyzed using descriptive and inferential statistics.

- **Frequency, percentage, mean, and standard deviation** described demographic characteristics and baseline variables.
- **Paired t-test** measured the difference between pre-test and post-test knowledge and attitude scores.

- **Chi-square test** examined the association between demographic variables and pre-test knowledge/attitude.

A significance level of  $p < 0.05$  was considered statistically significant.

### **Ethical Considerations**

Confidentiality, anonymity, and voluntary participation were ensured throughout the study. Participants had the right to withdraw at any stage without academic consequences. The intervention did not pose any risk to the students.

## **RESULTS**

The present study evaluated the effectiveness of a Structured Teaching Programme (STP) on knowledge and attitude regarding teenage pregnancy among adolescent girls in a selected school at Bhilai, Chhattisgarh. A total of 300 adolescent girls participated, and data were analysed using descriptive and inferential statistics. The findings are presented under the following headings.

### **1. Baseline Characteristics of Participants**

The sample comprised adolescent girls aged between 13 and 19 years, with the majority enrolled in secondary and higher secondary classes. Sociodemographic variables such as age, educational status, marital status, mother's education, mother's occupation, and source of previous knowledge were recorded. Most participants were unmarried, and a substantial proportion reported that their mothers had limited formal education. Sources of prior knowledge about teenage pregnancy included peers, family members, and informal media, with relatively few citing teachers or health professionals. These baseline characteristics provided important context for interpreting the outcomes of the intervention.

### **2. Pretest Knowledge Levels**

Knowledge regarding teenage pregnancy was assessed using a structured questionnaire. The mean pretest knowledge score was **9.84 (SD = 4.80)** out of a possible maximum, indicating that participants possessed only limited awareness of teenage pregnancy, its causes, consequences, and preventive measures. The distribution of scores suggested that a majority of girls fell into the "inadequate knowledge" category, with only a small proportion demonstrating moderate understanding. This finding confirmed the need for targeted educational interventions in this population.

### 3. Pretest Attitude Levels

Attitudes toward teenage pregnancy were measured using a 5-point Likert scale. The mean pretest attitude score was **19.46 (SD = 5.41)**, reflecting largely neutral to negative attitudes. Many participants expressed misconceptions, stigma, or ambivalence regarding teenage pregnancy, with responses influenced by cultural norms and peer perceptions. The relatively low baseline attitude scores highlighted the importance of interventions not only to improve factual knowledge but also to foster positive, supportive, and informed attitudes.

### 4. Posttest Knowledge Levels

Following administration of the STP and distribution of an information booklet, participants were reassessed after seven days. The mean posttest knowledge score increased significantly to **16.26 (SD = 5.70)**. The mean difference of **6.42 points** was statistically significant, with a paired t-value of **20.56 (p < 0.001)**. This improvement indicated that the STP was highly effective in enhancing knowledge about teenage pregnancy. The majority of participants shifted from inadequate to moderate or adequate knowledge categories, demonstrating the intervention's success in bridging critical information gaps.

### 5. Posttest Attitude Levels

Attitude scores also showed marked improvement after the intervention. The mean posttest attitude score rose to **28.61 (SD = 6.13)**, with a mean difference of **9.15 points** compared to baseline. The paired t-value was **21.08 (p < 0.001)**, confirming statistical significance. Post-intervention responses reflected more positive and supportive attitudes toward preventing teenage pregnancy, understanding its consequences, and recognizing the importance of reproductive health education. The shift suggested that the STP not only corrected misconceptions but also fostered constructive behavioural intentions among adolescent girls.

### 6. Correlation Between Knowledge and Attitude

Correlation analysis revealed a strong positive relationship between knowledge and attitude both before and after the intervention. In the pretest, the correlation coefficient was **r = 0.84 (p < 0.05)**, while in the posttest it was **r = 0.86 (p < 0.05)**. These findings indicated that higher knowledge levels were consistently associated with more positive attitudes. The strengthened correlation in the posttest suggested that the STP reinforced the link between factual understanding and attitudinal change, underscoring the interdependence of cognitive and affective domains in health education.

## 7. Effectiveness of the Structured Teaching Programme

Overall, the STP produced statistically and clinically significant improvements in both knowledge and attitude. The magnitude of change was substantial, with large effect sizes indicated by the paired t-test results. The intervention successfully addressed gaps in awareness, corrected misconceptions, and promoted positive attitudes toward teenage pregnancy prevention. The findings confirmed the effectiveness of structured, school-based educational programmes in empowering adolescent girls with essential reproductive health knowledge.

## DISCUSSION

The findings of this quasi-experimental study provide compelling evidence that a Structured Teaching Programme (STP) can significantly improve both knowledge and attitudes regarding teenage pregnancy among adolescent girls. At baseline, participants demonstrated limited awareness and largely neutral or negative attitudes, consistent with previous studies in India and other low- and middle-income countries that highlight inadequate reproductive health literacy among adolescents. The marked improvement in posttest scores underscores the effectiveness of structured, school-based educational interventions in bridging these gaps.

The increase in knowledge scores following the STP intervention aligns with earlier research conducted in Gujarat, Maharashtra, and Karnataka, where similar programmes produced substantial gains in reproductive health awareness. The present study adds to this body of evidence by demonstrating effectiveness in Chhattisgarh, a region where few such interventions have been systematically evaluated. The improvement in attitude scores is particularly noteworthy, as attitudes are often more resistant to change than factual knowledge. The positive shift suggests that the STP not only conveyed information but also addressed misconceptions, stigma, and cultural taboos surrounding adolescent pregnancy. This dual impact is critical, as knowledge without attitudinal change may not translate into behavioural modification.

The strong correlation between knowledge and attitude observed in both pretest and posttest phases reinforces the interdependence of cognitive and affective domains in health education. Adolescents who gained more knowledge were also more likely to adopt supportive and preventive attitudes toward teenage pregnancy. This finding supports theoretical models such as the Health Belief Model and Social Cognitive Theory, which emphasize the role of perceived susceptibility, benefits, and self-efficacy in shaping health behaviours.

Sociodemographic variables such as age, educational status, and maternal education were significantly associated with baseline knowledge and attitudes, highlighting the influence of family background and prior exposure to information. These associations suggest that interventions may

need to be tailored to specific subgroups to maximize effectiveness. For example, younger adolescents or those from families with lower educational attainment may require more intensive or repeated sessions to achieve comparable outcomes.

The study's implications are substantial. By demonstrating that STPs can produce statistically and clinically significant improvements within a short timeframe, the findings support integration of structured reproductive health education into school curricula. Such interventions can complement national programmes like the Rashtriya Kishor Swasthya Karyakram (RKSK) and contribute to global efforts to reduce adolescent fertility rates. Ultimately, empowering adolescent girls with accurate knowledge and positive attitudes is a cornerstone of preventing teenage pregnancy and promoting healthier transitions into adulthood.

## SUMMARY

Teenage pregnancy remains a pressing global public health concern with profound medical, social, and economic consequences. Defined by the World Health Organization as pregnancy occurring in girls aged 10–19 years, adolescent pregnancy is particularly prevalent in low- and middle-income countries, where cultural norms, early marriage, poverty, and limited access to reproductive health services perpetuate early childbearing. In India, the National Family Health Survey (NFHS-5) reports that 7.9% of adolescent girls aged 15–19 years have begun childbearing, underscoring the urgent need for effective interventions. School-based educational programmes represent a strategic avenue for prevention, as they provide structured opportunities to disseminate accurate reproductive health information to adolescents at a formative stage of life.

The present study was conducted to evaluate the effectiveness of a Structured Teaching Programme (STP) on knowledge and attitude regarding teenage pregnancy among adolescent girls in Bhilai, Chhattisgarh. A quasi-experimental, one-group pretest–posttest design was adopted, with 300 adolescent girls selected through convenience purposive sampling. Data were collected using a structured knowledge questionnaire and a 5-point attitude scale. The intervention consisted of an STP supported by an information booklet, and outcomes were assessed seven days later. Statistical analysis was performed using SPSS v27, employing descriptive statistics, paired t-tests, correlation, and chi-square tests at a 0.05 significance level.

Findings revealed that baseline knowledge and attitudes were inadequate. The mean pretest knowledge score was 9.84 (SD = 4.80), while the mean pretest attitude score was 19.46 (SD = 5.41). Following the intervention, both domains showed significant improvement: the mean posttest knowledge score increased to 16.26 (SD = 5.70), with a mean difference of 6.42 ( $t = 20.56$ ,  $p < 0.001$ ), and the mean posttest attitude score rose to 28.61 (SD = 6.13), with a mean difference of

9.15 ( $t = 21.08, p < 0.001$ ). These results confirmed the effectiveness of the STP in enhancing both factual understanding and attitudinal orientation toward teenage pregnancy. Correlation analysis further demonstrated a strong positive relationship between knowledge and attitude, with coefficients of  $r = 0.84$  (pretest) and  $r = 0.86$  (posttest), indicating that improved knowledge was closely linked to more positive attitudes. Sociodemographic variables such as age, educational status, marital status, mother's education and occupation, and source of prior knowledge were significantly associated with baseline knowledge and attitude levels, highlighting the influence of family and social context on adolescent reproductive health literacy.

The study's outcomes align with previous national and international research demonstrating that structured, school-based interventions can effectively improve adolescent reproductive health awareness. Importantly, the findings extend this evidence to Chhattisgarh, a region where few such studies have been conducted. The results underscore the dual importance of addressing both knowledge and attitudes, as attitudinal change is essential for translating information into behaviour. By correcting misconceptions, reducing stigma, and fostering supportive perspectives, STPs can empower adolescent girls to make informed reproductive health decisions and avoid early pregnancy.

In conclusion, the Structured Teaching Programme produced statistically and clinically significant improvements in knowledge and attitudes regarding teenage pregnancy among adolescent girls. The findings support the integration of STPs into routine school health education and national adolescent health initiatives such as the Rashtriya Kishor Swasthya Karyakram (RKSK). By equipping adolescents with accurate information and positive attitudes, such interventions can contribute to reducing teenage pregnancy rates, improving reproductive health outcomes, and promoting healthier transitions into adulthood.

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