

Report on the Evaluation of **'Sphoorthi'** Adolescent Empowerment Project in Koppal District, Karnataka



Implemented by
KHPT

Evaluation conducted by
**Prasanna School of Public Health
Manipal Academy of Higher Education
Manipal, 2025**

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ABBREVIATIONS

Abbreviations	Expansion
ANM	Auxiliary Nurse and Midwife
APPI	Azim Premji Philanthropic Initiatives
ASHA	Accredited Social Health Activist
BA	Bachelor of Arts
COVID-19	
FGD	Focus Group Discussions
GNM	General Nursing and Midwifery
GPs	Gram Panchayat
IDI	In-Depth Interview
KHPT	Karnataka Health Promotion Trust
LCRP	Local Community Resource Person
MAHE	Manipal Academy of Higher Education
MSW	Master of Social Work
NGO	Non-Governmental organizations
NRLM	National Rural Livelihood Mission
PDO	Panchayat Development Officer
PUC	Pre-University College
RE-AIM	Reach, Effectiveness, Adoption, Implementation, Maintenance
RTE	Right To Education
SDGs	Sustainable Development Goals
SDMC	School Development and Monitoring Committee
SHG	Self-Help Groups
SSLC	Secondary School Leaving Certificate
UNICEF	The United Nations International Children's Emergency Fund
WCPC	Women and Children Protection Centre

EXECUTIVE SUMMARY

The Sphoorthi adolescent empowerment program, implemented between 2016 and 2018 in **Koppal District, Karnataka**, was designed to improve the lives of adolescent girls by enhancing educational attainment, delaying early marriage, improving nutritional status, and strengthening gender-equitable attitudes and negotiation skills. This evaluation aimed to assess the program's **effectiveness among young women aged 19–23 years**, focusing on key outcome areas: education, marriage, nutrition, agency, and family dynamics. It also explored the **influence of the intervention on parents** in terms of gender role perceptions, decision-making, and parent–daughter relationships.

OBJECTIVES OF THE EVALUATION

1. To evaluate the impact of the Sphoorthi project on educational attainment, dietary diversity, and age-at-marriage among young women.
2. To understand how the intervention shaped gender perspectives, negotiation abilities, and self-respect among girls.
3. To explore the influence of the program on parental understanding of gender roles, rights, and communication with daughters.

METHODOLOGY

The evaluation employed a concurrent mixed-methods design, combining quantitative surveys and qualitative interviews conducted simultaneously to comprehensively assess the Sphoorthi program's impact. The study was carried out in Koppal District, Karnataka, comparing 46 villages from Koppal Taluk (intervention area) with 46 villages from Kushtagi Taluk (non-intervention area). A total of 1,380 females aged 19–23 years were surveyed using a structured, validated questionnaire to measure educational attainment, dietary diversity, age at marriage, gender perspectives, and empowerment indicators. Villages were selected through probability proportional to size (PPS) sampling, and participants were systematically sampled within villages. Qualitative data were collected via in-depth interviews and focus group discussions with adolescent girls, parents, community stakeholders, and program implementers, using purposive sampling to capture diverse perspectives. The RE-AIM framework guided both data collection and analysis, evaluating Reach, Effectiveness, Adoption, Implementation, and Maintenance of the program. Ethical approval was obtained, and informed consent was secured from all participants. This approach provided robust, multi-dimensional insights into the program's outcomes and implementation processes.

KEY FINDINGS

The Sphoorthi program demonstrated meaningful impact across multiple dimensions evaluated through the RE-AIM framework.

- **REACH**

The program reached a substantial number of adolescent girls from diverse socio-economic backgrounds across the intervention area. Despite its wide reach, some girls faced challenges in consistent participation due to factors such as mobility constraints, parental hesitation, and household restrictions and responsibilities.

- **EFFECTIVENESS**

Sphoorthi was effective in contributing to increasing educational attainment, delayed age at marriage, improved dietary practices, and enhanced self-confidence and gender awareness among participants. Quantitative findings reinforce these trends:

- Educational attainment** was significantly higher among girls in the intervention group, with 40.4% having completed graduation or higher education compared to only 24.1% in the non-intervention group.
- School dropout rates** were consistently lower in the intervention area compared to the non-intervention area. Overall, 52.4% of adolescents dropped out in the intervention area, compared to 71.6% in the non-intervention area. The dropout rate between 6th and 8th grade was significantly lower in the intervention area (7.87%) than in the non-intervention area (15.53%). Similarly, during the 9th to 10th grade, the dropout rate was 27.78% in the intervention area versus 31.70% in the non-intervention area.
- Marriage pattern** showed that 37.5% of girls in the intervention group were married, compared to 54.6% in the non-intervention group. Among married girls, 6% in the intervention group married before legal age 18, compared to 17% in the non-intervention group.
- Psychosocial outcomes** measured using the Mann-Whitney U test showed statistically significant ($p < 0.001$) higher scores for gender role attitudes, self-esteem, and self-efficacy among intervention participants. Participants were more likely to report higher self-esteem and self-efficacy, especially those with education beyond higher secondary school.

- **ADOPTION**

The program received strong buy-in from key community stakeholders, including ASHA workers, Anganwadi teachers, and Gram Panchayat members, who played active roles in mobilizing and supporting the intervention.

- **IMPLEMENTATION**

Program delivery was consistent and adapted to the local context. However, challenges persisted in achieving uniform parental involvement and in extending the program's reach to out-of-school girls and boys.

• MAINTENANCE

Stakeholders and participants expressed strong interest in sustaining the program. Encouragingly, some elements have already been incorporated into local planning initiatives. However, systematic follow-up with participants and additional institutional and budgetary support are essential for long-term sustainability. This evaluation, conducted seven years after the program's implementation, highlighted sustained changes among participants, including increased marriage age, improved educational attainment, and enhanced decision-making skills and self-confidence.

Notably, 28.7% of girls in the intervention group reported negotiating with community leaders about child marriage, compared to only 9.8% in the non-intervention group. Similarly, 32.7% of intervention participants negotiated for continued girls' education, nearly double the 15.8% in the non-intervention group. Moreover, 43.6% of girls in the intervention group supported the continuation of education for other girls, in contrast to 27.8% in the non-intervention group.

RECOMMENDATIONS

1. **Scale-Up:** Expand the Sphoorthi program to other taluks and districts, especially those with similar socio-economic and gender challenges.
2. **Continuation and Institutional Support:** Advocate for state-level policy adoption and budgetary allocation to sustain and expand Sphoorthi.
3. **Interdepartmental Collaboration:** Enhance coordination among health, education, and women's welfare departments, and rural development and panchayati raj department to maximize program reach and efficiency.
4. **Priority to Sphoorthi Participants:** Create special pathways for Sphoorthi alumni in vocational training, higher education, and livelihood schemes.
5. **Program Adaptation:** Update program modules to reflect evolving adolescent needs, including digital literacy, cyber safety, and climate resilience.
6. **Vocational and Life Skills Training:** Integrate hands-on, career-oriented training modules to support economic independence.

CONCLUSION

The Sphoorthi adolescent empowerment program demonstrates promising outcomes in addressing key challenges faced by adolescent girls in rural Karnataka. Even after seven years, the program's impact remains visible - girls continue to demonstrate improved educational attainment, delayed age of marriage, and stronger negotiation skills. Notably, they uphold more equitable gender norms and show sustained engagement with peers, families, and communities through practices rooted in Personal Development and Reflection. It enhanced not only individual capacities but also family and community-level attitudes towards gender equality. The program's success underlines the need for sustained, multi-sectoral investments and scale-up to build a more supportive ecosystem for adolescent development.

INTRODUCTION

Koppal district, located in the northern part of Karnataka, is one of the backward districts. As per the 2011 census, the population of the district is 1,389,920, and the female literacy rate is significantly lower at 54.85 percent, where the male-female literacy gap in the district is 22 percent (1).

In fact, in terms of its composite development index, Koppal is ranked 25th out of the 30 districts of Karnataka. In the Gender Index, it has the 30th rank. The Child Development Index (measuring health, education, and nutrition) for Koppal is the second lowest in the state, at 29th rank. In terms of food security, Koppal stands at the 28th rank. The overall incidence of poverty (2011-12) in the district is 40.7 percent and remains significantly higher than the state level (21 percent). The region's high rates of poverty, unemployment, and illiteracy, ill-equipped and understaffed schools, feudal agrarian social structure, and pervasive gender discrimination discourage parents from enrolling girls in school and cause many girls to drop out of school. Many adolescent girls in the Koppal district have heightened vulnerability and diminished quality of life. Important causative factors are that, instead of being given a decent secondary education and an opportunity to participate in major decisions affecting their lives, these girls are forced by structural factors, including poverty, schools that commonly lack one or more government-mandated facilities, patriarchal culture, and discriminatory gender norms and practices, to leave school for marriage or work.

Inequitable gender norms and traditional restrictions that limit female aspirations significantly impact the quality of life for disadvantaged adolescent girls in Koppal district, Karnataka. Numerous girls in the Koppal district have encountered challenges, including early marriage, teenage pregnancy, restricted access to education, dropping out of school, lack of awareness of health and hygiene, limited mobility, and discriminatory upbringing, all of which impede their capacity to achieve their goals (2, (3). Furthermore, societal norms and conventional roles often impose household responsibilities on them, restricting their chances for personal growth and advancement (4).

'Sphoorthi' is a three-year (2016-2018) project implemented by Karnataka Health Promotion Trust (KHPT), funded by the Azim Premji Philanthropic Initiatives (APPI) in Koppal district of Karnataka. The goal was to improve the quality of life of 4240 adolescent girls from disadvantaged/marginalized communities by enhancing education, health, nutrition status and agency across 51 villages in Koppal (5).

The project components include strengthening and increasing awareness among role models and peer girls, engaging the families, and making them understand gender equity and the importance of educating girls. Engage with key community leaders to foster positive gender and social norms, increase confidence among adolescent girls to create opportunities for their involvement in social actions, and transform their attitude to confront negative gender and social norms.

An end-line external evaluation of the project was conducted and reported in November 2018. To study the outcome and impact of the interventions, qualitative interviews were conducted among the various project stakeholders, such as adolescent girls who participated in the project activities and their parents, boys' groups, the implementers team (KHPT), government functionaries, community leaders, and non-program adolescent girls. The cascading effect of the program was reported, saying that the project resulted in changing the empowerment level of the entire community. However, there were instances of poor planning and less than efficient implementation (6).

RATIONALE FOR EVALUATION

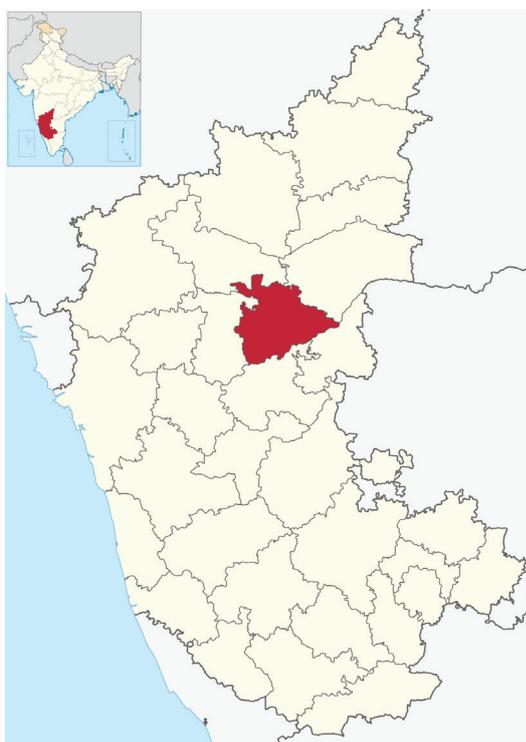
The Sphoorthi Project, implemented by the KHPT, aims to improve the quality of life for adolescent girls aged 13-16 years of age from disadvantaged/marginalized communities in the Koppal block of Koppal District, Karnataka. The intervention was carried out in 51 purposively selected villages of approximately 110 villages in the block from 2016 to 2018. Currently, KHPT, along with Prasanna School of Public Health, MAHE, Manipal, plans to assess the impact of the intervention on educational outcomes, age at marriage, gender perspectives, and nutritional status among the participating girls. The evaluation of this project will assist in shaping adolescent health policies.

OBJECTIVES

1. To evaluate the effectiveness of the Sphoorthi project among females aged 19–23 years on educational attainment, dietary diversity, and age-at-marriage
2. To understand the role of the Sphoorthi intervention in shaping the gender perspectives and negotiation skills among the girls, focus on their understanding of self-respect.
3. To explore the intervention's influence on the parents of females concerning gender roles and rights, decision-making, and improved parent-daughter relationships

METHODOLOGY

i. Study setting



The evaluation was conducted in Koppal District, Karnataka, across two taluks: Koppal Taluk and Kushtagi Taluk. The Sphoorthi adolescent empowerment program was implemented in Koppal Taluk, which served as the intervention area, while Kushtagi Taluk served as the non-intervention area to allow for comparative analysis. For this evaluation, 46 villages of Koppal Taluk and Kushtagi Taluk were selected.

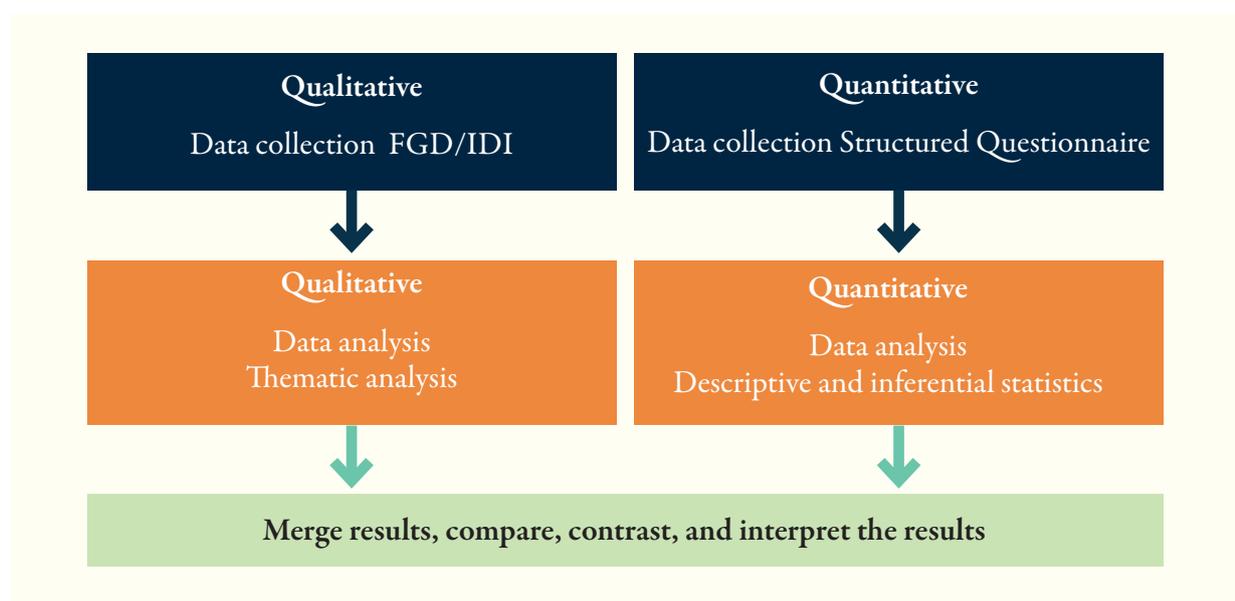


ii. Study design

We used the cross-sectional evaluation method and RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) to guide this evaluation. RE-AIM is a well-established implementation science framework for evaluating the public health impact of proven interventions.

The RE-AIM framework was used to guide both the analysis and interpretation of findings by systematically mapping study outcomes to each of its five domains. *Reach* was assessed by examining the proportion and characteristics of the adolescent girls who participated in the Sphoorthi project, including barriers and facilitators to participation. *Effectiveness* was evaluated through perceived changes in knowledge, attitudes, and behaviors related to adolescent health and empowerment, as reported by participants and stakeholders. *The adoption* was focused on the extent to which gram panchayat members, Anganwadi teachers, ASHA workers, and local stakeholders supported and implemented the intervention. *Implementation* was assessed by reviewing the fidelity, adaptations, and quality of program delivery across sites. Finally, *Maintenance* was involved in exploring whether key components of the intervention were sustained, institutionalized, or scaled after the initial implementation phase. The RE-AIM domains served as an analytical lens to organize qualitative themes and interpret the implications of the findings for future policy and programming.

This study employed a concurrent mixed-methods evaluation design, where the quantitative and qualitative data were collected in parallel. Further details of the study design are provided in Figure 1.



iii. Study duration: 6 months

iv. Sample size

$$n = \frac{\left[Z_{\frac{\alpha}{2}} \sqrt{2 \times \bar{P}(1 - \bar{P})} + Z_{\beta} \sqrt{P_1(1 - P_1) + P_2(1 - P_2)} \right]^2}{(P_1 - P_2)^2}$$

Quantitative: Sample size formula for the difference between two independent proportions $Z_{1-\beta} \sqrt{P_1(1-P_1) + P_2(1-P_2)}$. P1 and P2 are the proportions of events of interest (The impact of the Sphoorthi program on delaying or reducing early marriage) for group I and group II, and P = [Equation]. To detect a 10%-point difference, with P1 =0.55 and P2 = 0.45, a 95% confidence interval ($Z_{\alpha/2} = 1.96$) and 80% power ($Z_{1-\beta} = 0.84$), the sample size of 390 per group is required. Further, considering 15% non-response and a design effect of 1.5, the required final sample size is 690 per group, and the total sample size will be 1380.

v. Sampling Technique

The selection of the villages were based on the Probability Proportional to Size (PPS) method during the intervention. . The intervention was carried out in 51 villages across selected blocks of Koppal Taluk based on the following criteria: a total population between 1,850 and 4,500, an SC/ST population exceeding 10%, a higher number of adolescent girls, and accessibility from the block headquarters.

For this evaluation project, the number of villages to be selected was based on the required samples from each selected village. To arrive at a sample of 690, we selected 15 girls each from 46 villages of the intervention area using the PPS method.

For selecting participants in the non-intervention area, we chose Kushtagi Taluk. We selected Kushtagi Taluk because it is similar to the Koppal Taluk in some socio-economic characteristics to the other two Taluks, such as Gangavathi and Yelburga (at the time of implementation, but currently have 7 Taluks). Also, not many NGO-led interventions have happened in Kushtagi Taluk.

To select the samples in Kushtagi Taluk (non-intervention area), an initial list of adolescent girls was collected from the Grama Panchayat to gather details on the number of adolescent girls aged 19–23 across 171 villages. Using the number of adolescent girls in this age group as the size measure, 46 villages will be selected through Lahiri's method (PPS sample selection method). This method ensures that each unit has a selection probability proportional to its size, leading to a representative sample.

The selected villages are divided into 5 segments based on geographical location, hamlets, tandas, etc. (almost an equal number of households in each segment). Necessary information will be collected from ASHA or GP. Participants will be selected from each segment. By starting from a random household, 3 eligible participants will be selected with an interval of five houses. Interviews will be conducted with adolescent girls selected as outlined.

vi. Participant Selection

Quantitative

To reach a target of 690 samples in intervention area, 15 girls from each village were selected using a systematic sampling. The selected girls' list from each village was sent to the community organizers by the field supervisors to identify the girls. These identified girls were interviewed by the external evaluator.

To reach a target of 690 samples in the non-intervention area, 15 girls from each village were identified on the day of the interview. Using chart paper, the selected village was mapped by the

field supervisor with the help of the ASHA and Anganwadi workers to have an overview of the village. The village was then divided into 5 segments, with more than 60 houses in each segment. Field workers were sent to each segment to interview the girls. Starting from the left side of the segment, the field worker identified 3 eligible girls after an interval of 5 houses.

Qualitative

A purposive sampling strategy was used to select participants for the qualitative interviews. Within both intervention and non-intervention areas, participants were selected to ensure diversity in age, socioeconomic background, and educational status among adolescent girls. Parents and stakeholders, including Gram Panchayat representatives, Anganwadi teachers, ASHA, and community leaders, were identified based on their involvement in the Sphoorthi initiative. Local facilitators and field staff assisted in identifying individuals who can provide varied perspectives. This approach is intended to capture a wide range of experiences and viewpoints, thereby enhancing the credibility and transferability of findings and helping to mitigate selection bias.

In-depth interviews/Focus group discussions were conducted with girls from both intervention and non-intervention areas, their parents, stakeholders involved in the program, and service providers. These discussions aimed to explore the program's influence on the lives of the girls and their parents, as well as to gain insights into the implementation process and challenges faced during the program's execution. The number of interviews for qualitative data collection is provided in Table 1

Table 1: Details of qualitative interviews

Participants	Interview Category	Participants from the intervention area	Participants from the non-intervention area	Number of interviews
Stakeholders	IDI	4	2	6
Stakeholders	FGD	0	6	1
Implementers	IDI	2	0	2
Parents (Mothers)	IDI	4	4	8
Parents (Fathers)	IDI	4	3	7
Girls	IDI	6	6	12

vii. Inclusion and Exclusion criteria

QUANTITATIVE

Inclusion criteria:

Females from the intervention area:

- Females who were exposed to the intervention in the Sphoorthi program in Koppal Taluk
- Females in the age group of 19-23 years

Females from the non-intervention area:

- Females who did not participate in the Sphoorthi intervention program residing in other Taluks of Koppal District (Kushtagi)
- Females in the age group of 19-23 years
- Females who are willing to participate in the study

Exclusion criteria:

- Respondent in the intervention area were exposed to the current second phase of Sphoorthi program, while those in the non-intervention area were found to have been exposed to the Sphoorthi program.

QUALITATIVE**Inclusion criteria:**

- Women in the age group of 19-23 years who have participated and not participated in the Sphoorthi intervention, stakeholders, and service providers who were involved in the program implementation
- Parents (father and mother) of the participating girls

Exclusion criteria:

- Those who are not available during the study and are not willing to provide consent to take part in the study.
- In the non-intervention area were found to have been exposed to the Sphoorthi program.

TOOL DEVELOPMENT

Quantitative Tool

A validated structured questionnaire, translated into the local language, Kannada, was developed. The questionnaire consisted of 16 sections to assess educational attainment, age at marriage, gender perspectives, nutritional status, self-esteem, events of violence, and empowerment levels. Once the questionnaire was validated, the tool was digitized in Survey Solution software in both English and Kannada. To ensure the tool's effectiveness and identify challenges, a pilot test was conducted in Hasghal and Sanganal villages of Koppal Taluk, conducting a total of 14 interviews. Observations made during the pilot test showed areas needing improvement in the tool, and feedback from the staff helped refine the process.

Qualitative Tool

A validated, in-depth interview guide was developed, which was translated to Kannada. A separate in-depth interview tool was developed for implementers, parents, and girls. All interviews were audio-recorded, and descriptive field notes were taken to capture the interviewer's experience and observations of each session.

DATA COLLECTION PROCEDURES

Approvals: Administrative approvals were obtained from the concerned authorities.

Quantitative

A cross-sectional survey was carried out to collect quantitative data from the intervention and non-intervention areas. After obtaining approval from the concerned authorities, data collection was conducted in the selected villages of Koppal district, Karnataka. Data collection was done in the villages where the intervention had been carried out and in the villages where the intervention had not been carried out. Details of the villages selected for the intervention and the characteristics of the remaining villages in the block or the adjacent block for the selection of non-intervention villages were obtained from KHPT. The researchers visited each selected female participant, and after explaining about the study and obtaining informed consent, data were collected using a structured questionnaire. On average, it took around 30–40 minutes to complete the interview. Repeat visits were made to reduce non-response. Similarly, if a selected adolescent girl was not available in the village, the field team attempted to obtain the relevant information either over the phone from the girl or by interviewing a parent, with the empowerment section excluded when the interview was conducted with a parent.

Qualitative

The sample selection was purposive. In-depth interviews and focus group discussions were used to explore the impact and implementation process of the intervention. For qualitative data collection, participating and non-participating girls, key stakeholders, service providers, and parents of participating girls were identified using purposive sampling based on predefined inclusion criteria. Interviews followed an IDI/FGD guide, and informed consent was obtained beforehand. Each interview, lasting 30–40 minutes, was audio recorded.

Ethical considerations and methods to address issues: Ethics approval was obtained from the Ethics Committee of KHPT. Participant information sheets were provided to the participants before data collection with the consent form. Informed consent was obtained from all the participants. For the qualitative component, consent was obtained for audio recording without identifying the participants. Participant anonymity and confidentiality were maintained throughout the study.

DATA MANAGEMENT

Quantitative Data

All quantitative data collected through surveys and structured tools were stored securely in password-protected digital databases accessible only to authorized members of the research team. Hard copies of consent forms were kept in a locked cabinet within the research office. Data were anonymized before analysis to ensure participant confidentiality. The data will be retained securely for three years following the completion of the project, after which it will be safely destroyed.

Qualitative Data

Interview transcripts, audio recordings, and field notes were stored in encrypted digital folders with restricted access limited to the core research team. Any physical documents (such as consent forms and demographic data forms) related to qualitative data collection were securely stored in a locked filing cabinet. All personal identifiers were removed during transcription to protect the identities of participants. As with quantitative data, qualitative data will be retained securely for three years, after which it will be permanently deleted or destroyed following data protection protocols.

DATA ANALYSIS

Quantitative

Statistical analysis included descriptive and inferential statistics. In the descriptive analysis, frequency tables and means or medians were used to describe the characteristics of the population. For the quantitative component, statistical tests such as the chi-square test were used to assess associations between categorical variables. Z-tests for proportions were applied to examine differences in key indicators such as the proportion of girls married before the age of 18, school dropout rates, educational attainment, decision-making role, and dietary diversity across intervention and non-intervention groups. Additionally, the Mann–Whitney U test was used to compare the total scores on gender role attitudes, self-esteem, and self-efficacy between the intervention and non-intervention groups. Univariate and multivariable binary logistic regression models were employed to identify predictors of school dropouts, high self-esteem, high self-efficacy, decision making and strong parent daughter relationship among adolescent girls. Stata 14.0 was used for all analyses.

Qualitative

All interviews were audio-recorded, transcribed verbatim in Kannada, and subsequently translated into English. The translated transcripts were reviewed for accuracy and completeness. A combination of deductive and inductive codes was used to guide the analysis. An initial codebook was developed based on the research questions and interview guide and was iteratively refined as new themes emerge during data familiarization.

The coding process involved multiple researchers independently coding a subset of transcripts to ensure inter-coder reliability. Discrepancies were discussed and resolved through consensus. Thematic content analysis was conducted, wherein similar codes were grouped into categories, and overarching themes was generated to capture patterns and meanings across the dataset.

All transcripts were managed and coded using ATLAS.ti (version 8), which supported the systematic organization, retrieval, and analysis of qualitative data, thereby enhancing the transparency and replicability of the process.



Information collection with an adolescent girl

RESULTS

PART 1: QUANTITATIVE FINDINGS

Section 1: Sphoorthi program effectiveness on educational attainment, nutritional status, and age at marriage

This section of the report is focused on evaluating the effectiveness of the Sphoorthi project among adolescent females aged 19–23 years, focusing on educational attainment, nutritional status, and age at marriage. To assess the effectiveness of the Sphoorthi program across these dimensions, statistical analyses were carried out comparing outcomes between the intervention and non-intervention groups.

1.1 Interview Status Across Study Regions

Interview status of surveyed participants by intervention and non-intervention regions is detailed in Table 2

Table 2: Interview status of the participants

Interview Status	Intervention	Non-Intervention	Total
Completed	413	665	1078
Partially Completed	27	0	27
Abruptly closed or denied	63	24	87
Migration	58	0	58
Door Lock	3	1	4
Address not found	57	0	57
Not eligible*	69	0	69
Total	690	690	1380

**Not eligible* refers to duplicate entries and individuals who did not belong to or reside within the intervention area.

For the statistical analysis, only 413 respondents from the intervention region and 665 respondents from the non-intervention region were utilized.

1.2 Participant Profile

We analyzed the background characteristics of all the interviewed females in both the intervention and non-intervention groups, and the results are summarized in Table 3.

Table 3: Distribution of adolescent girls based on their profile

	Intervention (N=413)		Non-Intervention (N=665)		p-value
	Sample	Percent	Sample	Percent	
Age					
19	105	25.4 %	176	26.5 %	0.705
20	114	27.6 %	148	22.3 %	0.047
21	96	23.2 %	133	20.0 %	0.205
22	73	17.7 %	122	18.3 %	0.781
23	25	6.1 %	86	12.9 %	<0.001
Religion					
Hindu	391	94.7 %	611	91.9 %	0.082
Non-Hindu	22	5.3 %	54	8.1 %	
Caste					
SC/ST	95	23%	218	32.8 %	0.001
OBC	311	75.3 %	406	61.1 %	<0.001
General/Other	7	1.7 %	41	6.1 %	0.001
Type of Family					
Joint Family	26	6.3 %	42	6.3 %	0.989
Nuclear Family	387	93.7 %	623	93.7 %	
Parents Living Status					
Both Parents Not Surviving	5	1.2 %	3	0.5 %	0.272
Only Father/Mother Surviving	68	16.5 %	109	16.4 %	0.975
Both Parents Surviving	340	82.3 %	553	83.2 %	0.724
Parents Literacy Status					
Both Parents Illiterate	177	42.9 %	305	45.9 %	0.334
Only Father Illiterate	18	4.4 %	32	4.8 %	0.731
Only Mother Illiterate	114	27.6 %	213	32 %	0.124
Both parents literate	104	25.2 %	115	17.3 %	0.002
Working Status of Parents					
Both Parents Working	358	86.7 %	602	90.5 %	0.049
Only Father Working	11	2.7 %	14	2.1 %	0.554
Only Mother Working	40	9.7 %	43	6.5 %	0.054
Both parents are not working	4	1 %	3	0.5 %	0.438

Father's Occupation					
Cultivator/Agriculture laborer/non-agriculture laborer	280	81.2 %	466	82.6 %	0.431
Business/Salaried Employment	52	15.1 %	82	14.5 %	0.9
Housework/Unemployed/Others	13	3.8 %	16	2.8 %	0.464
Mother's Occupation					
Cultivator/Agriculture laborer/non-agriculture laborer	318	78.9 %	538	82.5 %	0.123
Business/Salaried Employment	36	8.9 %	62	9.5 %	0.736
Housework/Unemployed/Others	49	12.2 %	52	8 %	0.027

The results from Table 3 show that the majority of adolescent girls in both the intervention and non-intervention regions belonged to the Other Backward Class (75.3% and 61.1%, respectively). Over 90% identified as Hindu, and about 93.7% resided in nuclear families. In both groups, more than 80% of the girls had both parents alive. With respect to parental education, more than 40% of the females reported that both parents were non-literate. In terms of employment, over 85% of the females in both groups had parents engaged in some form of work, with the majority (around 80%) employed primarily in the agricultural sector.

When comparing the intervention and non-intervention groups for difference in proportions, no statistically significant differences were observed in terms of religion, type of family, parents' living status, or fathers' occupation (all $p > .05$). However, the groups differed significantly by age (20 years: $p = .047$; 23 years: $p < .001$), caste (SC/ST: $p = .001$; OBC: $p < .001$; General/Other: $p = .001$), parents' literacy (both literate: $p = .002$), parents' working status (both working: $p = .049$), and mothers' occupation (housework/unemployed/others: $p = .027$). Thus, while the intervention and non-intervention groups were broadly comparable across several sociodemographic factors, they differed in specific age categories, caste distribution, parental literacy, employment status, and maternal occupation.

1.3 Educational Attainment

The distribution of study participants based on the highest educational qualifications of females is presented in Table 4.

Table 4: Distribution of adolescent girls by their highest educational attainment

Highest Educational Attainment	Intervention (N=413)		Non-Intervention (N=665)		p-value
	Sample	Percent	Sample	Percent	
No Schooling	1	0.20%	9	1.40%	
Upper Primary (up to 8 th grade)	21	5.10%	107	16.10%	<0.001
Secondary (9 th -10 th)	65	15.7 %	150	22.6 %	0.006
Higher Secondary (11 th -12 th)	120	29.1 %	203	30.5 %	0.608
Technical (ITI, Diploma, Pharmacy, Nursing, etc.)	39	9.4 %	36	5.4 %	0.011
Graduation and above	167	40.4 %	160	24.1 %	<0.001

As shown in Table 4, the highest proportion of adolescent girls in the intervention group (40.4%) had completed graduation or higher education. In contrast, in the non-intervention group, only 24.1% had attained this level, with higher secondary education (30.5%) being the most common qualification.

A test of differences in proportions indicated statistically significant differences in educational attainment between the intervention and non-intervention groups for upper primary education ($p < .001$), secondary education ($p = .006$), technical education ($p = .011$), and graduation and above ($p < .001$). No significant differences were found for higher secondary education ($p = .608$) or no schooling ($p = .099$).

The evaluation also looked at the school characteristics, tutorials, and sponsorships among all the study participants as outlined in Table 5

Table 5: Distribution of adolescent girls by school characteristics

School Characteristics	Intervention (N=412)		Non-Intervention (N=656)		p-value
	Sample	Percent	Sample	Percent	
Location of the School					
Village of residence	340	82.50%	583	88.90%	0.003
Not in the village of residence	72	17.50%	73	11.10%	
Distance of school from place of residence					
	(N=72)		(N=73)		
< 5 kms	18	25.0 %	7	9.6 %	0.016
6-20 kms	39	54.2 %	21	28.8 %	0.002
20-40kms	15	20.8 %	25	34.2 %	0.094
>40 kms	0	0%	20	27.4 %	<0.001
Participation in Remedial/Tutorial Classes					
Yes	224	54.40%	129	19.70%	<0.001
No	188	45.60%	527	79.30%	
Sponsor for Remedial Classes					
School	15	5.30%	9	6.76%	0.55
Private	45	15.90%	60	45.11%	<0.001
Project/NGO(KHPT/Sphoorthi)	170	60.07%	0	0%	<0.001
Parents/family members	45	15.90%	64	48.12%	<0.001
Other	8	2.83%	0	0%	0.059

The Table 5 results show that 17.5% of adolescent girls in the intervention region attended schools located outside their village of residence, compared to 11.1% in the non-intervention region. Among those attending schools outside the village, approximately 54.2% in the intervention region had schools located 6–20 km away. In contrast, in the non-intervention region, a larger share of females traveled longer distances, with 34.2% attending schools located 21–40 km away and 27.4% reporting distances exceeding 40 km. Only 19.7% of females in the non-intervention region reported participating in remedial or tutorial classes, compared to 54.4% in the intervention

region. Among those in the intervention region, approximately 60% received sponsorship support through the project or associated NGOs such as KHPT/Sphoorthi.

A test of differences in proportions indicated statistically significant differences between the intervention and non-intervention groups in several school characteristics. Differences were observed for the location of the school ($p = .003$), distance of school from place of residence for <5 km ($p = .016$), 6–20 km ($p = .002$), and >40 km ($p < .001$). Participation in remedial or tutorial classes also differed significantly ($p < .001$). Significant differences were found in the source of sponsorship for remedial classes, including private ($p < .001$), project/NGO ($p < .001$), and parents/family members ($p < .001$). No significant differences were observed for 20–40 km distance ($p = .094$) or school-sponsored remedial classes ($p = .550$)

1.4 School Dropouts

Table 6 presents the distribution of adolescent girls in both the intervention and non-intervention regions based on school dropout characteristics. To assess whether there were significant differences in the proportions of adolescent girls with these characteristics between the two groups, a test for proportions was conducted. The alternative hypothesis tested whether the proportion of females exhibiting each characteristic was lower in the intervention group compared to the non-intervention group.

Table 6: Distribution of adolescent girls based on school dropout characteristics

	Intervention (N=412)		Non-Intervention (N=656)		P (Int) < P (N-Int)
	Sample	Percent	Sample	Percent	p-value
Drop-out status					
Yes	216	52.4 %	470	71.6 %	<0.001
No	196	47.6 %	186	28.4 %	
Drop-out grade	(N=216)		(N=470)		
Primary (before 5 th grade)	3	1.39%	30	6.38%	
6th -8th grade	17	7.87%	73	15.53%	<0.001
9th -10th grade	60	27.78%	149	31.70%	<0.001
11th -12th grade	83	38.43%	175	37.23%	<0.001
After 12th grade	53	24.54%	43	9.15%	
Reason for Dropout					
Lack of personal interest to go to school	87	24.80%	210	30.20%	0.0773
Parents/guardian do not want me to	83	23.60%	158	22.70%	0.08
Got married /restrictions from husband	47	13.40%	102	14.70%	
Failed in the last exam	25	7.10%	24	3.40%	
School-related barriers	42	12%	74	10.60%	
Household and economic responsibilities	31	8.80%	72	10.40%	
Unsafe or unsupportive home environment	21	6%	43	6.20%	
Other	12	3.40%	15	2.20%	

The findings indicate that 53.61% of females in the non-intervention group dropped out of school before 10th grade, which was higher compared to 37.04% in the intervention group. Overall, 71.6% of females in the non-intervention region dropped out of school, compared to 52.4% in the intervention region. This difference in dropout rates is statistically significant ($p < 0.001$), with a notably higher rate among those who did not receive the intervention ($p < 0.001$). Among the dropouts, 75.5% in the intervention region and 90.9% in the non-intervention region left school before completing 12th grade. Dropout rates across grades 6–8, 9–10, 11-12 showed statistically significant differences, with consistently higher rates in the non-intervention group. The most reported reasons for school dropout in both groups were a lack of personal interest (24.8% in the intervention region and 30.2% in the non-intervention region) and parental or guardian restrictions (23.6% and 22.7%, respectively). However, the differences in the proportions of these reported reasons for dropout were not statistically significant between the intervention and non-intervention groups.

1.5 Predictors of school dropout

Univariate logistic regression using the possible predictors for dropout was first used to identify significant factors associated with School Dropout (See Appendix D). Multivariate logistic regression analysis using the significant predictors from univariate analysis was then utilized to identify key social determinants associated with increased likelihood of school dropout. The results are presented in Table 7.

Table 7: Results of Multivariate Logistic Regression Analysis on Adolescent girls School Dropout

Predictors of School Dropout	Yes		No		Adjusted Odds Ratio (95% CI)
	Int %	Non- Int %	Int %	Non- Int %	
Participant Groups					
Intervention (Ref)					
Non-Intervention					1.506 (1.051-2.159)**
Age					
19 (Ref)	42.9	63.1	57.1	35.8	
20	44.7	70.3	54.4	29.7	0.879 (0.568-1.361)
21	63.5	76.7	36.5	23.3	1.287 (0.8024-2.063)
22	60.3	78.7	39.7	17.2	1.34(0.796-2.254)
23	60	66.3	40	31.4	0.695(0.377-1.282)
Marital Status					
Unmarried (Ref)	28.3	50.8	71.3	49.2	
Engaged	77.1	58	22.9	42	2.427(1.382-4.263)***
Married	81.3	86	18.7	11.5	4.949(3.439-7.122)***
Employment					
Yes (Ref)	34.3	58.2	65.3	39.6	
No	84.5	89.7	15.5	10.3	5.694(3.848-8.427)***

Participation in different groups					
Yes (Ref)	42.9	58.2	57.1	40.3	
No	60.9	72.1	38.6	26.6	1.944(1.295-2.92)***
Parent Literacy					
Both/Single Parent Literate (Ref)	45.8	69.4	54.2	30.6	
Both illiterate	61	72.1	38.4	24.9	1.315(0.946-1.827)
Parents Working					
Both Working (Ref)	54.5	72.1	45.3	26.7	
Not working	38.2	57.1	61.8	39.7	2.23 (1.31–3.80)***
Siblings					
More than one brother and sister (Ref)	55	74.9	44.5	23.9	
No siblings	72.7	68	27.3	32	0.83 (0.42–1.64)
Only brothers	49.5	61.3	50.5	35.8	0.619(0.416-0.923)**
Only sisters	43.1	66.7	56.9	33.3	1.243(0.748-2.067)
Parent Daughter Relationship					
High (Ref)	46.3	64.8	53.7	35.2	
Weak	63.6	79.9	36.4	20.1	2.664(1.757-4.041)***
Medium	49.4	73.4	50.6	26.6	1.549(0.983-2.441)*
DMI					
High (Ref)	49.7	67.6	50	30.9	
Low	80	92.7	20	7.3	3.341(1.661-6.721)***
Self Esteem					
High (Ref)	49.3	66.1	50.7	33.3	
Low	68.2	86.6	30.3	9.4	2.028(1.231-3.342)***
Location of school at village of residence					
Yes (Ref)	57.4	74.6	42.6	25.4	
No	29.2	47.9	70.8	52.1	2.83 (1.41–5.67)***

Note: *** P value <0.001, ** P-value <0.05, * P-value <0.10

The multivariate logistic regression model revealed that adolescent girls from the non-intervention group had significantly higher likelihood of school dropout compared to those in the intervention group (AOR = 1.506). In terms of age, participants aged 21 (AOR = 1.287) and 22 (AOR = 1.34) had slightly higher odds, while those aged 23 (AOR = 0.695) had reduced odds of drop out compared to 19-year-olds. Marital status emerged as a strong predictor, with engaged individuals (AOR = 2.427) and married participants (AOR = 4.949) being substantially more likely to drop out compared to their unmarried peers. Unemployed participants (AOR = 5.694) and those who did not participate in any groups had higher odds of dropping out (AOR = 1.944), emphasizing the value of social engagement. Participants whose parents were illiterate (AOR = 1.315) and not

working (AOR = 2.23) had a higher likelihood of dropping out. Sibling composition also affected dropout likelihood. Those with only brothers had significantly lower odds of school dropout (AOR = 0.619) compared to those with both brothers and sisters. Participants reporting a weak relationship with their parents (AOR = 2.664), low involvement in decision-making (AOR = 3.341), and low self-esteem (AOR = 2.028) were more likely to drop out of school. Students whose school was located outside their village had higher odds of dropping out (AOR = 2.8341), indicating that logistical barriers such as distance may discourage continued attendance.

1.6 Nutritional Status

Table 8 outlines how participants are distributed across different levels of dietary diversity.

Table 8: Distribution of Participants by Frequency of Consumption of Various Dietary Elements

	Non intervention				Intervention			
	Daily	Weekly	Occasionally	Never	Daily	Weekly	Occasionally	Never
Rice	664	1	0	0	412	1	0	0
	99.8 %	0.20%	0	0	99.8 %	0.20%	0	0
Wheat/Ragi/Jola/ other cereals	642	23	0	0	403	10	0	0
	96.5 %	3.5 %	0	0	97.6 %	2.4 %	0	0
Pulses/legumes	384	278	3	0	239	173	1	0
	57.7 %	41.8 %	0.5 %	0	57.9 %	41.9 %	0.2 %	0
Vegetables/ tubers/green leafy vegetables	592	72	1	0	360	50	2	1
	89.0 %	10.8 %	0.2 %	0	87.2 %	12.1 %	0.5 %	0.2 %
Processed food high in salt/oily fried foods	67	306	291	1	36	220	157	0
	10.1 %	46.0 %	43.8 %	0.2 %	8.7 %	53.3 %	38.0 %	0.0 %
Fruits	194	447	23	1	135	260	17	1
	29.2 %	67.2 %	3.5 %	0.2 %	32.7 %	63.0 %	4.1 %	0.2 %
Meat/meat products	0	338	165	162	6	204	108	95
	0.0 %	50.8 %	24.8 %		1.5 %	49.4 %	26.2 %	23.0 %
Foods high in sugar content	306	187	169	3	187	120	106	0
	46.0 %	28.1 %	25.4 %	0.5 %	45.3 %	29.1 %	25.7 %	0.0 %
Flax seeds	93	21	147	404	78	22	193	120
	14.0 %	3.2 %	22.1 %		18.9 %	5.3 %	46.7 %	29.1 %
Milk/curd and other milk products	599	56	2	8	388	18	4	3
	90.1 %	8.4 %	0.3 %	1.2 %	93.9 %	4.4 %	1.0 %	0.7 %
Egg	14	484	91	76	22	294	52	45
	2.1 %	72.8 %	13.7 %		5.3 %	71.2 %	12.6 %	10.9 %
Fish	0	33	298	334	3	19	174	217
	0.0 %	5.0 %	44.8 %		0.7 %	4.6 %	42.1 %	52.5 %

The dietary patterns of both intervention and non-intervention groups were largely similar, with high daily consumption of staple foods like rice, pulses, vegetables, fruits, and milk products. Notably, the intervention group showed a slightly lower frequency of processed food intake. The intake of animal-based products such as meat, eggs, and fish showed a similar pattern in both groups, with meat and eggs consumed frequently every week and fish consumed occasionally.

1.7 Marriage Characteristics

The analysis of females based on marriage-related characteristics is presented in Table 9 below. For variables such as age at marriage and preferred age of marriage, normality was first assessed using the Shapiro-Wilk test. As these variables deviated from normality, the non-parametric Mann-Whitney U test was employed to determine whether the median age values differed significantly between the two groups, with the alternative hypothesis stating that the median age was higher in the non-intervention group.

Table 9: Distribution of adolescent girls/young women based on marriage characteristics

Marital Status	Intervention (N=413)		Non-Intervention (N=665)		p -value
	Sample	Percent	Sample	Percent	
Married	155	37.5 %	363	54.6 %	<0.001
Unmarried	223	54.0 %	250	37.6 %	<0.001
Engaged	35	8.5 %	50	7.5 %	0.6528
Widow/divorced	0	0%	2	0.30%	
Age at marriage	(N=155)		(N=365)		
below 18	10	6.40%	63	17.20%	0.0019
18	22	14.2 %	91	24.9 %	0.0093
19	64	41.3 %	105	28.8 %	0.0072
20	41	26.5 %	62	17.0 %	0.0184
21 and above	18	11.60%	44	12.10%	1
Marriage type - Decision maker					
Arranged - only parents	90	58.1 %	216	59.2 %	0.8898
Arranged - jointly with parents	57	36.8 %	138	37.8 %	0.9015
Love- jointly with parents	4	2.6 %	4	1.1 %	0.3849
Love- without parents' consent	4	2.6 %	7	1.9 %	0.8829
Refusal to get married to continue education					
Yes	7	4.5 %	12	3.30%	0.6691
No	121	78.1 %	302	82.70%	0.259
Never faced such situation	27	17.40%	51	14%	0.3829

Preferred Marriage age					
18 and below	5	1.20%	33	4.96%	0.0021
19-22	92	22.30%	199	29.93%	0.0074
23-25	157	38.00%	184	27.67%	0.0005
26 and above	109	26.40%	143	21.50%	0.0768
No preference	50	12.10%	106	15.94%	0.0989
Informed parents about marriage age decision					
Yes	263	63.70%	297	44.70%	<0.001
No	150	36.30%	368	55.30%	

As shown in Table 9, 37.5% of females in the intervention group were married, while 54% were unmarried. In contrast, 54.6% of females in the non-intervention group were married, and 37.6% were unmarried. Among those who were married, 6% of girls in the intervention area were married before the legal age, compared to 17% in the non-intervention area. Similarly, 14% of girls in the intervention area were married at the legal age of 18, compared to 25% in the non-intervention area. The median age at marriage was compared between groups using the Mann-Whitney U test ($U = 22455$, $p < 0.001$), which revealed a statistically significant difference, with a higher median age at marriage observed among adolescent girls in the intervention group (19 years) compared to the non-intervention group (19 years).

In both groups, arranged marriages with decisions made solely by parents were the most common, reported by 58.1% in the intervention group and 59.2% in the non-intervention group. A majority of participants in both groups (78.1% in the intervention group and 82.7% in the non-intervention group) reported that they did not refuse early marriage for the sake of continuing education. The comparison of preferred age for marriage among both groups showed a statistically significant difference ($U = 86800$, $p < 0.001$) with a higher median age among those who received intervention (25 years) compared to non-intervention girls (23 years). 63.7% of females in the intervention group reported informing their parents about their preferred age of marriage, whereas 55.3% of females in the non-intervention group had not. This difference was statistically significant ($\chi^2 = 36.6$, $p < 0.001$), indicating that a higher proportion of adolescent girls in the intervention group actively communicated their marriage age preferences to their parents.

A test of differences in proportions indicated statistically significant differences between the intervention and non-intervention groups across several marital and marriage-related characteristics. Significant differences were found in marital status, with a lower proportion of married participants ($p < 0.001$) and a higher proportion of unmarried participants ($p < 0.001$) in the intervention group. Among those who were married, significant differences were observed in age at marriage for below 18 years ($p = 0.0019$), 18 years ($p = 0.0093$), 19 years ($p = 0.0072$), and 20 years ($p = 0.0184$). Preferred marriage age also differed significantly between the two groups for 18 years and below ($p = 0.0021$), 19–22 years ($p = 0.0074$), and 23–25 years ($p = 0.0005$). Additionally, significant differences were noted in whether participants informed their parents about their marriage age decision ($p < 0.001$). No significant differences were found for engagement status, marriage type, refusal to marry to continue education, or preference for marriage age above 26 years.

Section 2: Sphoorthi Program Effectiveness in Shaping Gender Perspectives, Negotiation Skills, and Self-Respect

This section aims to evaluate the program's role in shaping gender perspectives, negotiation skills, and self-respect among participants. Participants' negotiation skills with community leaders or elders were assessed in relation to issues such as child marriage, continuation of girls' education, and support provided to other girls in pursuing their education.

2.1 Association between adolescent girls in the intervention group with negotiation skills

The association between intervention status and negotiation skills on child marriage issues, continuing education, and support provided to other girls in pursuing their education is provided in Table 10

Table 10: Association between adolescent girls in the intervention group with negotiation skills on child marriage issues and support provided to other girls in pursuing their education

Negotiation on the Issue	Intervention (N=413)		Non-Intervention (N=665)		p-value	
	Sample	Percent	Sample	Percent	χ^2	P (Int) > P (N-Int)
Child marriage					< .001	
Yes	119	28.7 %	65	9.8 %		< 0.001
No	266	64.3 %	499	75.0 %		
No such issue emerged	29	7.0 %	99	15.2 %		
Continuation of Girls Education					< .001	
Yes	135	32.7 %	105	15.8 %		< 0.001
No	261	63.2 %	470	70.7 %		
No such issue emerged	17	4.1 %	90	13.5 %		
Assistance for the continuation of girls' school education					< .001	
Yes	180	43.6 %	185	27.80%		<0.001
No	188	45.5 %	344	51.70%		
No such issue emerged	45	10.9 %	134	20.5 %		

The findings from Table 10 indicate that 28.7% of adolescent girls in the intervention group reported negotiating with community leaders and elders about the issue of child marriage, compared to only 9.8% in the non-intervention group. Similarly, 32.7% of those in the intervention group reported engaging in negotiations regarding the continuation of girls' education, nearly double the 15.8% observed in the non-intervention group. A total of 43.6% of participants in the intervention group reported assisting other girls in continuing their education, compared to 27.8% in the non-intervention group. The Chi-square test results revealed statistically significant associations between participation in the intervention and all three outcomes: negotiation around child marriage, continuation of girls' education, and assisting other girls with educational support. Furthermore, the results of the proportion test indicated that a higher proportion of participants in the intervention group were involved in addressing these issues compared to those in the non-intervention group

2.2 Negotiation skills

Tables 11 to 13 present the demographic distribution of female participants based on negotiation skills related to child marriage (11), continuation of girls' education (12), and support extended to other females in pursuing education (13).

Table 11: Distribution of adolescent girls based on negotiation skills on issues related to child marriage.

Child marriage	Intervention (%)		Non-Intervention (%)		p-value
	Yes	No	Yes	No	
Age					
19	5.7	94.3	0.6	99.4	
20	6.1	93.8	0	100	
21	10.4	89.6	1.5	98.5	< 0.001
22	9.6	90.4	0.8	99.2	< 0.001
23	0	100	0	100	
Caste					
GENERAL/OTHER	14.3	85.8	0	100	
OBC	7.7	92.3	0.5	99.6	
SC/ST	5.3	94.7	0.9	99.1	< 0.001
Religion					
Hindu	7.2	92.8	0.7	99.3	< 0.001
Non-Hindu	9.1	90.9	0	100	
Parent Survival					
Both alive	7.6	92.4	0.5	99.5	
Single/ No Parent	5.5	94.5	0.9	99.1	< 0.001
Parent Literacy					
Both/Single Parent Literate	8.5	91.5	0.3	99.7	
Both illiterate	5.6	94.3	1	99	< 0.001
Parents Working					
Both Working	7.3	92.7	0.5	99.5	
Not working	7.3	92.7	1.6	98.4	< 0.001
Family Type					
Nuclear	7.2	92.8	0.6	99.4	
Joint family	7.7	92.3	0	100	

Siblings					
More than one brother and sister	5.9	94.1	0.5	99.5	
No siblings	9.1	90.9	0	100	
Only brothers	13.1	86.8	0.7	99.3	
Only sisters	3.1	96.9	1.1	98.9	0.0247
Education					
Above Higher Secondary	10.2	89.8	1.5	98.4	< 0.001
Upto Upper Primary (8)	0	100	0	100	
Secondary (9-10)	3.1	96.9	0	100	
Higher Secondary (11-12)	5.8	94.2	0.5	99.5	

Table 11 highlights a significantly higher proportion of adolescent girls in the intervention group who reported negotiating issues related to child marriage compared to those in the non-intervention group. For instance, 10.4% and 9.6% of the intervention participants aged 21 and 22 years respectively, reported negotiating such issues, compared to only 1.5% and 0.8% in the non-intervention group. Similarly, girls with working parents (7.3%), literate parents (8.5%), from nuclear families (7.2%) and higher education levels (e.g., 10.2% above higher secondary school) showed greater negotiation involvement. These findings highlight the intervention's effectiveness in building negotiation skills among females, particularly when supported by family, education, and socio-economic factors.

Table 12: Distribution of adolescent girls based on negotiation skills on issues related to the continuation of girls' education.

Continuing Education	Intervention (%)		Non-Intervention (%)		p-value
	Yes	No	Yes	No	
Age					
19	26.7	73.4	19.9	80.2	0.0117
20	30.7	69.3	10.1	89.8	< 0.001
21	37.5	62.5	15.8	84.2	< 0.001
22	38.4	61.6	16.4	83.6	< 0.001
23	32	68	16.3	83.8	< 0.001
Caste					
GENERAL/OTHER	57.1	42.9	7.3	92.7	< 0.001
OBC	32.2	67.9	14.8	85.2	< 0.001
SC/ST	32.6	67.4	19.3	80.7	< 0.001
Religion					
Hindu	32.5	67.5	15.5	84.5	< 0.001
Non-Hindu	36.4	63.6	18.5	81.5	< 0.001

Parent Survival					
Both alive	31.2	68.8	16.4	83.6	< 0.001
Single/ No Parent	39.7	60.3	12.6	87.4	< 0.001
Parent Literacy					
Both/Single Parent Literate	33.5	66.5	15.3	84.7	< 0.001
Both illiterate	31.6	68.4	16.4	83.6	< 0.001
Parents Working					
Both Working	31.8	68.1	15	85.1	< 0.001
Not working	38.2	61.8	23.8	76.2	< 0.001
Family Type					
Nuclear	33.1	66.9	14.9	85.1	< 0.001
Joint family	26.9	73.1	28.6	71.5	0.5939
Siblings					
More than one brother and sister	33.6	66.4	14.4	85.6	< 0.001
No siblings	36.4	63.7	16	84	< 0.001
Only brothers	36.4	63.6	18.2	81.8	< 0.001
Only sisters	23.1	76.9	18.3	81.7	0.0758
Education					
Above Higher Secondary	36.4	63.6	22.4	77.5	< 0.001
Up to Upper Primary (8)	9.1	90.9	7.8	92.3	0.4941
Secondary (9-10)	23.1	77	16.7	83.3	0.0131
Higher Secondary (11-12)	35.8	64.2	13.3	86.7	< 0.001

The results highlight a stronger presence of negotiation skills among adolescent girls in the Sphoorthi intervention group regarding decisions on continuing girls' education. Across age groups, notably at age 22, 38.4% of girls in the intervention group were able to negotiate on girls' education compared to only 16.4% in the non-intervention group. Girls belonging from general/ other category, 57.1% in the intervention group reported negotiation on the continuation of education versus just 7.3% from the non-intervention group. Girls with both parents alive (31.2%) or from working-parent households (31.8%) in the intervention group reported higher instances of negotiating education continuation than their counterparts (16.4% and 15%, respectively). Nuclear family settings showed the highest negotiation success, with 33.1% in the intervention group compared to just 14.9% in the non-intervention group. Among girls with either illiterate or single literate parents, those in the intervention group (31.6%, 33.5%) reported nearly twice the level of involvement in negotiation compared to those in the non-intervention group (16.4%, 15.3%). Educational background also played a role: 36.4% of those with above higher secondary education in the intervention group negotiated to continue, while only 22.4% did so in the non-intervention group. These patterns suggest that the Sphoorthi intervention positively influenced females' ability to negotiate with family members and other decision-makers to pursue continued education.

Table 13: Distribution of adolescent girls based on assistance provided to other females in pursuing their education.

Assistance in other girls' education	Intervention (%)		Non-Intervention (%)		p-value
	Yes	No	Yes	No	
Age					
19	46.7	53.4	35.2	64.8	0.0002
20	40.4	59.7	27.7	72.3	< 0.001
21	45.8	54.2	27.1	73	< 0.001
22	42.5	57.5	22.1	77.9	< 0.001
23	40	60	22.1	77.9	< 0.001
Caste					
GENERAL/OTHER	71.4	28.6	19.5	80.5	< 0.001
OBC	43.7	56.3	27.6	72.5	< 0.001
SC/ST	41.1	58.9	29.8	70.2	0.0002
Religion					
Hindu	42.7	57.2	28.2	71.8	< 0.001
Non-Hindu	59.1	40.9	24.1	75.9	< 0.001
Parent Survival					
Both alive	42.4	57.7	28.5	71.4	< 0.001
Single/ No Parent	49.3	50.7	24.3	75.7	< 0.001
Parent Literacy					
Both/Single Parent Literate	45.8	54.3	30.3	69.7	< 0.001
Both illiterate	40.7	59.3	24.9	75.1	< 0.001
Parents Working					
Both Working	45	55	27.9	72.1	< 0.001
Not working	34.5	65.4	27	73	0.013
Family Type					
Nuclear	43.2	56.8	27.1	72.9	< 0.001
Joint family	50	50	38.1	61.9	0.0002
Siblings					
More than one brother and sister	42.9	57.1	28.5	71.5	< 0.001
No siblings	54.5	45.5	24	76	< 0.001
Only brothers	40.4	59.6	24.8	75.2	< 0.001
Only sisters	49.2	50.8	30.1	69.9	< 0.001
Education					
Above Higher Secondary	49	50.9	35.2	64.8	< 0.001
Up to Upper Primary (8)	27.3	72.7	15.5	84.5	< 0.001
Secondary (9-10)	27.7	72.3	22.7	77.3	0.0815
Higher Secondary (11-12)	45.8	54.2	31.5	68.5	< 0.001

The findings from Table 13 reveal that adolescent girls in the intervention group were more actively involved in assisting other girls in pursuing education compared to those in the non-intervention group. Across categories such as caste, religion, family structure, and education level, a consistently higher proportion of intervention participants reported providing such support. For instance, 71.4% of General/Others females, 59.1% of Non-Hindus, and 50% from joint families in the intervention group extended help, compared to 19.5%, 24.1%, and 38.1%, respectively, in the non-intervention group. Additionally, females with single/no parents alive (49.3%), those from working-parent households (45%), and those with higher secondary (45.8%) education showed greater involvement in supporting peers. These findings suggest that the intervention positively influenced peer support behaviors, strengthening the role of females as enablers of educational continuity within their communities.

2.3 Gender perspectives, Self-esteem, and self-efficacy

Participants were asked 14 Likert scale-based questions to assess gender role attitudes, 6 questions to assess self-esteem, and 9 questions to assess self-efficacy. Responses were scored on a scale from 1 to 5, with 1 representing 'strongly disagree' and 5 representing 'strongly agree' for the self-esteem and self-efficacy items. For the gender role attitude questions, reverse scoring was applied so that higher scores reflected more gender-neutral views. For each participant, total scores were calculated separately for each domain. Higher scores in self-esteem and self-efficacy indicated greater confidence and perceived capability, while higher scores in gender role attitudes indicated more equitable or gender-neutral perspectives.

These scores were then compared between the intervention and non-intervention groups to identify differences in gender attitudes, self-esteem, and self-efficacy. First, the normality of total scores was assessed using the Shapiro-Wilk test. A p-value less than 0.05 indicated a deviation from normality. As shown in Table 14, the total scores for gender role attitudes, self-esteem, and self-efficacy did not meet the assumption of normality. Therefore, the non-parametric Mann-Whitney U test was used to examine whether there were significant differences in the median of total scores between the intervention and non-intervention groups.

Table 14: Test Statistic and p-values from the Shapiro-Wilk and Mann-Whitney U tests for Gender Role Attitudes, Self-Esteem, and Self-Efficacy

Characteristic	Shapiro-Wilk test		Mann-Whitney U Test μ (Int) > μ (Non Int)		Median Scores	
	Test Statistic	p-value	Test Statistic	p-value	Int	Non Int
Gender Perspectives	0.917	< 0.001	112119	< 0.001	62	59
Self Esteem	0.763	< 0.001	17114	< 0.001	32	30
Self-Efficacy	0.86	< 0.001	73994	< 0.001	33	30

As shown in the table 14, the p-values for all three variables from the Mann-Whitney U test are significant ($p < 0.001$), indicating that the median total scores for gender role attitudes, self-esteem, and self-efficacy are higher in the intervention group compared to the non-intervention group. These findings suggest that the intervention had a positive impact on enhancing gender-equitable attitudes, self-esteem, and self-efficacy among participants.

2.4 Predictors of high self-esteem

To quantify self-esteem, an index was constructed based on a set of relevant questions, whose distribution is outlined in Table 15. Details of the computation of the self-esteem index can be found in Appendix A

Table 15: Distribution of adolescent girls based on self-esteem index

Self Esteem	Intervention (N=413)		Non-Intervention (N=665)		p-value
	Sample	Percent	Sample	Percent	
High	347	84.00%	516	77.60%	0.0102
Low	66	16.00%	149	22.40%	

Among the intervention group, 84% of participants reported high self-esteem, compared to 77.6% in the non-intervention group. Conversely, 16% in the intervention group and 22.4% in the non-intervention group reported low self-esteem. A test of differences in proportions indicated a statistically significant difference in self-esteem between the intervention and non-intervention groups ($p = .0102$).

Univariate logistic regression was conducted to identify factors associated with high self-esteem. The variables included in the analysis are detailed in Appendix E. Significant predictors from the univariate analysis were then entered into a multivariate logistic regression model to determine the effect of these variables on high self-esteem among females when adjusted for the effect of other variables. The results are presented in Table 16.

Table 16: Results of multivariate logistic regression for females with high self-esteem

Predictors of High Self-Esteem	High		Low		Adjusted Odds Ratio (95% CI)
	Int %	Non- Int %	Int %	Non- Int %	
Participant Groups					
Intervention (Ref)					
Non-Intervention					0.825 (0.547–1.244)
Caste					
GENERAL/OTHER (Ref)	85.7	65.9	14.3	34.1	
OBC	84.9	82	15.1	18	2.028 (0.987–4.167) *
SC/ST	81.1	71.6	18.9	28.4	1.549 (0.730–3.288)
Religion					
Hindu (Ref)	84.9	78.2	15.1	21.8	
Non-Hindu	66.7	70.4	33.3	29.6	0.695 (0.367–1.317)
Marital Status					
Unmarried (Ref)	85.2	88.8	14.8	11.2	
Engaged	77.1	80	22.9	20	0.651 (0.335–1.266)
Married	83.9	69.6	16.1	30.4	0.752 (0.499–1.133)

Education					
Above Higher Secondary (Ref)	89.3	91.8	10.7	8.2	
Up to Upper Primary (8)	72.7	56.9	27.3	43.1	0.353 (0.194–0.645) ***
Secondary (9-10)	75.4	66.7	24.6	33.3	0.507 (0.297–0.866) **
Higher Secondary (11-12)	81.7	83.7	18.3	16.3	0.823 (0.496–1.365)
Participation in different groups					
Yes (Ref)	86.4	76.1	13.6	23.9	
No	81.9	77.8	18.1	22.2	0.661 (0.413–1.058) *
Misbehavior by anyone in the last 12 months					
No (Ref)	84.4	78.2	15.6	21.8	
Yes	33.3	53.3	66.7	46.7	0.400 (0.126–1.272)
Parent Literacy					
Both/Single Parent Literate (Ref)	83.9	79.7	16.1	20.3	
Both illiterate	84.2	75.1	15.8	24.9	0.868 (0.547–1.376)
Parents Working					
Both Working (Ref)	84.4	77.2	15.6	22.8	
Not working	81.8	81	18.2	19	0.978 (0.552–1.734)
Parent Daughter Relationship					
High (Ref)	92.1	80.4	7.9	11	
Weak	72.2	76	27.8	26.3	0.822 (0.552–1.225)
Medium	83.1	74.1	16.9	27.4	0.762 (0.477–1.216)
DMI					
High (Ref)	87.6	83.9	12.4	16.1	
Low	45.7	32.9	54.3	67.1	0.165 (0.104–0.262) ***
Self-Efficacy					
High (Ref)	90.5	92.3	9.5	7.7	
Low	74.9	62.3	25.1	37.7	0.312 (0.212–0.458) ***

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

Participants from the OBC (AOR = 2.028) groups were significantly more likely to report high self-esteem compared to those from the General/Other caste. In terms of educational attainment, participants educated up to upper primary (AOR = 0.353) and secondary (AOR = 0.507) had lower odds of high self-esteem compared to those with education beyond higher secondary, highlighting the role of education in fostering confidence. Those who did not participate in any groups were less likely to have high self-esteem (AOR = 0.661), indicating the positive role of social participation.

However, low decision-making involvement (AOR = 0.165) and low self-efficacy (AOR = 0.312) were both significantly associated with reduced odds of high self-esteem, emphasizing the importance of empowerment and self-confidence in promoting positive self-esteem.

2.5 Predictors of high self-efficacy

An index for self-efficacy was constructed based on a set of relevant questions. Details of the computation of the self-efficacy index are provided in Appendix A. Distribution of females based on the self-efficacy index is given in Table 17

Table 17: Distribution of adolescent girls based on self-efficacy index

Self-Efficacy	Intervention (N=413)		Non-Intervention (N=665)		p-value
	Sample	Percent	p-value	Percent	
High	242	58.60%	339	51.00%	0.015
Low	171	41.40%	326	49.00%	

The results indicate that 58.6% of females in the intervention group and 51% in the non-intervention group reported high self-efficacy, while 41.4% and 49%, respectively, reported low self-efficacy. A test of differences in proportions indicated a statistically significant difference in self-efficacy between the intervention and non-intervention groups ($p = .015$).

To explore the social background characteristics associated with high self-efficacy among females, a univariate logistic regression analysis was first conducted to identify significant predictors (see Appendix F). This was followed by a multivariate logistic regression analysis to determine the effect of these variables when adjusted for the effect of other predictors. The results are presented in Table 18.

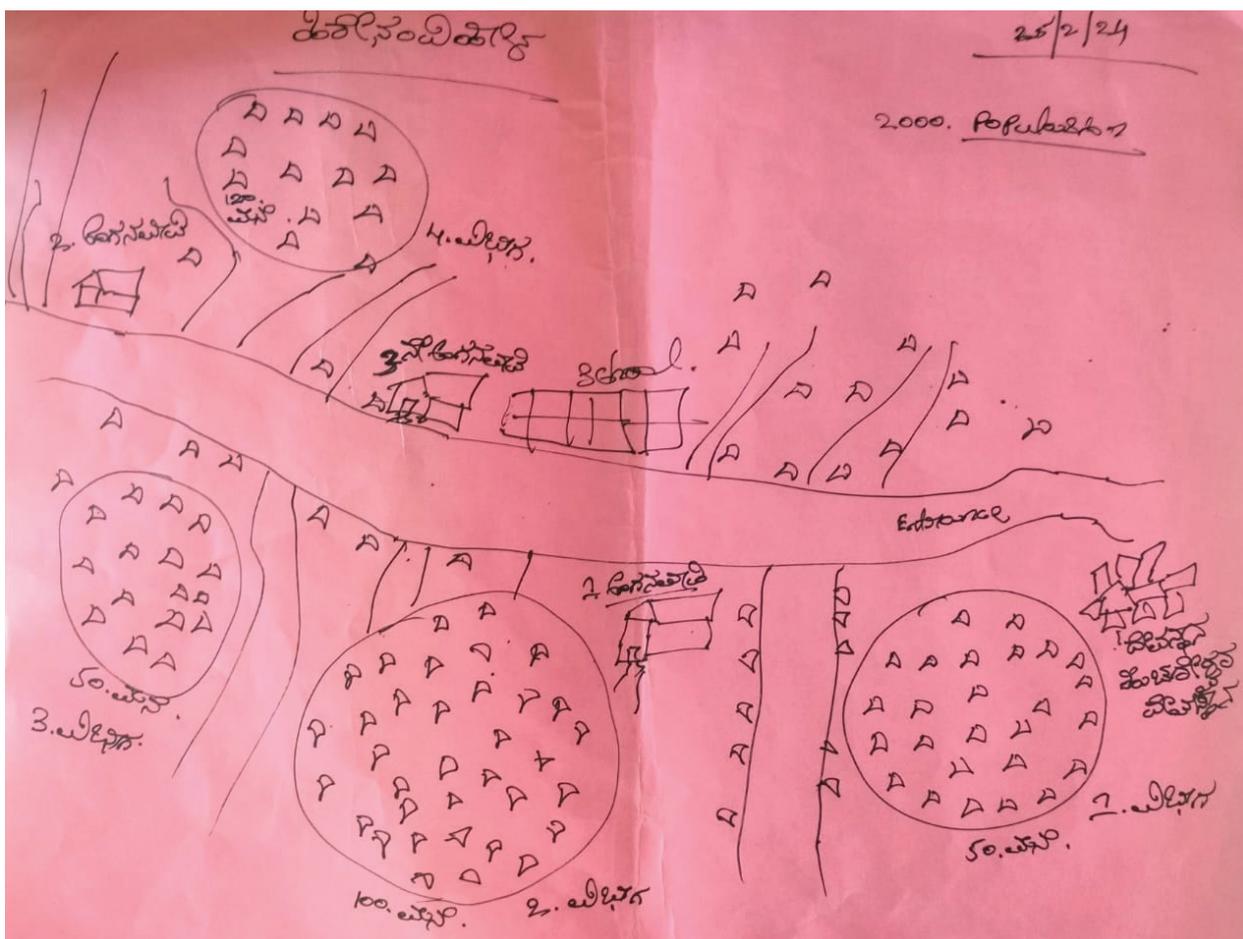
Table 18: Results of Multivariate Logistic regression for females having high self-efficacy

Predictors of High Self-Efficacy	High		Low		Adjusted Odds Ratio (95% CI)
	Int %	Non- Int %	Int %	Non- Int %	
Participant Groups					
Intervention (Ref)					
Non-Intervention					0.899 (0.649–1.245)
Caste					
GENERAL/OTHER (Ref)	57.1	43.9	42.9	56.1	
OBC	60.8	55.4	39.2	44.6	1.353 (0.699–2.619)
SC/ST (Ref)	51.6	44	48.4	56	1.131 (0.568–2.254)
Marital Status					
Unmarried (Ref)	66.4	62.8	33.6	37.2	
Engaged	60	56	40	44	0.780 (0.459–1.325)
Married	47.1	42.2	52.9	57.8	0.509 (0.362–0.714) ***

Education					
Above Higher Secondary (Ref)	68	67.3	32	32.7	
Up to Upper Primary (8)	45.5	23.3	54.5	76.7	0.325 (0.194–0.546) ***
Secondary (9-10)	35.4	38	64.6	62	0.458 (0.298–0.703) ***
Higher Secondary (11-12)	57.5	60.6	42.5	39.4	0.907 (0.628–1.310)
Employment					
Yes (Ref)	61.9	45.8	38.1	54.2	
No	52.7	58.9	47.3	41.1	0.578(0.419–0.797) ***
Participation in different groups					
Yes (Ref)	52.5	43.3	47.5	56.7	
No	64.2	51.8	35.8	48.2	0.605 (0.423–0.864) **
Parent Literacy					
Both/Single Parent Literate (Ref)	62.3	55.6	37.7	44.4	
Both illiterate	53.7	45.6	46.3	54.4	0.748 (0.564–0.992) **
Siblings					
More than one brother and sister (Ref)	58	52.2	42	47.8	
No siblings	45.5	32	54.5	68	0.190 (0.086–0.419) ***
Only brothers	60.6	55.5	39.4	44.5	0.879 (0.619–1.248)
Only sisters	60	44.1	40	55.9	0.319 (0.203–0.504) ***
Parent Daughter Relationship					
High (Ref)	71.9	60.1	28.1	39.9	
Weak	46.6	38.7	53.4	61.3	0.310 (0.215–0.446) ***
Medium	44.2	51.1	55.8	48.9	0.338 (0.225–0.508) ***
DMI					
High (Ref)	61.6	55.7	38.4	44.3	
Low	25.7	17.1	74.3	82.9	0.418 (0.243–0.718) **
Self Esteem					
High (Ref)	63.1	60.7	36.9	39.3	
Low	34.8	17.4	65.2	82.6	0.289 (0.195–0.429) ***

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

The Sphoorthi intervention was effective in enhancing self-efficacy, with participants in the non-intervention group showing lower odds of high self-efficacy compared to those in the non-intervention group (AOR = 0.899). Although the p-value was statistically insignificant when adjusted for other variables, the significant p-value from the univariate analysis suggests that the Sphoorthi intervention helped to improve self-efficacy. Married respondents (AOR = 0.509) had significantly lower odds of high self-efficacy compared to unmarried respondents. In Educational attainment, those with education only up to upper primary (AOR = 0.325) and secondary levels (AOR = 0.458) had significantly lower odds of high self-efficacy compared to participants with education beyond higher secondary. Those unemployed (AOR=0.578) and not participating in any groups had lower odds of high self-efficacy (AOR = 0.605), suggesting the possible benefit of employment and social involvement. Having both parents' illiterate was associated with lower odds of high self-efficacy (AOR = 0.748) compared to having at least one literate parent. Regarding siblings, individuals with only sisters (AOR = 0.319) had significantly lower odds of high self-efficacy compared to those with more than one brother and sister. Those with no siblings had the lowest odds of high self-efficacy (AOR = 0.190) compared to those with multiple siblings. Participants reporting a weak (AOR = 0.310) or medium (AOR = 0.338) relationship with their parents had significantly lower odds of high self-efficacy than those with strong relationships. Low decision-making involvement (AOR = 0.418) and low self-esteem (AOR=0.289) were significantly linked to decreased self-efficacy.



Village settlement divided into clusters, with household listing conducted for the survey

Section 3: Effectiveness of Sphoorthi Program on Gender Roles and Rights, Decision Making and Parent-Daughter Relationship

3.1 Gender Roles:

Sibling-related characteristics, including sibling composition and the level of support received by daughters from parents compared to sons, were analyzed. A chi-square test for association was initially applied to determine whether there was a relationship between the participant groups (intervention and non-intervention) and these characteristics. For those characteristics showing a significant association, a test for proportions was conducted to examine whether the proportion of parents favoring sons over daughters was significantly lower in the intervention group. The results are presented in Table 19.

Table 19: Distribution of adolescent girls based on sibling characteristics and support given by parents

	Intervention (N=412)		Non-Intervention (N=665)		P (Int) < P (N-Int)
	Sample	Percent	Sample	Percent	p-value
Sibling Composition					
No siblings	11	2.70%	25	3.80%	
Only brothers	99	24%	137	20.60%	
Only sisters	67	16.20%	92	14%	
More than 1 brother or sisters	236	57.10%	411	61.80%	
Support given by parents					
	(N=335)		(N=548)		p-value
Priority in Education					
Equal importance to both	254	75.8 %	361	65.9 %	
Brother's education	42	12.5 %	148	27.0 %	< 0.001
My education	38	11.3 %	38	6.9 %	
Neither	1	0.3 %	1	0.2 %	
Restrictions on Brother's Outdoor Activities					
Yes	38	11.3 %	51	9.3 %	
No	297	88.7 %	497	90.7 %	
Expectations for Household Chores					
Only brother	36	10.70%	50	9.10%	
Only me	79	23.60%	155	28.30%	
Neither	0	0%	5	0.90%	
Both	220	65.70%	338	61.70%	
Time allocation for education and leisure					
Only brother	39	11.60%	103	18.80%	0.003
Only me	30	9%	24	4.40%	
Neither	0	0%	1	0.20%	
Both	266	79.40%	420	76.60%	

Involvement in Household Decision-Making					
Only brother	66	19.70%	144	26.30%	0.014
Only me	54	16.10%	60	10.90%	
Neither	11	3.30%	9	1.60%	
Both	204	60.90%	335	61.10%	

Table 19 shows that approximately 57.1% of females in the intervention group and 61.8% in the non-intervention group had more than one sibling. Among participants with brothers, there was a statistically significant association between intervention status and parental priority in education ($\chi^2 = 28$, $df = 3$, $p < 0.001$). In both groups, for various characteristics considered, over 65% of parents reported giving equal importance to the education of both sons and daughters. However, a test for proportions indicates that a significantly higher proportion of parents in the non-intervention group prioritized the education of sons over daughters. Approximately 90% of females in both groups reported that their parents placed no restrictions on their brothers' outdoor activities. Regarding household chores, 65.7% in the intervention group and 61.7% in the non-intervention group stated that parents had equal expectations from both sons and daughters.

A statistically significant association was found between intervention status and both parental involvement in time allocation for education and leisure ($\chi^2 = 14.3$, $df = 3$, $p = 0.001$) and in household decision-making ($\chi^2 = 10.6$, $df = 3$, $p = 0.014$). More than 75% of females reported that parents were equally involved in allocating time for both them and their brothers. However, a test for proportions indicated that a significantly higher proportion of parents in the non-intervention group prioritized the educational and leisure time of sons over daughters. Additionally, about 61% of females in both groups reported that their parents involved both them and their brothers in household decision-making, yet a significantly higher proportion in the non-intervention group reported that only their brothers were given this involvement.

3.2 Decision-Making Index

The various components of the decision-making process were combined to create a composite index reflecting females' participation in decision-making. Based on percentile distribution, the index was categorized into 'high' and 'low' levels, whose distribution is presented in Table 20. The details regarding the computation of this index are outlined in Appendix B.

Table 20: Distribution of adolescent girls based on the decision-making index

DMI	Intervention (N=413)		Non-Intervention (N=665)		p-value
	Sample	Percent	Sample	Percent	
High	378	91.50%	583	87.70%	0.048
Low	35	8.50%	82	12.30%	

As shown in Table 20, 91.5% of females in the intervention group and 87.7% in the non-intervention group demonstrated a high level of decision-making. A test of differences in proportions indicated a statistically significant difference in decision-making between the intervention and non-intervention groups ($p = 0.048$).

Participation in decision-making was assessed across various domains, and the results are presented in Table 21. A chi-square test for association was used to examine the presence of a relationship between the intervention and these domains. Additionally, a test for proportions was conducted to determine whether the proportion of females who independently participated in decision-making was significantly higher in the intervention group.

Table 21: Distribution of adolescent girls by Involvement in Decision-Making Across Various Domains

Decision	Intervention (N=413)		Non-Intervention (N=665)		p-value	
						P (Int) > P (N-Int)
Continuing Education					<0.001	
Jointly with Parents/husband/in-laws/guardians	321	77.7 %	549	82.6 %		
Individually	68	16.5 %	53	8.0 %		<0.001
Not able to take Decision	11	2.7 %	24	3.6 %		
Opinion not considered	13	3.1 %	39	5.9 %		
Type of school/college					0.053	
Jointly with Parents/husband/in-laws/guardians	298	72.2 %	478	71.9 %		
Individually	94	22.8 %	123	18.5 %		
Not able to take Decision	10	2.4 %	24	3.6 %		
Opinion not considered	11	2.7 %	40	6.0 %		
Level of education					0.056	
Jointly with Parents/husband/in-laws/guardians	294	71.2 %	470	70.7 %		
Individually	96	23.2 %	130	19.5 %		
Not able to take Decision	13	3.1 %	42	6.3 %		
Opinion not considered	10	2.4 %	23	3.5 %		
Job/Work					0.009	
Jointly with Parents/husband/in-laws/guardians	308	74.6 %	547	82.3 %		
Individually	99	24.0 %	105	15.8 %		0.0005
Not able to take Decision	4	1.0 %	8	1.2 %		
Opinion not considered	2	0.5 %	5	0.8 %		

Who talk in the community					0.002	
Jointly with Parents/husband/in-laws/guardians	228	55.2 %	431	64.8 %		
Individually	185	44.8 %	232	34.9 %		0.0007
Opinion not considered	0	0.0 %	2	0.3 %		
Involvement in purchasing clothes for self					< .001	
Jointly with Parents/husband/in-laws/guardians	247	59.8 %	502	75.5 %		
Individually	166	40.2 %	159	23.9 %		<0.001
Opinion not considered	0	0.0 %	4	0.6 %		
Going out for family gatherings, social events, or outings					0.002	
Jointly with Parents/husband/in-laws/guardians	290	70.2 %	528	79.4 %		
Individually	118	28.6 %	133	20.0 %		<0.001
Opinion not considered	5	1.2 %	4	0.6 %		
Involvement in purchasing household items					0.838	
Jointly with Parents/husband/in-laws/guardians	365	88.4 %	599	90.1 %		
Individually	38	9.2 %	51	7.7 %		
Not able to take a decision	1	0.2 %	2	0.3 %		
Opinion not considered	9	2.2 %	13	2.0 %		

The Chi-square test results from Table 21 revealed a significant association between intervention status and female participants' involvement in decision-making across most domains (p -values < 0.05), except for purchasing household items, where no significant difference was found ($p = 0.838$). Notably, the intervention group exhibited a higher proportion of individual decision-making in key areas such as continuing education (16.5% vs. 8.0%), job/work (24.0% vs. 15.8%), community participation (44.8% vs. 34.9%), purchasing clothes for self (40.2% vs. 23.9%), and attending social events (28.6% vs. 20.0%) compared to the non-intervention group. Conversely, joint decision-making with parents or guardians was more common in the non-intervention group for these domains. These findings suggest that the intervention was associated with greater autonomy and empowerment among female participants in making individual decisions related to their education, work, social engagement, and personal choices.

3.3 Predictors of high participation in decision-making by adolescent girls.

A univariate logistic regression analysis was conducted to identify the predictors of high levels of female participation in decision-making. All predictor variables included in the analysis are listed in Appendix G. The significant predictors from the univariate analysis are used to construct the multivariate logistic regression model. The results are given in Table 22

Table 22: Results of multivariate logistic regression for a high level of participation in decision making by adolescent girls

Predictors of Participation Decision Making	High		Low		Adjusted Odds Ratio (95% CI)
	Int %	Non- Int %	Int %	Non- Int %	
Participant Groups					
Intervention (Ref)					
Non-Intervention					0.918 (0.562–1.500)
Religion					
Hindu (Ref)	92.1	88.5	7.9	11.5	
Non-Hindu	81	77.8	19	22.2	0.547 (0.272–1.100) *
Marital Status					
Unmarried (Ref)	94.6	90.8	5.4	9.2	
Engaged	85.7	92	14.3	8	0.832 (0.342–2.020)
Married	88.4	84.9	11.6	15.1	0.954 (0.567–1.606)
Education					
Above Higher Secondary (Ref)	97.1	96.9	2.9	3.1	
Up to Upper Primary (8)	86.4	80.2	13.6	19.8	0.331 (0.142–0.774) **
Secondary (9-10)	84.6	80	15.4	20	0.276 (0.128–0.592) ***
Higher Secondary (11-12)	86.7	88.7	13.3	11.3	0.279 (0.136–0.572) ***
Misbehavior by anyone in the last 12 months					
No (Ref)	91.7	88	8.3	12	
Yes	66.7	73.3	33.3	26.7	0.686 (0.201–2.341)
Preferred Marriage age <21					
No (Ref)	91.2	86.3	8.8	13.7	
Yes	95	94	5	6	0.334 (0.154–0.724) **
Parent-Daughter Relationship					
High (Ref)	97.00	91.00	3.00	9.00	
Weak	85	86.2	15	13.8	0.637 (0.379–1.071) *
Medium	88.30	82.70	11.70	17.30	0.522 (0.292–0.934) **
Self Esteem					
High (Ref)	95.4	94.8	4.6	5.2	
Low	71.2	63.1	28.8	36.9	0.167 (0.105–0.264) ***
Self-Efficacy					
High (Ref)	96.3	95.9	3.7	4.1	
Low	84.8	79.1	15.2	20.9	0.415 (0.241–0.714) **

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

The results from Table 22 show that, compared to the intervention group, participants in the non-intervention group had slightly lower odds of high participation in decision-making (AOR = 0.918), indicating a positive role of the Sphoorthi intervention in enhancing females' involvement in household and personal decision-making processes. Although the association did not remain statistically significant after adjusting for other variables, it was significant in the univariate analysis. Non-Hindu participants had significantly lower odds of high participation than Hindus (AOR = 0.547). Those with education levels up to upper primary, secondary, and higher secondary had substantially lower participation in decision-making compared to those with education above higher secondary (AOR = 0.331, 0.276, and 0.279, respectively). Participants who preferred marriage less than age 21 had lower odds of high participation compared to those who did not (AOR = 0.334). Individuals with low self-esteem and low self-efficacy also had low odds of high participation in decision-making (AOR = 0.167 and 0.415, respectively). In terms of parent-daughter relationships, participants with weak and medium relationships had significantly lower odds of high participation compared to those with a high-quality relationship (AOR = 0.637 and 0.522, respectively).

3.4 Parent-Daughter Relationship

The parent-daughter relationship was assessed by evaluating the daughters' comfort in discussing various topics with their parents, along with the support received from parents in areas such as education, daily chores, participation in household decision-making, and equitable treatment of daughters and sons. A composite score was derived from these components to construct the Parent-Daughter Relationship Index (PDRI) (see Appendix C). Based on percentile distribution, the index was classified into three levels: 'Low', 'Medium', and 'Strong', and its distribution is given in Table 23.

Table 23: Distribution of adolescent girls based on Parent Daughter Relationship Index

PDRI	Intervention (N=413)		Non-Intervention (N=665)		p-value
	Sample	Percent	Sample	Percent	
Weak	133	32.20%	225	33.80%	0.981
Medium	77	18.60%	139	20.90%	0.411
Strong	203	49.20%	301	45.30%	0.237

The results presented in Table 23 indicate that 32.20% of females in the intervention region and 33.80% in the non-intervention region exhibited a weak PDRI. Additionally, 18.60% and 20.90% of females in the intervention and non-intervention regions, respectively, fell into the medium category, and 49.20% and 45.30% demonstrated a strong PDRI. A test of differences in proportions indicated no statistically significant difference in PDRI between the intervention and non-intervention groups ($p > 0.05$) across all three categories.

3.5 Comfort in discussing sensitive health topics with father

The comfort levels of females, particularly regarding sensitive health topics such as puberty, bodily changes, and menstrual health, are presented in Table 24, along with p-values from the chi-square test and the test for proportions.

Table 24: Distribution of females based on comfort discussing sensitive health topics with their father

Issue	Intervention (N=413)		Non-Intervention (N=665)		p-value	
	Sample	Percent	Sample	Percent		P (Int) > P (N-Int)
Puberty and growth-related body changes					<0.001	
Comfortable	97	23.5 %	92	13.8 %		<0.001
Somewhat comfortable	80	19.4 %	85	12.8 %		0.002
Neutral	154	37.3 %	373	56.1 %		
Uncomfortable	19	4.6 %	23	3.5 %		
Very Uncomfortable	16	3.9 %	23	3.5 %		
N/A	47	11.4 %	69	10.4 %		
Menstrual Health					0.002	0.001
Comfortable	89	21.5 %	95	14.3 %		
Somewhat comfortable	71	17.2 %	100	15.0 %		
Neutral	159	38.5 %	335	50.4 %		
Uncomfortable	25	6.1 %	26	3.9 %		
Very Uncomfortable	21	5.1 %	39	5.9 %		
N/A	48	11.6 %	70	10.5 %		

Findings from Table 24 indicate that 23.5% of females in the intervention group felt comfortable discussing puberty and body-related changes with their father, compared to 13.8% in the non-intervention group. Similarly, 21.5% of females in the intervention group reported comfort in discussing menstrual health, whereas only 14.3% did so in the non-intervention group. The statistically significant p-values from the chi-square test indicate an association between group type and comfort in discussing these topics. Furthermore, the significant p-values from the proportion test suggest that a higher proportion of females in the intervention group exhibit greater comfort in communicating with their fathers about these sensitive issues.

3.6 Predictors of a strong parent-daughter relationship

The categorical Parent-Daughter Relationship Index (PDRI) with 3 categories was converted into a binary variable (Strong PDRI = 1; Otherwise = 0). Univariate logistic regression was used to identify factors associated with the parent-daughter relationship. All variables included in the analysis are detailed in Appendix H. The results of multivariate logistic regression by considering significant variables from the univariate analysis are presented in Table 25.

Table 25: Results of Multivariate logistic regression for females with strong PDR

Predictors of Strong PDRI	Weak		Medium		Strong		Adjusted Odds Ratio (95% CI)
	Int %	Non-Int %	Int %	Non-Int %	Int %	Non-Int %	
Education							
Above Higher Secondary (Ref)	24.3	21.4	19.4	21.9	56.3	56.6	
Upto Upper Primary (8)	59.1	53.4	9.1	11.2	31.8	35.3	0.615 (0.431–0.877) **
Secondary (9-10)	38.5	34.7	18.5	23.3	43.1	42	0.775 (0.504–1.192)
Higher Secondary (11-12)	37.5	34	19.2	23.6	43.3	42.4	0.777 (0.465–1.299)
Misbehavior by anyone in last 12 months							
No(Ref)	32	32.9	18.8	21.2	49.3	45.8	
Yes	66.7	73.3	0	6.7	33.3	20	0.222 (0.049–1.012) *
Preferred Marriage age <21							
No (Ref)	30.8	31	19.8	22.2	49.3	46.8	
Yes	45	47.4	7.5	14.7	47.5	37.9	0.796 (0.520–1.221)
Parent Literacy							
Both/Single Parent Literate (Ref)	28.8	31.9	19.1	20.3	52.1	47.8	
Both illiterate	36.7	36.1	18.1	21.6	45.2	42.3	0.875 (0.693–1.231)
Siblings							
More than one brother and sister (Ref)	41.6	42.4	21	25.4	37.4	32.2	
No siblings	0	4	0	0	100	96	1.312 (1.175–1.642) ***
Only brothers	32.3	35.8	27.3	24.1	40.4	40.1	1.216 (0.875–1.690)
Only sisters	3.1	1.1	0	2.2	96.9	96.8	1.869 (1.394–2.249) ***
Self Esteem							
High (Ref)	27.7	33.1	18.4	20	53.9	46.9	
Low	56.1	36.2	19.7	24.2	24.2	39.6	0.960 (0.631–1.459)
Self Efficacy							
High (Ref)	25.6	25.7	14	20.9	60.3	53.4	
Low	41.5	42.3	25.1	20.9	33.3	36.8	0.306 (0.221–0.424) ***
DMI							
High (Ref)	29.9	33.3	18	19.7	52.1	47	
Low	57.1	37.8	25.7	29.3	17.1	32.9	0.506 (0.282–0.906) **

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

The findings from Table 25 revealed that participants with education up to the upper primary level had lower odds of reporting strong PDRI compared to those educated above higher secondary (AOR = 0.615). Similarly, those who had experienced misbehavior in the past 12 months showed lower odds of strong PDRI (AOR = 0.222).

Family composition also played a notable role. Participants with no siblings (AOR = 1.312) and those with only sisters (AOR = 1.869) were more likely to report strong PDRI compared to those with more than one brother and sister. In contrast, self-related factors such as low self-efficacy (AOR = 0.306) and low decision-making involvement (AOR = 0.506) were associated with significantly lower odds of strong PDRI, highlighting the importance of empowerment and self-confidence in maintaining close parental relationships.

3.7 Menstrual Health and Hygiene

The distribution of adolescent girls according to age at first period, experience of menstrual problems, types of menstrual problems faced, and preferred menstrual hygiene methods, comparing the intervention and non-intervention groups, is presented in Table 26.

Table 26: Distribution of Adolescent Girls by Menstrual Characteristics and Practices

Variables	Intervention		Non-Intervention		p-value
	Sample	Percent	Sample	Percent	
Median Age at First Period (Years)	14		13		
Faced Menstrual Problems					
Yes	111	26.90	157	23.60	0.263
No	302	73.10	507	76.40	
Menstrual Problem Faced*					
Painful periods	100	90.10	137	87.30	0.603
Frequent or short periods	11	9.90	15	9.60	1
Irregular periods	34	30.60	42	26.80	0.578
Prolonged bleeding	13	11.70	25	15.90	0.426
Scanty bleeding	2	1.80	6	3.80	
Inter-menstrual bleeding	1	0.90	0	0.00	
Preferred Method*					
Use cloth	196	47.50	439	66.10	< 0.001
Use napkins	321	77.72	337	50.75	< 0.001
Use nothing	0	0.00	4	0.60	

Note: * multi response-based question

The median age at first period was reported as 14 years and 13 years among girls in the intervention and non-intervention areas, respectively. Among those who faced menstrual problems, the types of issues particularly painful periods (90.1% vs. 87.3%), frequent or short cycles (9.9% vs. 9.6%),

irregular periods (30.6% vs. 26.8%), and prolonged bleeding (11.7% vs. 15.9%) did not differ significantly between the intervention and non-intervention groups.

Preferred menstrual hygiene practices varied notably between areas, with over 75% of respondent in the intervention area reporting adherence, compared to 50% in the non-intervention area. Use of napkins was 20% points higher in the intervention group (77.72% vs. 50.75%; $p < .001$), while use of cloth was 19% points fewer in the intervention group (66.1% vs. 47.5%; $p < .001$). These results suggest that the intervention may have positively influenced menstrual hygiene practices, with more girls using sanitary napkins and fewer relying on cloth.

Table 27 presents the distribution of adolescent girls based on discussion of menstrual problems, their discussion partners, and restrictions faced during menstruation, across the intervention and non-intervention groups.

Table 27: Distribution of Adolescent Girls by Support and Restrictions Experienced During Menstruation

Variables	Intervention		Non-Intervention		p-value
	Sample	Percent	Sample	Percent	
Discussed Menstrual Problems					
Yes	336	81.40	524	78.90	0.372
No	77	18.60	140	21.10	
Discussion with *					
Family	336	100.00	523	99.80	0.342
Friends	27	8.00	8	1.50	< 0.001
Teachers	1	0.30	0	0.00	
KHPT Staff	16	4.80	0	0.00	
Faced Restriction					
Yes	308	74.60	543	81.80	0.006
No	105	25.40	121	18.20	
Restrictions faced*					
Not allowed to go to the temple	286	92.90	514	94.70	
Not to do pooja	239	77.60	410	75.50	
Not to pick kids	152	49.40	188	34.60	
Not to have some particular food	85	27.60	119	21.90	
Separate arrangement for sleeping	23	7.50	22	4.10	
Wear different kinds of clothes	39	12.70	21	3.90	
Not allowed to do household chores	22	7.10	15	2.80	
Not allowed to go outside	7	2.30	3	0.60	
Not allowed to go to school	3	1.00	0	0.00	

Note: * Multi-response-based question

Most girls in both groups discussed menstrual problems (81.4 vs. 78.9), and almost all of them discussed these issues with family. A significantly higher proportion of girls in the non-intervention group faced restrictions during menstruation compared to the intervention group (74.6 vs. 81.80; $p = 0.006$). Common restrictions included not being allowed to go to the temple (92.9 vs. 94.7) and not doing pooja (77.6 vs. 75.5).

The distribution of adolescent girls based on utilization of health services, health issues faced, and basic health assessments such as hemoglobin testing, BMI measurement, and anemia screening, across the intervention and non-intervention groups, is presented in Table 28.

Table 28: Distribution of Adolescent Girls by Health Assessments and Services

Variables	Intervention		Non-Intervention		p-value
	Sample	Percent	Sample	Percent	
Utilization of Sneha Clinic					
Yes	144	34.90	88	13.30	< 0.001
No	269	65.10	576	86.70	
Faced Health Issues					
Yes	09	2.20	13	2.00	0.977
No	404	97.80	651	98.00	
Tested for Hb					
Yes	192	46.50	293	44.10	0.487
No	221	53.50	371	55.90	
Measured BMI					
Yes	150	36.30	258	38.90	0.442
No	263	63.70	406	61.10	
Tested for Anemia					
Yes	21	5.10	21	3.20	0.153
No	392	94.90	643	96.80	

Utilization of the Sneha Clinic was significantly higher in the intervention group compared to the non-intervention group (34.9 vs. 13.3; $p < 0.001$). These results suggest that the intervention effectively increased the use of the Sneha Clinic among adolescent girls. Testing for hemoglobin, BMI measurement, and anemia screening did not differ significantly between the intervention and non-intervention groups.

3.8 Teenage Pregnancy

Pregnancy information was obtained from all ever-married participants, comprising 155 girls in the intervention area and 365 individuals in the non-intervention area. The sample distribution of ever-pregnant respondents is represented in the figure 2.

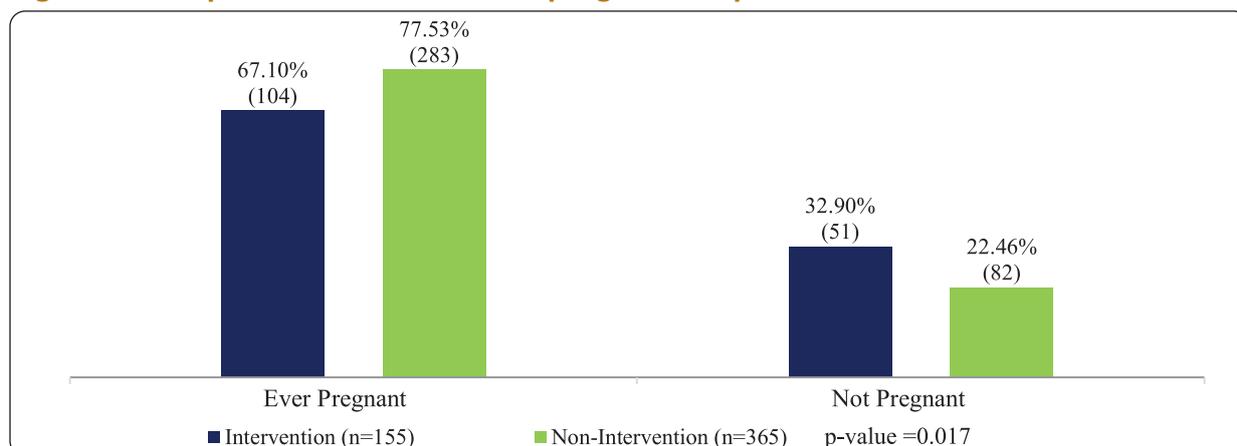
Figure 2: Sample distribution of ever-pregnant respondents

Table 29 presents the distribution of adolescent girls based age at first pregnancy, and pregnancy outcomes across the intervention and non-intervention groups.

Table 29: Distribution of Adolescent Girls based on pregnancy characteristics and outcomes.

Variables	Intervention (104)		Non-Intervention (283)		p-value
	Sample	Percent	Sample	Percent	
First Pregnancy as a teenager*					
Yes	32	30.77	116	40.99%	0.086
No	72	69.23	167	59.01%	
Median Age at first pregnancy* (years)	20		20		
Caste*					
GENERAL/OTHER	2	2.40%	15	6.40	
OBC	61	72.60	141	60.50	0.153
SC/ST	21	25.00	77	33.10	0.202
Education *					
Up to Upper Primary (8)	8	9.50	62	26.60	0.003
Secondary (9-10)	27	32.10	74	31.80	1
Higher Secondary (11-12)	39	46.40	76	32.60	0.056
Above Higher Secondary	10	11.90	21	9.00	0.621
Pregnancy times					
First Pregnancy	20	19.23	50	17.67	
Multiple Pregnancies	84	88.77	233	82.33	
Adverse Pregnancy Outcomes †					
Yes	2	2.38	18	7.73	
No	82	97.62	215	92.27	

Note: * only for those pregnant, † Only for those who were not pregnant the first time.

Approximately 77% of adolescent girls in the non-intervention area and 67% in the intervention area reported having been pregnant. This indicates that the prevalence of pregnancy was significantly 10 percentage points lower in the intervention area compared to the non-intervention area. The lower teenage pregnancy rate in the intervention area (30.8%) compared to the non-intervention group (41.0%) suggests the positive effects of reproductive health interventions. However, the median age at first pregnancy was the same (20 years) in both groups. The majority of pregnant women in both the intervention (72.60%) and non-intervention groups (60.50%) belonged to the OBC category. A higher proportion of pregnant girls in the non-intervention group had education only up to upper primary (26.6% vs. 9.5%; $p = 0.003$), whereas the intervention group had higher secondary education (46.4% vs. 32.6%; $p = 0.056$), suggesting the role of higher education levels in better knowledge and decision-making regarding pregnancy.

The prevalence of adverse pregnancy outcomes was similar between the groups. In the intervention area, out of a total of 104 ever-pregnant respondents, 20 were experiencing their first pregnancy, while the remaining 84 respondents had multiple pregnancies. Among these 84, 2 respondents reported experiencing at least one adverse pregnancy outcome. Similarly, in the non-intervention area, 283 respondents were ever-pregnant, of whom 50 were first-time pregnancies and 233 had multiple pregnancies. Among those with multiple pregnancies, 18 reported at least one adverse pregnancy outcome.

The age at first pregnancy was compared between the intervention and non-intervention groups. Since the Shapiro–Wilk test indicated deviations from normality, the Mann–Whitney U test was employed to compare the median age at first pregnancy. The test results are presented in Table 30.

Table 30: Test Statistic and p-values from the Shapiro-Wilk and Mann-Whitney U test for age at first pregnancy

Variable	Shapiro Wilk		Mann Whitney U test	
	Test Statistic	p-value	Test Statistic	p-value
Age at First Pregnancy	0.943	< 0.001	9257	0.448

The results of the Mann-Whitney U test suggested that the median age at first pregnancy did not significantly differ between the intervention group (Median = 20 years) and the non-intervention group (Median = 20 years).

PART 2- QUALITATIVE FINDINGS

Section 4: Respondents' Characteristics

A total of 45 respondents were approached and invited to participate in the study. Out of which 41 agreed and participated in the study. Four participants could not take part in the study due to work-related travel to another district. The details of the participants are provided in Table 26.

Table 26: Demographic details of participants in qualitative interviews

Variables	Frequency	Percentage (%)
Age:		
18-30 years	12	29.27
31-50 years	25	60.98
51 and above	4	9.76
Gender:		
Total males	14	34.15
Total Females	27	65.85
Education:		
No formal education	4	9.76
Upper Primary (up to 8 th grade)	4	9.76
Secondary (9-10)	7	17.07
Higher secondary education (11-12)	13	31.71
Graduation and above	13	31.71
Occupation:		
Local administrative governance (GP/PDO)	8	19.51
Community and NGO workers	6	14.63
Health workers	6	14.63
Farmer/Agriculturist/daily wage workers	5	12.20
Own business (Tailor, beautician, general store)	2	4.88
Homemaker/ Students/ Others	14	34.15

The majority of participants were aged 31–50 years (60.98%), with a higher representation of females (65.85%). In terms of education, nearly one-third had completed higher secondary education (31.71%), and an equal proportion held a graduation degree or higher. Most participants were engaged as homemakers, students, or in other roles (34.15%), followed by those involved in local governance (19.51%) and community or health work (29.26% combined).

Section 5: Analysis of Qualitative Findings

The qualitative data analysis followed a thematic approach, using both inductive and deductive coding strategies. Inductive coding involved identifying patterns and themes directly from the interview transcripts, allowing researchers to label recurring issues raised by participants. In parallel, deductive coding was guided by the interview guide and relevant literature on the Sphoorthi evaluation program. A detailed codebook was used to ensure consistency in coding and interpretation. After coding, related codes were clustered into broader overarching themes.

On conducting a thematic analysis, the findings of the research are presented in the form of themes. Here are the core themes that emerged from the data. The codes and themes are organized under the RE-AIM framework.

THEMES AND SUB-THEMES

5.1 REACH

The theme of reach assesses to whom the program has reached and whether this group is representative of the broader population of adolescent girls in Koppal taluk. The reach includes the underlying societal issues, awareness, and access to the program among adolescent girls belonging to different socioeconomic groups and marginalized communities.

5.1.1 Sphoorthi program access and inclusiveness

This sub-theme highlights how initial hesitancy gave way to acceptance as the program gained trust. Support from stakeholders like the panchayat and consistent outreach helped ensure wider access and inclusion across the community.

The implementers of the Sphoorthi program from KHPT were able to recall how the program was initiated. Some of them began their careers in the organization as community organizers and expressed pride in being involved in an adolescent-focused program. They also shared that the program served as a platform for them to enhance their knowledge and understanding of issues related to the adolescent age group. They were involved in the task of selecting the girls in the intervention area to participate actively in the program and convincing their parents to get involved and allow their daughters too. From the implementer's perspective, consistent engagement through *Samvadh*s and interactive activities like *Pavaada Bailu* gradually helped shift adolescent girls' and parents' understanding of gender and caste norms. Over time, these efforts fostered social integration, as even parents from different caste groups began attending meetings across communities, indicating reduced barriers and increased acceptance.

"They were from KHPT... they called these adolescent girls for meeting... they convinced the girls that they will give an education regarding schooling, child marriage, etc... they informed the parents also.. they invited parents for meeting for three months... for girls, they were doing meetings monthly... the parents were educated to continue their daughters' schooling and not to marry them off early." [Intervention Stakeholders, ASHA, 42 years]

"Over time, parents from the SC colony began attending meetings on the other side, while parents from other castes started going to the SC colony for the meetings". [Intervention Community Organizer, 38 years, Female]

Parents, though initially hesitant, especially about allowing daughters to participate in a girls-only program, gradually accepted the initiative after personal home visits and detailed explanations by KHPT staff. These interactions-built trust and understanding, encouraging parental support. One parent shared that their fears reduced once they realized more girls from the same village were also participating. The consistent participation by the girls and the shift in parental attitudes highlight the program's wide reach and its ability to engage beneficiaries across the community effectively.

"A few girls attended the initial meeting, and we got a better understanding of what it was about. She visited homes one by one and explained that the program is meant to help girls move forward in society and prepare them to face life. Girls attended the meetings in one to two weeks, and they got 'Sphoorthi' [enthusiasm] towards the program." [Mother of the intervention area girl, 48 years]

There was a hesitancy.... We were not sure what they would do by calling our children...so there was an initial hesitancy.....after that, once we got to know there would be more girls from our village, there was no fear. [Father of the intervention area girl, 48 years]

5.1.2 Awareness and exposure towards the Sphoorthi program

This subtheme reflects how the program engaged girls and parents through early introductions, interactive sessions, and exposure visits. Activities included group events, motivational talks, and opportunities to interact with peers. While most recalled key experiences, some had difficulty remembering details due to the time gap.

Most of the interviewed girls and parents who participated in the Sphoorthi program could recall the program and even mentioned the names of the staff from the implementing agency who had introduced them to it. The staff played a key role in convincing the parents to allow their daughters to participate by explaining the potential positive impact the program would have on their lives. A few parents accompanied their daughters to the initial meetings and, after gaining trust in the staff, allowed them to continue participating independently.

"KHPT people explained to him (Father) about the program; females are empowered, and it can increase their courage in them. Then he was convinced, stopped objecting." [Intervention area girl, 21 years]

Several interviewed girls mentioned awareness sessions on topics such as the importance of education and child marriage. They also mentioned watching and participating in role plays, learning about healthy food consumption and kitchen gardens, and being taught life skills in an easy-to-understand manner, including through planning games. Many girls also remembered the outdoor activities and tours, which served as motivational experiences and kept them engaged in the program's subsequent activities. A unique feature of the Sphoorthi program was the active involvement of parents in its activities. Parents of the participating girls remembered visiting various places and districts in Karnataka, such as Mysuru and Dakshina Kannada, along with their daughters. They also took part in multiple games, some of which were played together with their daughters, helping to strengthen the parent-daughter relationship. Regular meetings were held between parents and program implementers, during which motivational examples were shared to encourage parents to trust their children and support them in leading a healthy social life.

“They used to invite inspiring people who had once given up on their lives but currently have achieved success. Listening to them, we got motivated to achieve something in life, after which we never missed the weekly meetings of the program. We had leadership camp for 3 days.... they used to conduct activities that made us gain more interest in the program so we used to not skip the program.” [Intervention area girl, 21 years]

“They took the parents to Mysore. They gave very beneficial information there. They showed us female auto drivers as an example. They also showed where a family had four females only and how they were leading their lives independently.” [Mother of intervention area girl, 48 years]

This theme reveals how gender norms and societal expectations continue to influence the access and opportunities available to adolescent girls. While many still face discrimination in education, healthcare, and decision-making, there is growing awareness and a gradual shift in mindsets, both among parents and girls themselves. The Sphoorthi program has played a key role in sparking this change, enabling girls to voice their aspirations and challenge traditional roles. Although challenges persist, the increased reach of supportive interventions and evolving community attitudes indicate a promising trajectory toward greater gender equity.

5.2 EFFECTIVENESS

5.2.1 Empowering Rural Girls Through Education:

This subtheme highlights how the Sphoorthi program empowered girls and their families by promoting education and fostering personal growth. Several girls shared how the Sphoorthi program gave them the confidence to continue their education despite family and societal pressures. One became a beautician after completing her degree, while another plans to pursue a B.Ed. or prepare for government exams. Before Sphoorthi, girls rarely studied beyond 10th grade due to the lack of facilities and prevailing social barriers. Many began their educational journeys by pursuing degrees such as BA, MSW, and nursing diplomas, overcoming significant challenges, including long distances to colleges, caste-based discrimination in hostels, marriage pressures, and unsupportive family environments. Some were married young, particularly during COVID-19, when families sought to reduce wedding expenses, yet managed to continue their education by negotiating with their families. One notable example is a girl who launched her own small business with a one-lakh loan to support both her education and household needs, demonstrating remarkable financial independence. The program led to improved school attendance, reduced dropout rates, and better academic performance, with some girls even winning awards.

A few parents shared that earlier, they prioritized marriage over education for daughters and hesitated to send them for higher studies due to safety and financial reasons. However, exposure to the Sphoorthi program changed their mindset, leading to greater support for girls' education. Some fathers noted that initially, their daughters lacked determination but, over time, developed strong interests in studies and career aspirations. As girls grew more confident and independent, community attitudes shifted to celebrate their achievements. Overall, Sphoorthi significantly empowered rural girls by enabling them to pursue higher education, start careers, and overcome stigma and discrimination.

“Her life has changed. In my opinion, I never thought she would reach this stage in education, considering how fearful she used to be around us. In 6th and 7th grade, she wasn't determined,

but once she reached 8th grade, she changed completely—partly because of our encouragement, and she also developed her own interest as well.” [Father of the intervention area girl, 45 years]

“Yes, madam. There is a place called ABC here village girls go to school. There were many dropouts from that area. The teachers there were being partial, saying things like, ‘You’re from a village, you don’t know anything,’ and so on. The girls were supposed to go to high school there. When I asked the reason for dropping out, they shared this experience. Then we spoke to their parents, encouraging them to let their daughters continue studying and to avoid burdening them with household work. We also motivated the girls, telling them not to worry about what others say and to focus on their studies. That same year, one of the village girls came first in school. Those who used to mock her ended up felicitating her. Even the teachers admitted that no one should be underestimated just because they come from a village. They said that anyone who wants to study should be supported. We felicitated her on International Women’s Day, and she shared all her experiences during the program. Her parents and teachers were present as well.” [Community Organizer Sphoorthi project phase 1, 38 years, female]

“Yes, I once felt that way. Initially, my parents had planned to stop my education after the 10th standard and only allow my elder brother to continue. At that moment, I felt like being female was a punishment. But later, the Sphoorthi program influenced my family and encouraged them to let me study as much as I wanted. Now, I have completed my degree.” [Intervention area girl, 22 years]

5.2.2. Empowering Parents and Adolescents to Delay Early Marriage

Parents reported a marked change in their beliefs about early marriage. Previously, daughters were expected to marry after completing lower secondary education. However, through their involvement with the *Sphoorthi* program, many parents began to recognize the benefits of delaying marriage and instead encouraged their daughters to pursue further education. Some parents, reflecting on their health challenges resulting from early marriage, began advocating for marriage after the age of 21, aligning with both legal guidelines and personal experiences. This shift was accompanied by a parallel transformation among adolescent girls, who displayed increased confidence and agency in making decisions about their futures. Many girls stated that they would only consider marriage after completing their education or becoming financially independent, with some identifying 25 or 26 as the ideal age for marriage. Notably, several girls shared that their families now respected their decisions, highlighting a growing recognition of adolescent agency within the household.

At the community level, a reduction in child marriage was widely acknowledged by program implementers and stakeholders. Facilitators and adolescent girls actively intervened to prevent early marriages, leading to significant changes in several villages where no girl had married before 18 in recent years. Legal awareness combined with girls’ assertiveness in opposing child marriage was critical in driving this shift. Additionally, participants demonstrated a deeper understanding of the health implications of early marriage, noting that young girls often lacked the physical and emotional maturity to manage the demands of marriage and motherhood. Education was increasingly viewed as a tool that fosters informed decision-making and mental readiness, underscoring its role in empowering girls to delay marriage and envision alternative life paths.

“She used to say that she wanted to study, but due to our financial situation, she would say, ‘It’s okay, I won’t study—if my brother completes his education, that’s more than enough.’ We used to think, ‘What will she do by studying anyway? She has to get married and settle down in her husband’s house.’ But because of the program, and as time passed, our thinking changed, and we allowed her to complete her degree.” [Mother of the intervention area girl, 45 years]

“Firstly, early marriage affects their health—they don’t look their age; they appear older and are often not healthy or fit. There’s pressure from the husband, responsibilities at home, taking care of children—all of this becomes very difficult to manage. My main goal was to study and get a job. I only started thinking about marriage after completing my 12th standard, as discussions about it began at home. That was when I seriously gave marriage a thought”. [Mother of the intervention area girl, 45 years]

5.2.3 Economic Stability and Empowerment through the Sphoorthi Program

Participants in the Sphoorthi program reported significant improvements in their ability to earn and manage finances, marking a shift towards greater economic independence. One father shared how his daughter, who aspired to become a beautician, had grown remarkably in her ability to independently manage business operations in the local market. Initially, the family was reluctant to support her dreams, but her dedication to working hard and contributing to household finances highlighted her growing sense of independence. This transformation was acknowledged by her father, who noted that she now not only takes care of herself but also helps support the family through her work. Similarly, another participant reflected on her newfound ability to take care of her family and earn on her own. She expressed a strong preference for financial independence and recognized that the Sphoorthi program had significantly shifted her mindset toward self-reliance, a shift she had not considered before the program.

Another participant, married at the age of 18, shared her struggles to continue her education post-marriage. Despite her family’s initial discouragement, she persisted with the support of her grandmother. This experience illustrates the program’s positive impact in helping young girls overcome societal and familial barriers to education. One girl, married at a young age, explained that her focus had initially been on studying and finding a job. However, discussions at home led her to consider marriage early. Despite her marriage, she continued to aspire to complete her education and work independently, marking a significant shift in her mindset. This transformation underscores how the program changed the perception of marriage as a barrier to women’s personal and professional growth. Financial literacy and entrepreneurship were also key components of economic empowerment within the program. Some participants took a loan and started their own business. This business not only supported their education but also allowed them to invest in insurance and savings, providing financial security for both personal and family needs. The Sphoorthi program fostered an entrepreneurial spirit, encouraging young women to take charge of their financial futures, manage their businesses, and achieve financial self-sufficiency.

Many participants faced challenges with their husbands’ limited support for further education; still, they continued to show resilience. One participant emphasized how her husband’s initial support motivated her to pursue her studies, but the lack of ongoing support highlighted the challenges women face in balancing traditional familial roles with career aspirations. Despite these challenges, the participants’ resilience and the empowerment provided by the program

enabled them to push forward with their educational and professional goals, demonstrating the profound impact of the Sphoorthi program in shaping the economic stability and empowerment of women.

“No, madam... After completing my studies, I will start working. I already have my own business. I took a loan without asking anyone for money to set it up so that I could manage my expenses independently. That’s why I started a shop with a loan of ₹1 lakh. From the money I earn, I have taken out insurance and also saved in the post office to support my education and household expenses.” [Intervention area girl, 23 years]

“One good example is that she said she wanted to do a beautician course, and we never forced her. She is working hard to fulfill her dreams. If I am unwell, she manages the business in the bazaar. She is not afraid.” [Father of the intervention area girl, 50 years]

5.2.4. Empowerment Through Confidence and Compassion

The subtheme highlights how girls and families in the community have become more capable of handling difficult situations, largely due to the influence of the Sphoorthi program. Various narratives reflect this transformation. A girl spoke about the gender discrimination she faced when her parents planned to stop her education after the 10th standard, allowing only her brother to continue. However, empowered by the Sphoorthi program, she negotiated with her family and eventually completed her degree.

Participants also received guidance on responding to harassment, such as teasing or mocking by boys, learning how to react, and what actions to take. In cases of domestic issues, one girl reported that the program taught them about helpline 1098, which has even been used by a peer to stop a child marriage. Parents shared how their daughters have become more thoughtful and composed in handling conflicts, reflecting a positive shift in family dynamics.

One father recounted how his daughter resolved a local dispute with calmness and empathy, offering water to the aggressor and promoting dialogue over anger. Similarly, a mother observed that her daughter now encourages the family to manage disagreements through calm discussions and collective problem-solving.

Cultural taboos around menstruation were addressed as well; one girl now openly discusses the topic with male relatives, crediting her confidence to the program and its training sessions, which included information on SNEHA clinics. Together, these accounts highlight a growing culture of resilience, awareness, and constructive communication within the community.

“...We are told not to enter the god’s room during periods, but we do not follow such beliefs. Some people feel embarrassed to talk about periods in front of their brothers or father, but I talk about it openly, especially with my brothers and brother-in-law. I don’t share much with my mother (or grandmother) or my husband. If I have severe stomach pain, I tell my brother-in-law (Maava), and he takes me to the hospital. Even if I hide it, there’s no rule that says I must tell my mother or brother. Previously, I also used to feel shy or embarrassed to talk about periods, but ever since I joined with the Sphoorthi program, I’ve stopped feeling shy and started speaking about it openly.” [Intervention area girl, 23 years]

“They do not scold others, but they have the courage to point out what is wrong and advise them not to repeat it. If we scold them, they tend to get angry and react negatively. I witnessed a situation where she made them (Group of people involved in dispute) sit down, offered a glass of water, and calmly asked what the fight was about. She then advised me to handle the situation with care and patience.” [Father of the intervention area girl, 45 years]

5.2.5 Nurturing Health and Nutrition through Empowerment

This subtheme explains how the Sphoorthi program helped in improving the health of the adolescent girls and helped the family members to incorporate a healthy lifestyle. Most of the participants in the intervention area expressed that this program brought about a significant and positive shift in the health and nutritional habits of adolescent girls and their families. Adolescent girls underwent regular haemoglobin (Hb) testing and became more aware of anemia and its management. In one instance, a girl was able to improve her Hb levels purely through dietary changes.

The program fostered a broader adoption of healthy eating practices, with families introducing more nutritious foods like green leafy vegetables, ragi ganji, sprouted grains, eggs, and fruits into their meals. Homemade and nutrient-rich alternatives began replacing less healthy options, such as substituting biscuits with *chikkis*. Importantly, the initiative sparked behavioral change girls started challenging traditional norms, like eating last, and began advocating for equal and timely meals. Mothers, too, became more engaged, learning about balanced diets and preparing specialized meals to support their daughters’ health. While community-wide shifts were slower, many girls expressed that they became health advocates within their homes, spreading awareness among peers and family members. Additionally, the program contributed to better menstrual health practices, with families reporting improved understanding and management of menstruation.

“Her health improved. I was worried because she wasn’t getting her periods. After joining Sphoorthi and learning about nutritious food, we changed her diet. While she was at home, I used to prepare healthy meals for her. That was the major change in her life.” [Mother of the intervention area girl, 48 years]

“I eat it, madam. I know the importance of having vegetables because I have experienced physical pain. When I sit, I get back pain. I’m still not old, and yet I already have back pain. That’s why it’s important to consume the right food, and I have realized its significance.” [Intervention area girl, 21 years]

5.2.6 Enhanced Self-Confidence and Interpersonal Skill Development among Adolescent Girls

This subtheme highlights the crucial role played by the Sphoorthi program in enhancing the knowledge and skillsets of adolescent girls while fostering meaningful transformations in parental attitudes and community dynamics. Girls consistently reported increased self-confidence, leadership, and communication abilities, which empowered them to engage more actively both at home and in academic environments. Parents, too, experienced significant mindset shifts through their participation in activities. One father noted that attending a Sphoorthi event with his wife was the only public function they had ever joined together.

Girls also described how Sphoorthi enabled them to overcome hesitation and step into leadership roles. One participant recalled moving from a mindset of staying behind to confidently identifying herself in public and making independent decisions. Recognition in extracurricular areas such as sports served as a powerful motivator. In one case, a girl who had previously been excluded from sports was supported by program facilitators, praised for her talent, and eventually selected for a state-level competition, earning increased support from her family. Also, the program educated girls on navigating broader social systems, teaching them how to access services like ration cards, Aadhaar registration, and bus passes practical knowledge particularly important for rural students. Through the combined effects of skill-building, emotional support, parental involvement, and social awareness, the Sphoorthi program cultivated a strong foundation for personal growth, family transformation, and community-level empowerment.

“At every step, I used to be hesitant. I didn’t participate much during school and PUC days. But once I entered my degree and received proper training, I started identifying myself in public spaces. Until then, I would always stay behind, thinking, ‘Let the brighter ones go ahead.’ Even teachers would often call on the top students, so I would just step back, thinking, ‘Why me?’ I knew I had talent, but I never came forward. Now, I’ve developed leadership qualities. I’ve learned to make decisions for myself. Yes, we need our parents’ support, but in the end, it’s up to us—our parents won’t be with us forever. So, I make my own decisions now. Even at home, Sphoorthi has helped my family recognize that I, too, am present and capable.” [Intervention area girl, 20 years]

“Yes, yes... they speak nicely. They share their experiences, like how they were not aware of the different offices for making ration cards, Aadhaar cards, etc. They learned all these things only through the Sphoorthi program. They didn’t even know how to make bus passes. Since they had to travel from rural areas to urban areas for college, they needed bus passes—this too was learned through the program.” [Intervention area Community organizer, 38 years, female]

5.2.7 Enabling Girls’ Autonomy through Parental Support

The Sphoorthi program played a significant role in reshaping parental attitudes, leading to increased support for their daughters’ aspirations, especially when those aspirations diverged from traditional expectations. Many parents expressed a growing willingness to back their daughters in pursuing unconventional paths—whether that meant starting a business, wearing modern clothing, or traveling for education.

Mothers also described notable changes in their perceptions and behavior. One mother recalled how earlier, her family was hesitant about educating daughters beyond the local area. However, exposure to broader experiences through the Sphoorthi program, such as traveling outside Koppal, helped her recognize the importance of courage and adaptability alongside formal education and allowing them to study and live in distant cities like Bengaluru or Mysuru.

Trust emerged as a key theme. Parents acknowledged that trust in their daughters was fundamental to allowing them greater freedom and opportunity. One mother explained how she and her husband were supportive from the beginning, despite resistance from elders in the family. Another mother affirmed that their family made no distinction between sons and daughters and fully supported their girls in all aspects of life. Mothers reported feeling more involved and confident—some even began challenging restrictive gender norms, such as limitations on mobility or employment, asserting their independence while balancing family responsibilities. While some

fathers expressed that they personally did not benefit, they acknowledged that the program was life-changing for their daughters, which in itself was a meaningful outcome.

While some parents expressed hesitation about more ambitious goals, such as one mother who laughed at the idea of her daughter opening a school, there was still an underlying willingness to be supportive, especially if the daughter's plans were practical and aligned with the family's resources.

“She wanted to study earlier, as education is supported in our family, but she didn't have the courage. Now, she is ready to stay in a hostel and continue her studies. She understands that the Sphoorthi program has changed her life, and she now wants to change and motivate others as well”. [Mother of the intervention area girl, 45 years]

“Yes, I have seen a lot of changes in myself after joining the leadership camp and attending meetings. I actually can't believe I was able to do all this—I didn't even know I could. Of course, I would have completed my studies in commerce, but I never felt that nursing was difficult. Maybe Sphoorthi is the reason I've come this far”. [Intervention area girl who opted for nursing after commerce, 21 years]

5.2.8 Life Changes and Personal Empowerment

Several girls reported that the Sphoorthi program gave them the confidence to face societal challenges independently. For example, one participant shared how she gained the courage to travel alone to Bengaluru for a kabaddi match. She also expressed pride in winning a prize at a university competition, noting the support she received from program facilitators.

Another girl discussed how the program helped her develop a strong mindset about personal safety and confidence in her ability to handle uncomfortable situations. She learned not to fear others unless she had done something wrong and emphasized that she now felt empowered to speak up for herself, a shift she attributed to the skills learned in Sphoorthi.

Parents also noted changes in their daughters' attitudes toward education and independence. One father mentioned how his daughter's mental stability and future-oriented thinking had improved since joining the program. Another mother described how her daughter, once hesitant about pursuing further studies, now aspired to study at a hostel and even hoped to motivate others in her community.

The program also contributed to the broader community, with several girls engaging in social activities. One girl, for instance, was involved in anchoring and organizing games and was actively supporting the education of her siblings. Many of the girls who completed the program are now pursuing higher education or working in community organizations, like KHPT, where they conduct surveys and support local initiatives.

“Yes, the program helped us build trust in our children. We believe that we must first trust our daughters—if we don't, the outside world may suppress them even more. Initially, my father-in-law was not supportive; he questioned the program and asked why we should send our girls. But my husband and I were supportive from the beginning”. [Mother of the intervention area girl, 47 years]

“Yes, before, my parents didn’t allow me to go out alone. I have even faced situations where boys teased me, and my parents would say, ‘The outside world is not safe, so don’t go out alone.’”
[Intervention area girl, 22 years]

5.2.9. Building Communication, Courage, and Confidence for Self-Empowerment

This subtheme provides evidence of how the program has empowered adolescent girls through enhanced personal growth, communication, and social engagement. Participants and parents consistently reported significant improvements in the girls’ ability to interact with others, whether confidently speaking with guests at social functions, giving motivational speeches at school, or expressing themselves clearly in public spaces. Such transformation in communication skills was accompanied by a notable rise in self-esteem, with many girls independently managing college responsibilities, traveling alone, and even advising family members, demonstrating a new level of maturity and autonomy.

The program also fostered enhanced decision-making capabilities. Girls began making informed choices about their education and careers, rather than passively accepting parental decisions. Parents observed that their daughters now ask thoughtful questions and show discernment in evaluating right from wrong, indicating increased critical thinking. This growing confidence translated into leadership, with girls taking active roles in school and community events and becoming visible representatives of their peer groups.

The ripple effects of the program extended to families and communities. Parents who were once reluctant to invest in girls’ education now support their aspirations for higher studies and careers. Families began involving daughters in household decisions, and some fathers reported becoming more engaged in their daughters’ futures. Girls not only advocated for themselves but also encouraged their peers to stay in school and pursue their goals.

“That is the one I mentioned—girls going out and leading life on their own, which I feel is a great achievement. No matter how great a personality someone may be, my daughter will interact with them and ask if they need any help. There were some army-related events in Bagalkote, and my daughter was invited to speak there. She also performed Bharatanatyam at the event.”
[Mother of the intervention area girl, 47 years]

“At every step... Initially, I was hesitant. I didn’t participate much in school or PUC, but once I entered my degree and received proper training, I started recognizing myself in public spaces. Until then, I would always stay in the background and had the mindset of ‘let the brighter ones go forward.’ Even the teachers used to call only the top students, so I thought, ‘It’s okay, let them go ahead—why me?’ I knew I had talent, but I would still hold back. Now, I have developed leadership qualities, people recognize me, and I make decisions on my own. Of course, we need our parents’ help, but in the end, it’s just us. How long will our parents be with us? Eventually, we have to manage on our own, so I make my own decisions. Even at home, Sphoorthi helped my family understand that we, too, have a presence—that we matter.” [Intervention area girl, 20 years]

5.2.10 Strengthened Family Bonds Through Improved Parent-Daughter Communication

This subtheme provides the narratives and reflections of both parents and adolescent girls on how the Sphoorthi Program contributed to a deeper, more open, and empathetic relationship

between parents—particularly fathers—and their daughters. Before participating in the program, many girls expressed feelings of fear, hesitation, and emotional distance in their interactions with their fathers. For instance, one girl shared that she would leave the room when her father entered, highlighting the communication gap that existed in many households. However, the structured interventions under the program, such as father-daughter dialogue sessions and joint parent meetings, facilitated greater emotional closeness and improved communication. Girls reported feeling more confident and safe sharing their thoughts, and fathers acknowledged becoming more approachable and understanding.

Parents also described learning how to respond to their children with greater patience and empathy. The program not only educated the girls but also involved parents directly, encouraging them to reflect on their roles and adapt their behaviors. One father mentioned that earlier he was unwilling to listen, but after the program, he became more open and receptive. Mothers noted that their daughters began to share what they learned during the meetings at home, contributing to a shared learning experience that further strengthened the family bond.

Importantly, the program reshaped the overall family dynamic by fostering mutual respect and even friendship between parents and daughters. Parents described their daughters as becoming more expressive, and some stated that their relationships had become more like friendships. While traditional boundaries still existed—such as girls preferring to share certain issues with their mothers—there was a noticeable shift toward greater openness across the family. These shifts reflect how the Sphoorthi Program went beyond individual growth, creating lasting changes in family relationships, gender dynamics, and the broader social environment.

“They are like friends with him (father) now as well. In the past, they didn’t speak much, but now they ask him what he wants and help out at home. They talk freely after the Sphoorthi program and often share whatever was discussed there.” [Mother of the intervention area girl, 47 years]

“Previously, before joining the program, there was hesitation. But after the program, when they taught us about father-daughter dialogues and conducted meetings, I was no longer afraid. I started sharing everything with my father.” [Intervention area girl, 21 years]

Success Stories

5.2.11 Success Stories of Stopping Child Marriage

A recurring narrative across multiple interviews highlights the significant role of the *Sphoorthi* program in empowering adolescent girls, families, and community members to prevent child marriages. In several instances, girls who participated in *Sphoorthi* took the initiative to report cases of impending child marriage, either by counseling the parents directly or by informing authorities using the child helpline. A participant described how the girl informed the program staff about early marriage plans at home, which led to home visits and counseling sessions by the program staff that successfully delayed marriage until the girl was 24–25 years old.

One father proudly stated that his daughter helped stop a child marriage in the neighborhood, affirming that it was “100 percent true” that the knowledge came from the program. Similarly, program staff narrated impactful stories, such as one where a girl’s marriage to her brother-in-law (mother’s brother) was halted after an exposure visit inspired her to prioritize education.

Parents also shared that societal attitudes are shifting, although not every girl is equally bold, but many understand the risks of early marriage, its health complications and loss of educational opportunities. Importantly, parents and other stakeholders observed a visible transformation in girls' self-confidence and decision-making.

“Now all the girls have courage... they are ready to face everything. When people like you come here and give information, the girls begin to understand and realize things—so there’s no problem. For example, there was a girl studying in high school who was actively involved in creating awareness against child marriage. Unfortunately, her parents wanted her to get married because her grandmother was seriously ill and wished to see her married before she passed away. But that girl remembered everything she was taught in school and refused to marry before the age of 18. Now, she is married.” [Community Organizer of the intervention area, 38 years, female]

“Yes, she did speak up 2–3 times. One of her batchmates was just 15 years old, and her parents were planning to get her married. Then my daughter and her friends called the helpline number. When the officials arrived, there was a fight, and only then did we find out that my daughter had made the call. She told others, ‘This is what we learned in the meetings of that program.’” [Mother of the intervention area girl, 50 years]

5.2.12 Success story: Promoting Education and Preventing School Dropouts

One of the parents proudly shared how his daughter intervened when a family in their village was about to discontinue a girl's education. She visited their home and convinced the parents to allow the girl to continue studying. In another case, a young girl recounted how she and her friends persuaded her friend's parents to postpone their daughter's marriage and allow her to continue her education. She also influenced her own relatives to let a girl pursue higher secondary education and even advised a prospective bride's family to ensure she completed her basic schooling before marriage.

Several role model girls described similar interventions. One participant helped re-enroll dropouts from neighboring villages with the support of schoolteachers. Another girl shared how she continued her studies after marriage despite opposition from in-laws and minimal support from her husband. She even set up a small business using a loan to support her education independently.

Girls also assisted their peers through collective actions. Some paid tuition fees for dropout girls, while others supported access to menstrual hygiene products, advocating for dignity and education simultaneously. Program staff highlighted the case of a girl from a village who, despite extreme poverty and family struggles, completed her degree with consistent support from the program. Her progress encouraged her sisters to continue their education as well.

Parents also played a role in this transformation. One father explained how he regularly visited homes of dropouts, emphasizing the long-term benefits of education and the role of mothers as the first teachers.

“Yes, I visited their houses and spoke to them about the importance of education—why they should study and what kind of knowledge they would gain. I told them that if they don’t study, they’ll be left with no option but to work in the fields. If someone doesn’t know how to read or write, how can they take up other kinds of jobs? That’s why they should at least complete their

10th grade or PUC. In the future, they can teach their own children. For example, if I have a son, I'll be able to teach him a few words. Mothers are the first teachers. If they don't know anything, how will they teach their children? When a mother teaches, children learn faster than when a teacher teaches them at school."[Father of the intervention area girl, 45 years]

"She used to repeatedly discontinue her studies because her father was an alcoholic, and the family often did not have enough to eat. There were five daughters, and their mother was the only earning member. They did not even have a proper house to live in. The girl was selected for the program, and she turned out to be very active. However, she was irregular in attending classes. So, we made regular visits to her house to encourage and support her. With additional support facilitated through KHPT, she gradually started attending classes more regularly". [Community Organizer of the Intervention Area, 38 years, Female]

5.2.13 Success stories: Resilience and Response to Gender Based Harassment

Instances of gender-based teasing and harassment continue to pose serious threats to the safety and well-being of adolescent girls. One powerful story shared by a program facilitator described a girl who, once active and enthusiastic in meetings, suddenly became withdrawn and silent. Upon closer observation and a personal conversation, it was revealed that she was being harassed by boys on her way to school and was even contemplating suicide. Timely intervention by the program staff, including emotional support and home visits, helped her regain her confidence. Her mother, an ASHA worker, played a critical role by confronting the parents of the boys involved. As a result, the harassment stopped, and the girl was able to continue her education—she is now pursuing her degree. Without this support, she may have dropped out after the 10th grade and suffered long-term emotional trauma.

Similarly, one adolescent girl shared her experience of public harassment by a male relative who pulled her dupatta in the middle of the road. Though terrified at the time, she found courage in her mother's support, and this enabled her to process the incident and grow stronger. She now reflects on how easily her life could have been derailed if she had fallen into the trap of silence or shame. Another girl narrated how she stood up for herself during an argument with a boy on a bus. While community members criticized her assertiveness, her mother's firm support made all the difference. These stories reflect how parental backing and self-confidence play a pivotal role in empowering girls to resist harassment and reclaim their agency.

"Yes, madam. There was a girl who used to be a role model. It seems that some boys were teasing her on her way to school. Suddenly, she became very quiet. She used to be very active in all the meetings, but we noticed a change—she had become unusually silent. We observed her behavior and personally met with her to ask what was wrong. That's when she shared that boys were teasing her on her way to school and that she was even contemplating suicide. Upon learning this, we reported the matter to the office. We also visited her home and counseled her, reassuring her that she was not at fault. We encouraged her to share her problem with her family and friends. If we hadn't identified her distress in time, she might have fallen into depression. I am truly happy that we were able to counsel her and help her regain a sense of normalcy". [Community organizer of the Intervention area, 38 years, female]

"Nothing, akka [interviewer]. They even say, "Look at how this girl raises her voice." But I don't care. No matter what I do, the community always has something to say or finds some way to

criticize me. When I go out alone, people point it out and tell my parents, “She’s a girl—how can you support her like this?” Even when I go out with my brother, people still talk, just in a different way. That’s just how our society is. That’s why I don’t bother about anyone’s opinions. I know I’m doing the right thing, and that’s enough for me”. [Intervention area girl, 22 years]

5.2.14 Continued Engagement – implementers’ testimony

The implementer shares a powerful story of continued engagement with a girl from Phase 1 of the Sphoorthi program. This girl, a Muslim student from a village, was once in a vulnerable situation due to domestic violence by her father, who was abusive and an alcoholic. The implementer took her in temporarily with official permission, facilitated counseling for the father, and helped the girl continue her education. The father’s behavior improved, and the girl is now actively involved in the program, conducting meetings and supporting ongoing efforts despite staff changes. This reflects the program’s long-term impact and community leadership development.

“Yes, madam... another example is from ABC a Muslim girl, conducts all the RG meetings. There is no CO in ####, so the CO works there. In #### conducts all the samvadhams and community meetings. She was selected when I was there; now the COs have changed, but she still supports them. When she was in 9th or 10th standard, her alcoholic father tried to strangle her mother. She was frightened and stayed at my house for a week. I had taken permission from the KHPT office and allowed her to stay with me. I also called her father for counseling, after which he stopped drinking and began working hard. Since then, he has not touched alcohol. The girl has completed her studies and is currently working with us”. [Field Coordinator from the intervention area, 34 years, Female]

5.3 ADOPTION

5.3.1 Capacity building, monitoring and supervision of the program

In this context, the subtheme highlights how training, regular reporting, and close supervision helped community organizers effectively adopt and deliver the intervention within the community. The community organizers were oriented to the program through training sessions conducted at a central training center in Koppal taluk. Initial trainings were held every alternate day in a week, later shifting to once every three days. The training primarily focused on life skills, contextual issues in Koppal, child rights, child protection, and child marriage. Before beginning sessions with adolescent girls, community organizers participated in mock sessions as part of their preparation. One of the implementers mentioned that the training was strict and that they were made to prepare in such a way that they should not see their modules in front of the girls and stammer while giving sessions.

Field coordinators played a key role in the supervision of the program. Community organizers reported about the program once every 15 days to the field coordinator, later shifting to once a month. Community organizers had monthly reporting, which included targets such as conducting two sessions per month or organizing events like Women’s Day in the villages for the follow-up of the programs’ field. Coordinators regularly visited the villages during the implementation of the program.

“Starting every alternate day in the week and later on after every 3 days... We had to complete the module... we had a ### sir who was very strict. We were made to prepare in such a way

that we couldn't see the module in front of the girls, and we were not allowed to stammer.”
[Community Organizer of the Intervention area, 38 years, female]

“We had targets for sessions, like monthly two sessions etc... some days we were supposed to celebrate like women's day in the villages, like this we had targets. As per their suggestions we used to plan...” [Community Organizer of the Intervention area, 38 years, female]

5.3.2 Girls as role models for health, education, and empowerment

This subtheme shows how adolescent girls who participated in the program became role models by promoting health, continuing education, and inspiring others to delay early marriage and pursue personal growth. A few mothers and girls shared that the girls who participated in the program became a source of inspiration for other girls in their communities, especially in areas related to health, education, and delaying early marriage. One adolescent girl from the intervention area was seen as a role model for maintaining good health and having a normal Hemoglobin level. She was even interviewed about her daily eating habits so that other girls could follow her example and adopt healthier lifestyles. Other participants supported their peers by guiding them in educational choices, especially in helping them decide what courses to pursue after completing their 10th standard. This guidance helped more girls continue their education with confidence. One girl proudly shared how she was recognized by her entire village when she was elected as a district-level adolescent representative.

“I was kinda highlighted as I had good blood [normal Hb%]. I was a role model for others in relation to health. Some people had come like you [interviewers] and asked about my daily food habits.” [Intervention area girl 6, 21 years]

“Yes, madam... Once a week and once a month in Koppal at a Mata. Every 15 days, they organized programs that included other girls, helping us get to know each other. They also conducted a large event, which was always very nice....I was elected as the District Representative, so all the girls from Koppal Taluk in the Sphoorthi program know me, even though I may not know everyone personally. I might recognize them by face, but not by name. I feel very happy when they recognize me.” [Intervention area girl 2, 22 years]

5.3.3 Support at the community level for program implementation

The subtheme highlights the strong community support, including space, resources, and local leadership, that enabled the smooth implementation of training sessions and programs for adolescent girls. The participant girls were given training by the community organizers in the spaces of Panchayat's old building, houses, and in school classrooms, on the weekends to conduct various sessions and programs such as Samvadha. The local community gave a lot of support to help make this possible. The School Development and Monitoring Committee (SDMC) members and Gram panchayat members played an important role by giving permission to use the spaces and helping to arrange food and refreshments for the girls and staff during the sessions. While material resources for the program, such as the necessary items for conducting sessions, were largely provided by the program team.

“Madam, for every meeting we were doing advocacy at Panchayat, we used to explain to them that we would be conducting meetings for adolescent girls, and we needed a place to conduct this. We were doing advocacy at Panchayat... during that time... where they had old buildings in panchayats, they provided us. In some villages, we used to request parents, but by then parents became close and rapport was built.. and we used to say girls only will be there; can we do the

program... they used to agree.. some villages we got space in the panchayats.” [Field Coordinator from the intervention area, 34 years, Female]

“Local funders mean... After some time, I had to manage Hitnal because the COs had left, and they did not hire a new one. So, those who were already there had to continue the work. An SDMC member used to help us every time we conducted any kind of program, like Samvadha, in schools. We usually organized these programs on school holidays, mostly on Saturdays and Sundays. He would also send someone to help with cooking.” [Community Organizer of the Intervention area, 38 years, female]

5.4 IMPLEMENTATION

5.4.1 Program Components

The subtheme program components highlight the Sphoorthi program’s key components aimed at improving the overall well-being of adolescent girls, with a strong focus on education, nutrition, and menstrual hygiene.

5.4.2 Education

The education component of the Sphoorthi program helped shift community perceptions on girls’ education. Previously, girls’ education was often deprioritized after the 10th standard, but through repeated conversations, awareness increased. Many girls were motivated to pursue higher education, with some even completing degrees and later contributing back to the program as active supporters in Phase 2. From the girls’ perspective, Sphoorthi’s engagement with parents led to a positive shift in attitudes. After the program sessions, parents, especially fathers, began encouraging their daughters to study further, recognizing their potential and supporting their education.

“Before, the mentality was that they wanted to make their sons study more, but for girls, they used to let her study till 10th standard and discontinue her studies. The girls were not given importance, but once the girls participated in the samvadhas and other meetings, they complete their education till degree. There are many examples of such incident...here there were 2 girls who completed B.Com and are currently working in ### NGO and those girls participate and support in phase 2 Sphoorthi program” [Community Organizer of the Intervention area, 38 years, female]

Since Sphoorthi conducted programs for parents, my parents started saying, “It’s okay, let her study,” and even encouraged me to continue my education. After attending the program, my father began believing that girls can study and achieve something, so he supported my education. [Intervention area girl, 21 years]

5.4.3 Menstrual Hygiene

In the intervention area, the Sphoorthi program played a key role in educating girls about menstrual health, often being the only initiative dedicated to adolescent girls on this topic as mentioned by the girls. Schools organized awareness sessions during sanitary pad distribution. While traditional taboos like staying separate or avoiding cooking during menstruation were not widely reported, the norm of restricting menstruating women from entering temples was commonly followed. Girls

also shared the difficulty of maintaining hygiene during farm work due to lack of access to soap and clean facilities. Importantly, the program encouraged open communication, with many girls reporting they now freely discuss menstruation and personal issues at home.

Disposal challenges significantly affect the sustained use of sanitary pads in the community. While the Sphoorthi program improved menstrual hygiene awareness, issues like improper disposal practices and lack of waste management discouraged continued usage of pads. Some girls reverted to using cloth due to cultural beliefs, practical concerns, and environmental discomfort. A few girls in the intervention area also mentioned the usage and hygienic maintenance of cloths they used.

“Yes, they have conducted a program and they have shown videos on how to maintain hygiene during menstruation...With the knowledge given by Sphoorthi, I used to share the information with the peer girls...” [Intervention area girl, 22 years]

We were advised to dispose of it properly and to put it in the dust bins. Still, we can see people putting in their surroundings, causing discomfort. Looking at these, I am using clothes during the period, and I feel it is better. There is no big issue in these, like there is a disposing problem with pads. My grandmother used to say that if we do not dispose of pads properly after using, then if some insects contaminate them, it can cause harm to that girl. So, they do not allow us to use pads. We clean the clothes after every use, wash them with Dettol, and maintain hygiene. As we do not have a proper space to dispose of, we do not like to use it. [Intervention area girl, 21 years]

5.4.4 Nutrition

The Sphoorthi program effectively addressed the nutrition component by creating awareness and distributing mixed cereal nutritional powder to adolescent girls. This powder, often processed into unde (round balls, as mentioned by a parent of participating girl) or prepared as a warm drink with water and jaggery, was not only consumed by the girls but also shared with their families, increasing household-level awareness on nutrition. Outreach efforts extended to local weekly markets, where implementers set up stalls, demonstrated how to prepare the drink, and offered tastings to engage the community. Initially, there was hesitation among the girls, but as they saw others including their parents, enjoying and benefiting from it. The program also focused on educating girls about vitamins and proteins in everyday food, encouraging healthier dietary choices and better understanding of nutrition.

“It was very useful...In our village, we used to have a weekly market on Sundays, during that time we used to conduct camps and gather girls to give them awareness regarding nutritional food. Not only did we give them awareness, we also gave them the nutritional drink...” [Intervention area girl, 22 years]

“During the outreach program, we explained to them how to make food by preparing ganji for them, and we also used to drink along with them. Initially, the girls did not drink; they used to hesitate from drinking, but due to the outreach program, we felt like their house was our house and used to prepare ganji for them. We used to record that video and show it to others and convince the girls making sure their HB level was normal” [Community Organizer of the intervention area, 38 years, female]

5.4.5 Enablers

The sub-theme “Enablers” highlights the key factors and strategies that facilitated the effective implementation of the Sphoorthi program. This includes innovative community engagement approaches, support from local governance structures, and adaptive methods used by implementers to encourage participation from adolescents and their families.

The implementers identified several enablers that helped overcome the initial challenge of low participation in the program. Regular monthly review meetings were held where field staff shared difficulties and received practical suggestions from their superiors, such as increasing home visits and engaging girls through informal and interest-based activities like dance, music, and games instead of formal sessions. One innovative approach involved personifying the program as a fictional adolescent girl named “Sphoorthi” who wrote encouraging letters, which created curiosity and emotional connection among participants. Strategic scheduling also played a role, with parents’ meetings held in the evenings and girls’ sessions conducted in the afternoon. Outreach efforts were intensified by involving friends and family to encourage attendance, and panchayat members were supportive, often helping convince parents and mobilize girls. Having a defined target group and not attempting to include all girls at once in the first phase also allowed for focused intervention and better engagement.

“Our superiors used to give some suggestions, like doing frequent home visits. making girls understand the importance... if some new person goes and asks for a meeting, they will not come... You sit with those kids and spend some time.... Do not do it as a meeting. ask them to do what they like, dancing, singing, playing, etc. We did the same, and girls started coming, and later we started sessions... before that, we made an initiative where we imagined “sphoorthi” as one girl. we created a story for this girl, like sphoorthi is a village adolescent girl. We used to write letters in the name of Sphoorhti. They used to be surprised as they thought Sphoorthi was a girl of their age group. She was very active and well-liked, as those letters used to contain suggestions.” [Field Coordinator of the Intervention area, 34 years, female]

“During parent meetings or community Samvadas, we would bring up the topic and discuss it, saying, these are the challenges we have been facing, and we require everyone’s support. After listening to this, the panchayat ward members tried to make the parents understand. When asked what other ways could be used to get the girls to the program, the ward members would call the girls to the program since the villagers would listen to them.” [Community Organizer of the intervention area, 38 years, female]

5.4.6 Challenges

This sub-theme highlights the multifaceted challenges encountered during the implementation of the Sphoorthi program, particularly those rooted in social and caste dynamics. Implementers faced barriers such as caste-based exclusion, community resistance, and entrenched discriminatory norms. In non-intervention areas, participants reported additional challenges like lack of support for continuing education, inadequate access to nutritious food, and socio-cultural issues. Broader structural barriers, such as the impact of COVID-19 and deep-rooted social inequalities, further compounded these difficulties, underscoring the need for context-sensitive and inclusive program strategies.

5.4.7 Social and caste-based challenges during program implementation

Implementers faced a range of challenges while delivering the Sphoorthi program, with caste-based discrimination emerging as a significant barrier to inclusive participation. In several villages, Scheduled Caste (SC) girls were initially barred from accessing common program venues such as temples and community halls, limiting their ability to engage fully with the initiative. This exclusion not only reflected deep-seated social hierarchies but also made it difficult for implementers to ensure equitable outreach. Resistance was also observed from parents and adolescents, many of whom were sceptical about the program or feared community backlash. These hesitations were especially pronounced in areas where incidents such as the elopement of a girl led to heightened restrictions and moral policing, further reducing girls' mobility and participation. In such contexts, implementers had to invest significant time and effort in community sensitization, trust-building, and personalized engagement to overcome resistance.

Despite these obstacles, there were also encouraging developments. In certain areas, the program was positively received, with community members, including parents, teachers, and local leaders, recognizing the long-term benefits of empowering adolescent girls. This led to more collective participation and support. Nonetheless, the overall experience points to the critical need for culturally sensitive, locally tailored implementation strategies that actively address social barriers such as caste and gender norms to ensure the program's success and sustainability.

"We faced challenges related to caste. When we organized programs, we were expected to include all the girls from the village. These programs were usually held in temples, community halls, and other public spaces. However, SC girls were not allowed in these places." [Field Coordinator of the Intervention area, 34 years, female]

"Since we had selected many girls from the SC colony, other girls would not join, and when SC girls were called for a session, they would hesitate, thinking they would be made to sit outside and not be allowed to participate. Their parents would also scold them....." [Community Organizer of the intervention area, 38 years, female]

5.4.8 Challenges among participants in the non-intervention area

For many girls in the non-intervention area, this translated into early school dropouts and increased domestic and agricultural responsibilities. Early marriage was also prevalent, frequently seen as a coping strategy in response to financial strain. Transportation barriers, such as inadequate bus services, further compounded access issues. The perceived limited return on investing in girls' education due to entrenched gender norms and the expectation that daughters would eventually marry and leave also discouraged families from supporting their daughters' schooling.

Some adolescent girls highlighted how these socio-cultural and economic factors collectively denied them the opportunity to pursue education and personal growth, emphasizing the need for awareness-building among parents. Also, adolescent girls are not provided with age-appropriate nutrition during their developmental years and are expected to eat whatever is available before heading to physically demanding fieldwork.

"There is a lot of poverty here. Most of them don't have enough education, so they will not have the knowledge. Since there is a lot of poverty here, people get their daughters married early. That is the condition here. We have to work as daily wage worker to lead our lives; a few of

them have their land and irrigation, and that's how they live. If there is good rain, then through irrigation, we can get success, but if it does not rain, then through dry land farming seeds....." [Non-Intervention area father, 54 years]

##NIG1## In terms of health, the girls would be young, and they are made to work things that they cannot handle..... Children, during their developmental stage, should be given appropriate food, but here it is not like that; they should eat what is provided and go to the field. They are not given work according to their age here, and their education is spoiled. [Non-Intervention area girl, 23 years]

5.4.9 Social issues in the non-intervention area

The conversation with a few implementers reflects a positive social shift, indicating that the Devadasi system, once prevalent in the community, has largely disappeared. The girl, reportedly experiencing health issues, was believed to be possessed by a deity, which led the family to designate her as a Devadasi. In another area, it was noted that while around 15 women had become Devadasis in the past, the practice has ceased since the early 1990s. Only two women from that system remain today, and their children are now being educated, signifying progress and greater awareness in the community.

It was there before. Now it is not there... after 92 they are not there. There were 15 women who had become Devdasis in the past. They all go to school... only two Devdasis are there now.. all others have died... Now, no one is becoming a Devadasi." [Non-Intervention area Stakeholder, 41 years]

A few stakeholders in the discussion mentioned alcohol addiction as a major concern in the village, particularly among young men. It led to domestic violence, financial misuse, and disruption of household stability. Despite community efforts, including the temporary closure of liquor shops through a padayatra (efforts by religious leaders), the issue persists due to poor enforcement and bribery.

"This is the major problem—they harass women in the household. They sell all the rice and jowar in the house to buy alcohol. They work for a few days under the employment guarantee scheme, and once the money is credited to their account, they take it and go drinking. If their wives receive the money, they beat them and snatch it away. This is how they behave... Alcohol is the main problem in our village." [Non-intervention area stakeholder, 50 years, male]

In the non-intervention area, COVID-19 significantly disrupted girls' education, leading to increased school dropouts. Participants reported that a few girls lost interest in studies, spending more time on mobile games and social media. The period also saw teasing and ragging of girls, further discouraging school attendance. However, none of the participants reported instances of child marriage during this time.

Since the girls were at home, they stopped concentrating on their studies and started playing games and watching reels. Hence, it has a significant impact during the time of studies. [Non-intervention area mother, 42 years, female]

5.5 MAINTENANCE

This refers to the long-term sustainability of a program at both the individual and organizational levels. For Sphoorthi, stakeholders emphasized the need for structured continuation and expansion to new areas. Integration with other departments and programs can enhance long-term impact. Involving parents ensures sustained support beyond the program setting. Active participation of girls and staff, along with recognition of program alumni, can help maintain engagement and motivation over time.

5.5.1 Suggestions on Collaboration with Other Departments

This subtheme reflects a strong consensus among various stakeholders such as implementers, parents, community members, and government partners. This collaboration with other departments and organizations is essential for the effectiveness and sustainability of the Sphoorthi program. Participants emphasized that government departments, local governance bodies (Gram Panchayats), ASHA workers, and especially ChildLine should be actively involved to address issues like child marriage, school dropouts, and adolescent health more comprehensively. One implementer noted that where community-level officials like PDOs are involved, the support is significant, such as in sharing dropout lists to facilitating follow-ups. Another stakeholder underlined that while the government should adopt such programs, NGOs play a crucial supporting role, especially in rural areas where staffing and administrative burdens are high.

Additionally, the importance of departmental convergence was highlighted, particularly by a UNICEF consultant who stressed integrating the program within existing structures such as the Mission Vatsalya, Meena Clubs, Child Rights Clubs, and various protection committees at village, taluk, and district levels. This approach, they argued, would institutionalize adolescent empowerment and make it part of the national agenda. Further, they suggested that adolescents should be equipped with knowledge about accessing basic services (e.g., ID cards, Aadhaar updates, ration cards), which requires coordination across departments. Overall, the respondents advocate for a multi-stakeholder, convergence-based model that brings together NGOs, Civil Society Organizations (CSOs), and various government actors to deliver a holistic and sustainable adolescent development program.

“Yes, madam, there is a ChildLine, and they should be involved in the program. However, they are not very active at the village level. If they were involved with us, most child marriages could be prevented—there would be no need to even talk about child marriage.” [Field Coordinator of the Intervention area, 34 years, female]

Yes, community members should be involved. Since Sphoorthi has been active for the past nine years in some communities, the PDO and others provide significant support. However, in a few villages, the level of support is still lacking. In those villages where we do receive support, they share lists of school dropouts and invite us for follow-up activities. Although I joined recently, we highlighted this issue during the meeting, and during visits to the homes of dropout children, community members contacted us to assist in addressing the situation [Field Coordinator of the Intervention area, 34 years, female]

5.5.2 Suggestions for Continuation of the Program

Participants across various groups—adolescent girls, parents, and program implementers—strongly emphasized the need for the continuation and expansion of the Sphoorthi program. Many felt that the program’s current duration of three years is insufficient, suggesting that it should extend beyond school years, ideally up to pre-university education, to ensure lasting impact. Several respondents noted that the content of the life skills sessions needs to evolve with changing times, highlighting that the needs of the current generation of girls differ from those of earlier cohorts. One girl suggested that the effectiveness of the program could be enhanced by incorporating competitions, such as written exams, to encourage engagement.

Follow-up and sustained engagement were seen as important for reinforcing the changes brought about in the girls, with recommendations for ongoing mentorship, livelihood-related training, and alumni engagement. Implementers also voiced concerns about the logistical challenges of managing large groups with limited personnel, suggesting that more structured support and division of responsibilities would enhance program effectiveness. Additionally, there was concern that only a limited number of girls were being reached, with calls for more inclusive implementation and broader outreach. Some parents and SHG members expressed a willingness to support or host the program locally, stressing that meaningful content and minimal resources could empower communities to take ownership. Overall, while the program was widely appreciated for its impact, participants agreed that for it to be truly transformative, it must be continuous, adaptable, and inclusive.

“Now the Sphoorthi program has stopped, and nobody asks about it. It shouldn’t be like this—the groups should be continued. There should be a separate office and someone responsible for following up with the girls. The program should not stop with just a few girls; all other girls should be included as well.” (Father of the intervention area girl, 47 years)

“Phase 2 of the girls’ program is different from Phase 1. The life skills sessions in Phase 1 were suitable for girls ten years ago, but girls have changed now, and their needs are different. The life skills sessions should be updated and tailored to meet the needs of the current generation.” [Field Coordinator of the Intervention area, 34 years, female]

5.5.3 Enhancing Sphoorthi through Integration and Holistic Development

The participant highlighted that while gender equality and life skills are core strengths of the Sphoorthi program, its effectiveness could be significantly amplified through better integration with existing government schemes. There is a noticeable policy and programmatic gap for adolescents aged 15–18, as most government interventions target those below 14 under the Right to Education (RTE) or those above 18 through various skill development schemes. The Sphoorthi program currently fills this critical void, but further impact can be achieved by aligning it with initiatives like the National Rural Livelihood Mission (NRLM) and Unnati. The consultant emphasized four key recommendations: first, linking these schemes to Sphoorthi groups to ensure sustained learning and skill-building; second, increasing focus on child protection by educating girls on issues like good and bad touch; third, disseminating information on social security schemes to the families of Sphoorthi girls; and fourth, introducing community protection mechanisms such as Women and Children Protection Centre (WCPC) and the child helpline 1098, which are currently underutilized. They also pointed out the need for a balanced narrative around gender, recognizing that not

all men exploit, and extreme views on child rights can be counterproductive. To ensure real empowerment, career guidance and exposure to vocational options like horticulture and tailoring should be included alongside formal education. While Sphoorthi has excelled in advocacy and has been successful in stopping many child marriages, the participant stressed the importance of preparing girls for life after education, including marriage and potential migration. For true sustainability, empowerment must be linked to social security and livelihood, contributing to the holistic development of not just adolescent girls but also their families and communities, in alignment with the Sustainable Development Goals (SDGs).

“In this program, gender and life skills are very strong components. However, to strengthen them further, there are hundreds—if not thousands—of schemes available. If the connection between these schemes is made stronger, the impact will be remarkable. Currently, education is mandated through the Right to Education (RTE) Act only up to age 14, and there are skill-based programs after age 18. But the 15–18 age group remains untouched—no department or law focuses on them, except in the context of exploitation. This is where KHPT plays a role. There are many schemes like NLRHM, life skills programs, and Unnati that should be connected to the Sphoorthi groups. These girls speak very well, but they still need to learn essential skills”. [Consultant from the intervention area, 45 years, male]

5.5.4 Need for Parental Involvement and Awareness in the Sphoorthi Program

A recurring suggestion across participants was the importance of involving parents more actively in the Sphoorthi program. Several girls mentioned that if parental participation had been made compulsory or if parents were better informed, they might have encouraged their daughters to join or supported them more. Some noted that limited parental involvement in the earlier phase hindered their participation. Others stressed that increased parental meetings and efforts to convince parents, especially in the context of social fears around girls eloping, are essential for the success of such initiatives.

The implementers and mothers echoed this, stating that meaningful behavioral change among children often follows a change in parental attitudes. Some suggested including activities specifically for parents or conducting awareness drives before the program starts in new areas to ensure parental buy-in. There was consensus that parental education and engagement are essential for ensuring sustained impact, particularly in rural areas where cultural resistance and lack of awareness may act as barriers. Participants emphasized that transforming both girls and their families together would lead to more holistic and long-lasting change.

“If the Sphoorthi program reaches all girls effectively, it will have a positive impact on them. More importantly, the program should also reach the parents, because change from only one side is not enough—it should happen from both sides. Now that there is a program for boys as well, they too should receive proper training. When change happens from three sides—girls, boys, and parents—it creates a triangular foundation for broader transformation.” [Intervention area girl, 20 years]

“It’s better as it is, but they should focus on convincing the parents. In this generation, parents are often afraid to send their girls to programs due to concerns about girls falling in love and eloping. This is one of the main reasons why it’s important to engage parents. While there are now more peer meetings, I believe there should be an increase in meetings with parents as well.”

During our time, there weren't many parent meetings, but now I feel there should be more of them. Parents often hesitate to send their daughters because of a lack of family support. I believe it's more important to educate the parents than the girls." [Intervention area girl, 19 years]

5.5.5 Suggestions for Greater Involvement of Girls and Staff in the Sphoorthi Program

The Sphoorthi program has demonstrated value in empowering adolescent girls, but its impact is limited by inconsistent participation and implementation challenges. Many girls attend sessions irregularly, often lacking a strong sense of connection to the program's goals. This indicates a need for more engaging and personally relevant content that encourages consistent involvement. Active participation has been shown to lead to greater awareness, personal growth, and motivation among girls, especially in Phase 2, which includes exposure visits and livelihood sessions.

Program implementers face challenges in managing large numbers of participants, which affects the quality of engagement and follow-up. Staff members have suggested restructuring the approach by forming smaller, focused groups and assigning specific groups to individual staff for better support. Also, community members have expressed the need for the program to be more inclusive, continuous, and supported by proper infrastructure, such as a dedicated office space. Overall, improving staff capacity, enhancing program relevance, and fostering greater community involvement are key to increasing the program's effectiveness.

"Yes, in Phase 1, the number of girls in the program had reduced by the end. But now, I have seen with my own eyes that the girls are very active. Girls should understand what life is and be able to lead their lives if any tough situation arises." [Intervention area girl, 22 years]

"Now the Sphoorthi program has stopped. Nobody asks about it. It shouldn't be like this—the groups should continue. There should be a separate office, and someone should be responsible for following up with the girls. The program shouldn't stop with just a few girls; all other girls should be included as well." [Father of the intervention area girl, 46 years]

5.5.6 Suggestion— Preference to Sphoorthi Participated Girls

A parent expressed concern that the Sphoorthi program consistently favors the same few girls for special opportunities such as speaking at events or attending external programs (e.g., in Belagavi). They emphasized that all girls are equally smart and should be given equal opportunities to participate and learn. Continuously selecting the same girls leads to disappointment among others and makes them feel excluded. The parent recommended that organizers rotate opportunities and treat all girls equally deserving to ensure fairness and inclusivity in the program.

"Yes, madam, at least once or twice a year, they call some girls on stage and ask them to speak about their journey — it would have been useful. The other girls feel bad that they are not considered. They always choose the same girls to attend functions in Belagavi and other places for discussions and programs. They could have included our children, too. They shouldn't support only the same girls all the time. All parents want their children to be part of the program. But they keep giving preference to the same girl again and again. For example, I went to Belagavi the other day, and they had selected the same girl three times for the program. They should give equal opportunities to all the girls and not rely on the same ones every time. These same girls are chosen for all the discussions with ministers and others. They should treat all the girls as their own children." [Father of the intervention area girl, 47 years]

5.5.7 Suggestions to scale up the Sphoorthi program to other places

Participants across various stakeholder groups strongly recommended expanding the Sphoorthi program to other villages, taluks, and districts. Many noted that the program had a positive impact on adolescent girls, enhancing their confidence, life skills, awareness of societal issues, and ability to navigate challenges such as child marriage, education discontinuation, and gender roles.

Parents and community members emphasized that all girls should benefit, not just those in the 51 pilot villages. They reported that girls from non-participating villages often asked why the program wasn't available to them. Adolescents who experienced the program shared how it helped them gain independence, communicate better with parents, and understand societal expectations.

Implementers and stakeholders pointed out that rural areas, where access to opportunities is limited, would especially benefit from such initiatives. A few also stressed the need to include parents and boys in future phases to foster holistic societal change. Overall, there was a clear consensus that Sphoorthi should not only be continued but also scaled up, with suggestions to ensure inclusivity, sustainability, and community engagement in the process.

“This program was useful here, so the same model can be implemented in other places, particularly in rural areas where fewer families reside. Urban people already have access to other facilities.” [Implementer of the intervention area, 55 years, male]

“Yes, I recommend it. Programs like this need to be conducted, and people’s awareness should increase. Girls should come out, and all parents should be understanding. There was one sir who asked for our suggestions, and we told him to organize similar programs in other villages. The program was successful here, and it brought change. It is needed in other places as well. Take these girls and parents to other villages and implement the program there too.” (Mother of the intervention area girl, 45 years)

From the implementer’s perspective, sustaining the program’s impact beyond its active duration is a key concern. They emphasize the need for ongoing handholding support and strategies to ensure the program’s benefits reach younger girls and future cohorts. The challenge lies in the transitional nature of adolescence. Girls age out, get married, and move away, making it important to develop mechanisms that embed the program’s values into the community for long-term continuity.

Key Similarities and Differences in Intervention and Non-Intervention Areas

This section compares the experiences, behaviors, and outcomes of participants across intervention and non-intervention regions. It highlights both shared patterns and distinct differences shaped by the presence or absence of the Sphoorthi program.

Table 27: Key Similarities and Differences in Intervention and Non-Intervention Areas

Components	Similarities	Differences
Awareness	Girls' education is an important component in both intervention and non-intervention areas. Despite the absence of comprehensive programs like Sphoorthi, a positive shift toward community-driven awareness and growing recognition of girls' educational needs was observed.	Adolescent girls and their mothers reported limited exposure to structured empowerment or awareness programs in the non-intervention area, along with occasional awareness events conducted through government initiatives. Whereas, due to the Sphoorthi program, the intervention area population had more regular exposure to multiple awareness programs and life skills sessions.
Child marriage	Parents and girls in both areas spoke about opposing child marriage during the discussions.	While there was general opposition to child marriage in both areas, girls in the non-intervention area reported a lower average age at marriage. In contrast, girls from the intervention area shared instances where they actively intervened to prevent child marriages.
Education	Girls could easily understand that girls should complete their schooling to ensure an improved life and career.	In the non-intervention area, girls were relatively unclear about the way forward in seeking their education. However, the Sphoorthi girls completed their schooling even during the pandemic and turned out to be role models.
Nutrition	Parents and girls in both areas were aware of nutritious food and its role in health.	In the non-intervention area, awareness about nutritious food primarily came from individual education, schooling, or family knowledge, rather than through structured programs. In contrast, girls in the intervention area were not only aware of the importance of nutrition but also influenced their family members to adopt healthier eating practices. Despite this awareness, many families in the non-intervention area reported being unable to consistently provide nutritious meals due to financial constraints.

Menstrual Hygiene	No severe menstrual taboos were reported; common cultural restrictions persisted in both areas. These included not visiting temples, avoiding religious functions, and refraining from consuming tamarind-related products or touching certain household items during menstruation.	A notable difference in the non-intervention area was that menstrual health awareness was primarily limited to information provided in schools, with inputs from ASHA workers and Anganwadi teachers. Participants highlighted the absence of a structured program and expressed the need for a dedicated initiative focusing on menstrual health. However, in the intervention areas Sphoorthi program enlightened girls on menstrual health.
Economic stability	Girls from intervention and non-intervention areas expressed a desire to work, earn independently, and support their families financially.	In the intervention area, several girls were independently working or enrolled in vocational and professional courses, reflecting both personal ambition and program influence. Parents expressed support for their daughters' employment, like their sons. In contrast, girls from non-intervention areas were largely not working and remained dependent on their parents/husbands. Parental attitudes in these areas were more conservative, often prioritizing early marriage over career opportunities.
Decision making	There were restrictions in both areas for a few girls to go to different places to get educated or work.	Girls from the intervention area were involved in decision-making in the family. They could decide on their own regarding their education, marriage, career, etc. Parents also gave importance to their daughters at home. Whereas in the non-intervention area, parents used to decide the education, marriage, and career.
Self-confidence	A gradual shift in girls' confidence was observed in both intervention and non-intervention areas. This change was influenced by evolving societal attitudes and increased exposure to education and peer support.	The Sphoorthi program enhanced girls' knowledge and skills, leading to increased self-confidence, communication, and leadership, with visible changes noted by parents and stakeholders.

PART 3: INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS BY USING THE RE-AIM FRAMEWORK

This section synthesizes findings from both quantitative and qualitative data using the RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance). It provides a comprehensive understanding of the Sphoorthi program's impact and sustainability across multiple dimensions (Table no.28)

Table 28: RE-AIM Framework with Quantitative and Qualitative Findings

RE-AIM Dimension	Definition	Quantitative Findings	Integration of the findings
Reach	Proportion and	<ul style="list-style-type: none"> - Opinion on the importance of the Sphoorthi program in continuing education- 84.9% . Activities attended: - Life skill sessions - 71.2%. - Follow up for school continuation - 77.5%. - Samvadha with father –23%. - Samvadha with boys – 20.6%. - Samvadha with community leaders –11.1%. 	<ul style="list-style-type: none"> - Interviewees felt that the program was beneficial for continuing education. -Most of them were aware of the activities they were involved in the program. -Inclusion of marginalized communities and overcoming social barriers. - Active involvement of parents and daughters to improve the parent-daughter relationship.

<p>Effectiveness</p>	<p>Impact of the program on important outcomes (behavioral, health, social), including any negative effects.</p>	<p>In the intervention group</p> <ul style="list-style-type: none"> - Lower school dropout rates compared to the non-intervention groups (52.4 % vs.71.6 %). -Higher proportion of graduates (40.4% vs. 24.1%). -Lower proportion of marriages before 18 years old (6.4% vs 17.2%). -Higher median age of marriage and preferred marriage age. - Greater openness in discussing marriage age with parents. (63.7% vs. 44.7%). - Dietary patterns were largely similar. - Negotiation on continuing education (32.7% vs. 15.8%). - High self-esteem (84% vs 77.60%) and self-efficacy (58.6% vs. 51%). - Higher decision-making autonomy. (91.5% vs. 87.7%) - Slightly higher proportion of strong parent-daughter relationship. (49.20% vs. 45.30%) 	<ul style="list-style-type: none"> - The participants quoted that the program empowers them to resist early marriage and continue their education. -The program encouraged healthy nutritional habits among girls and families. -A few participants shared that they successfully negotiated with their own families and, in some cases, with friends' families to help others continue their education. - Participants observe improvements in confidence, self-esteem, and courage to travel alone, manage responsibilities independently. - The participating girls were actively involved in household decision-making, as well as in their education and careers. - Program strengthened parent-daughter relationships and reduced fear, hesitation, and emotional distance in girls.
<p>Adoption</p>	<p>Proportion and representativeness of settings/agents (schools, families, communities) that adopt the intervention.</p>	<p>-In the intervention group,</p> <ul style="list-style-type: none"> 88.1% of the girls gained and shared knowledge on the consequences of early marriage, 79.2% on healthy food habits and nutrition, and 74.4% on the benefits of education and higher studies. - 51.8% participated in leadership camps, and 32.2% of parents attended meetings. 	<ul style="list-style-type: none"> - Participating girls became influencers/Role Models within their communities, promoting health, education, and delayed marriage among peers. -Active involvement from parents and local leaders boosted program credibility, indicating community support. -Implementer Commitment: Staff showed strong ownership and motivation, as well as adequate supervision and monitoring.

Implementation	Consistency and quality of program delivery, including adaptations and fidelity.	-	<p>-Support from panchayat members, friends, and family to increase participation.</p> <p>-Implementers' Challenges: Caste-based exclusion and community resistance.</p> <p>-Increased duration for program implementation to gain trust, as there was resistance from parents.</p>
Maintenance	Sustainability of outcomes and integration of the program into routine practice.	<p>- More comfort in discussing puberty and growth body changes with father (42.9% vs. 26.6%).</p> <p>-More comfort in discussing menstrual health: (38.7% vs. 29.3%).</p> <p>- High self-esteem (84% vs 77.60%) and self-efficacy (58.6% vs. 51%).</p> <p>- Higher decision-making autonomy (91.5% vs. 87.7%).</p> <p>-Slightly higher proportion of strong parent-daughter relationship. (49.20% vs. 45.30%)</p>	<p>- Continued willingness to discuss sensitive topics with family, boosted self-confidence, and courage will have a positive impact on the girls' lives.</p> <p>-Integrate Sphoorthi with existing platforms like Mission Vatsalya, Meena Clubs, and Child Rights Committees.</p> <p>-Stakeholders highlighted to strengthen collaboration with departments, Gram Panchayats, ASHA workers, and ChildLine.</p> <p>-Implementers and beneficiaries suggested extending the program duration beyond three years and including pre-university education.</p> <p>-Need for improved staff support and task distribution to manage large groups effectively.</p> <p>-Increase parental involvement through regular meetings and awareness efforts.</p>

Reach:

In the intervention area (Koppal block), 84.9% of girls who participated in the evaluation study reported that the Sphoorthi program was beneficial and supported their continued education. Many girls recalled outdoor activities and exposure visits as motivational and engaging experiences that sustained their interest in the program. Additionally, 51.8% of the participants stated they had taken part in communication and leadership development camps, and over 70% attended life skill sessions and follow-ups related to school continuation. Consistent engagement through Samvadhas and interactive sessions helped both girls and their parents gain a clearer understanding of the program's objectives and benefits. Quantitative data also showed that around 20% of girls recalled Samvadha activities with fathers and boys, while 11.1% reported about interaction with community leaders. These interactions helped build trust and fostered greater parental support.

Most of the interviewed girls and parents could recall their participation in Sphoorthi and the specific activities they had been involved in.

Effectiveness:

Before Sphoorthi, most girls discontinued education after the 10th grade due to limited access to facilities and prevailing social barriers. With the support of the program, many began pursuing higher education, including BA, MSW, and technical courses (9.4% of participants in the intervention area) by overcoming challenges like long travel distances, early marriage pressures, and lack of family support. The positive impact is reflected quantitatively in lower school dropout rates (52.4% vs. 71.6%) and higher graduation attainment (40.4% vs. 24.1%) in the intervention area compared to the non-intervention area.

Previously, girls were expected to marry soon after lower secondary school. With Sphoorthi's influence, many parents began supporting delayed marriage and higher education. Participants also started openly discussing the appropriate marriage age (63.7% vs 40.7%) with their families. Quantitative findings reflect this shift, showing a higher median and preferred age of marriage in the intervention group.

The program encouraged healthier eating habits, with families adding nutritious foods and girls challenging norms like eating last, advocating for equal meals. Mothers became more involved in preparing balanced diets. Though community change was gradual, many girls became health advocates at home. However, dietary patterns remained largely similar across groups in the quantitative findings.

Participation in the Sphoorthi program led to a significant transformation in communication skills, which was closely tied to increased self-esteem and autonomy among adolescent girls. Many reported confidently managing college-related responsibilities, traveling independently, and advising family members, behaviors that reflected enhanced maturity and self-assurance. Girls in the intervention area increasingly made informed decisions about their education and careers instead of passively accepting parental choices. This positive shift is supported by quantitative findings, where 84% of girls in the intervention area reported increased self-esteem compared to 77.60% in the non-intervention area.

Empowered by the Sphoorthi program, one girl challenged gender discrimination when her parents planned to stop her education after 10th grade, unlike her brother. Her successful negotiation led to completing her degree. This aligns with quantitative findings, where 32.7% of intervention area girls demonstrated strong negotiation skills to continue education, compared to 15.8% in the non-intervention area.

Girls from the intervention area demonstrated significantly higher decision-making autonomy compared to those from the non-intervention area. Many were actively involved in key family decisions, particularly related to their education, marriage, and career choices. 16.5% could decide on their education (vs. 8%) and 24% on their career paths (vs. 15%). They also showed greater involvement in household decision-making processes. Overall, decision-making autonomy was notably higher among girls in the intervention area, with 91.5% reporting such involvement compared to 87.7% in the non-intervention area.

The program contributed to reshaping parental attitudes, fostering greater support for daughters' aspirations even when they diverged from traditional norms. This shift also strengthened parent–

daughter relationships, as reflected in the slightly higher proportion of positive parent–daughter interactions in the intervention area (49.20%) compared to the non-intervention area (45.30%).

Adoption:

The Sphoorthi program demonstrated wider adoption at both institutional and community levels. Implementing staff, including community organizers, underwent comprehensive training at a centralized center, with an emphasis on high-quality, confident session delivery without reliance on manuals, thereby enhancing facilitator credibility and engagement. At the community level, adoption was strengthened through active support from local Panchayats, which provided infrastructural and logistical assistance essential for program implementation. Community ownership was evident, as participating girls emerged as role models in their villages, promoting health, education, and delayed marriage, further solidifying local acceptance and integration of the program's objectives.

Implementation:

The implementers identified key factors that helped address the initial issue of low participation in the program. Outreach efforts were intensified by involving friends and family to encourage attendance, and panchayat members were supportive, often helping convince parents and mobilize girls. However, implementers also faced significant challenges due to caste-based exclusion and community resistance, which highlighted entrenched social hierarchies and hindered equitable outreach. Resistance from parents and adolescents was common, driven by skepticism about the program and fear of community backlash. To navigate these barriers, implementers had to dedicate considerable time to community sensitization, build trust, and engage families through personalized efforts.

Maintenance:

Even five years after implementation, the Sphoorthi program shows sustained impact on adolescent girls and their families. Quantitative findings indicate higher self-esteem, self-efficacy, and decision-making autonomy among girls in the intervention area. There was also a slightly stronger parent-daughter relationship. These indicators reflect not only the lasting personal development among participants but also the program's ability to influence long-term behavioral and attitudinal changes within families, highlighting its potential for sustainability and long-term relevance.

To ensure the long-term impact of the Sphoorthi program, participants emphasized the need to integrate it into existing structures such as Mission Vatsalya, Meena Clubs, Child Rights Clubs, and protection committees at the village, taluk, and district levels. Strengthening collaboration with government departments, Gram Panchayats, ASHA workers, and ChildLine is essential to address issues like child marriage, school dropouts, and adolescent health more effectively. Implementers suggested that managing large groups with limited staff requires better role distribution and additional support. Many also recommended extending the program beyond the current three-year duration to cover pre-university education for greater continuity. Increasing parental involvement through regular meetings and awareness sessions was highlighted as key to improving participation and ensuring sustained behavior change. Aligning the program with initiatives like NRLM and Unnati can also support long-term empowerment and livelihood opportunities for girl.

DISCUSSION

The evaluation of the Sphoorthi intervention revealed a range of significant positive outcomes across both quantitative and qualitative dimensions, demonstrating its holistic and sustainable impact on adolescent girls' education, empowerment, and well-being.

The girls in the intervention group exhibited significantly better educational outcomes compared to those in the non-intervention group. Specifically, 40.4% of females in the intervention group had completed graduation or above, compared to only 24.1% in the non-intervention group. Moreover, 60% of intervention participants received sponsorship support from KHPT, Sphoorthi, or related programs, likely contributing to sustained enrollment. In contrast, dropout rates were substantially higher in the non-intervention group (71.6%) compared to the intervention group (52.4%). The most common reasons cited for dropping out included lack of personal interest and parental or guardian-imposed restrictions. Key risk factors associated with dropout included early marriage or engagement, unemployment, non-participation in group activities, and living in households where both parents were unemployed. Psychosocial risk factors such as weak parent–daughter relationships and low self-esteem also played a major role. Additionally, 13.6% of students attended schools outside their villages, and longer travel distances were linked to higher dropout rates.

The program was notably effective in delaying the age of marriage. A significantly higher proportion of girls in the non-intervention group (17.2%) were married before the age of 18, compared to only 6.4% in the intervention group. Girls in the intervention group also reported higher preferred and actual ages at marriage. Notably, 63.7% of females in the intervention group had communicated their preferred age of marriage to their parents, compared to just 44.7% in the non-intervention group. These findings indicate that the intervention empowered young women to actively participate in decisions related to marriage, fostering greater autonomy.

The Sphoorthi program had a strong influence on psychosocial factors such as self-esteem, self-efficacy, and gender attitudes. Among intervention participants, 84% reported high self-esteem and 58.6% reported high self-efficacy. They also scored higher on measures of gender role attitudes, indicating a more progressive and equitable mindset. Logistic regression analyses revealed that lower self-esteem were more common among OBC, those who had low educational attainment, minimal involvement in decision-making, and limited participation in social groups. Additionally, lower self-efficacy were more common among those who were married, had low educational attainment, unemployed and came from illiterate families. Weak parent-daughter relationships, minimal involvement in decision-making, and limited participation in social groups were also linked to low self-efficacy, highlighting the importance of familial and peer support for adolescent well-being.

The program contributed to improved communication within families, particularly around sensitive topics like menstrual health. More than 75% of girls in both groups reported that their parents allocated time equally between sons and daughters. However, in the non-intervention group, parents were more likely to prioritize sons' education and leisure. A larger proportion of girls from this group also reported that only their brothers were included in educational and

household decisions. Parent–daughter relationship strength was associated with several factors. Weaker bonds were found among those with lower education and experienced misbehaviour. Stronger relationships were reported by those with only sisters and those who had no siblings. Additionally, low self-efficacy and low decision-making involvement were associated with weaker relationships, highlighting the interplay between psychosocial health and familial dynamics.

Intervention participants reported significantly higher autonomy in decision-making, including areas such as continuing education (16.5% vs. 8.0%), employment (24.0% vs. 15.8%), community participation (44.8% vs. 34.9%), purchasing personal clothing (40.2% vs. 23.9%), and attending social events (28.6% vs. 20.0%). Logistic regression revealed that lower decision-making involvement was associated with being non-Hindu, having lower education, and preferring marriage before age 21. In contrast, a strong parent-daughter relationship was positively linked to higher autonomy. Low self-esteem and self-efficacy significantly reduced the likelihood of active participation in decisions, emphasizing the program’s role in fostering both individual confidence and supportive environments.

The intervention also fostered peer support and reshaped gender norms. A greater proportion of intervention participants engaged in discussions about child marriage (28.7% vs. 9.8%), advocated for girls’ education (32.7% vs. 15.8%), and supported peers to remain in school (43.6% vs. 27.8%). These behaviors reflect stronger negotiation skills and a shift towards collective empowerment among intervention participants.

Dietary habits regarding staple foods like rice, pulses, vegetables, eggs, meat, fruits, and dairy products were largely similar across both groups. However, processed food consumption was slightly lower in the intervention group, suggesting a subtle positive shift in dietary awareness.

Qualitative findings and results from a previous external evaluation further reinforce these outcomes. The earlier assessment (7) emphasized Sphoorthi’s comprehensive approach, including participatory modules, remedial education, peer engagement, sports, and exposure visits, which contributed to improved school performance, enhanced negotiation skills, and better health and nutrition practices. Role-model girls influenced peers and communities, while initiatives like kitchen gardens and Samvadas fostered broader shifts in aspirations and gender norms. These findings validate the current results, showing that Sphoorthi not only benefits direct participants but also catalyzes change across families and communities.

Comparisons with other adolescent-focused programs such as Kishori Shakti Yojana, UDAAN, and Sabla show that Sphoorthi stands out for its integrated, community-based approach. While many programs emphasize vocational training or skill-building, Sphoorthi’s strength lies in its focus on behavioral transformation, family involvement, and community-level capacity building. The program’s high visibility, emergence of role-model girls, consistent monitoring, and responsiveness to feedback underscore its effectiveness and scalability.

STRENGTHS AND LIMITATIONS

One of the key strengths of this evaluation lies in its rigorous and ethically grounded methodology. The study was conducted by a multidisciplinary research team with extensive experience in research methodology, public health, education, and community work. Fieldwork was carried out diligently and thoroughly, with careful attention to the local context and cultural sensitivities. The research team maintained high standards of integrity and ethical compliance throughout the process, ensuring the credibility of data collection and analysis. This robust methodological foundation adds confidence to the reliability of the findings and the validity of the conclusions drawn.

Despite its promising results, the evaluation presents a few limitations. First, the reliance on self-reported data introduces the potential for recall bias and social desirability bias, which may affect the accuracy of responses, particularly on sensitive topics such as early marriage, health, and decision-making autonomy. Second, while the qualitative narratives provide valuable and in-depth insights, they may not be generalizable across different geographic or socio-cultural contexts. Third, the long-term sustainability of the behavioral and attitudinal changes observed through the program remains to be assessed through follow-up studies. Finally, the relatively high non-response rate poses a limitation, as it may have introduced selection bias and restricted the representativeness of the finding

RECOMMENDATIONS

1. Scale Up the Sphoorthi Program to Other Regions

Given the demonstrated positive outcomes in the current evaluation, it is recommended to expand the Sphoorthi program to other districts and states with comparable socio-cultural contexts. A detailed scale-up strategy should be developed that includes training of local implementers, contextual adaptation of program materials, and establishment of monitoring and evaluation systems to ensure fidelity and effectiveness. Engaging local stakeholders early in the process will facilitate smoother implementation and greater community acceptance.

2. Ensure Program Continuation and Institutional Support

To sustain the benefits achieved by the Sphoorthi program, it is critical to secure long-term funding and institutional backing. This can be achieved by integrating the program into existing government schemes related to adolescent health, education, and empowerment. Formalizing Sphoorthi within government policies will provide a stable platform for ongoing implementation, resource allocation, and scaling efforts. Additionally, capacity building within government and community institutions will ensure the program is maintained beyond the initial project period.

3. Enhance Interdepartmental Collaboration

Strengthening collaboration between departments such as Education, Health, Women and Child Development, and Rural Development will enable a holistic and coordinated approach to adolescent empowerment. Such partnerships can facilitate resource sharing, joint planning, and unified messaging that reinforce the program's objectives across different spheres of girls' lives. Collaborative efforts will also help address overlapping challenges, such as school dropout, early marriage, and reproductive health, comprehensively.

4. Prioritize Sphoorthi Participants in Further Opportunities

Girls who have completed the Sphoorthi program should be given preferential access to scholarships, leadership development programs, vocational training, and community initiatives. This recognition will not only validate their efforts but also encourage them to continue their personal and professional growth. Preferential pathways will help build a cadre of empowered young women who can serve as role models and agents of change within their communities.

5. Update and Adapt the Sphoorthi Module to Reflect Societal and Adolescent Needs

The Sphoorthi curriculum should be regularly reviewed and updated to address evolving social issues and emerging needs of adolescent girls. Topics such as digital literacy, mental health awareness, gender-based violence prevention, and climate change resilience could be incorporated to make the program more relevant and empowering. Tailoring content

to reflect current challenges will maintain engagement and enhance the program's effectiveness in promoting holistic development.

6. Integrate vocational training for economic empowerment

To enhance long-term impact, the Sphoorthi program should more robustly integrate vocational and skills-based training components. Such training equips adolescent girls with practical, job-ready skills, fostering economic independence and expanding future livelihood opportunities. Strengthening this component will empower girls to actively participate in the workforce, contribute to their communities, and break cycles of economic dependency.

7. Include Boys in Training and Empowerment Initiatives

To promote gender equality and support the transformation of deep-rooted social norms, it is recommended that future Sphoorthi programs include boys in training and empowerment initiatives. Engaging boys alongside girls can foster mutual respect, break gender stereotypes, and create a more inclusive environment for discussing issues like gender-based violence, early marriage, and shared responsibilities. By involving boys, the program can encourage them to engage in promoting equity and contribute to building supportive communities where both girls and boys are empowered to thrive.

Table 29: SWOC Analysis of the Sphoorthi Program

Category	Points
Strengths	<ul style="list-style-type: none"> - Demonstrated reduction in child marriage and school dropout rates. - Increased self-esteem, autonomy, and communication among girls. - Strong community and parental engagement. - Multidisciplinary and experienced evaluation team; rigorous fieldwork ensured research integrity. - Comprehensive program design covering education, menstrual health, nutrition, and empowerment. - Success stories that validate program impact and support scaling up.
Weaknesses	<ul style="list-style-type: none"> - Limited long-term data on the sustainability of program impact. - Self-reported data may be affected by recall or social desirability bias. - Inadequate inclusion of boys and male influencers/community leaders. - Not all parents were equally involved in the program, which affected its reach and effectiveness. - Qualitative insights may not be generalizable to all contexts.
Opportunities	<ul style="list-style-type: none"> - Expand to new regions with similar settings and contextual customization. - Integrate with government and NGO-led initiatives for broader reach. - Add vocational training, life skills, and digital literacy components. - Revise content to meet evolving adolescent needs. - Engage boys and young men as gender equality allies. - Leverage role model girls for peer outreach.
Challenges	<ul style="list-style-type: none"> - Deep-rooted gender norms and cultural resistance in some communities. - Risk of dilution in quality during scale-up. - Dependence on external funding may impact continuity. - Need for ongoing training and support for frontline implementers. - Difficulties in ensuring sustained parental involvement, especially in conservative settings.

CONCLUSION

The evaluation of the Sphoorthi program demonstrates its significant impact on advancing girls' education, delaying early marriage, improving self-esteem, and fostering gender-equitable attitudes among adolescent girls in rural communities. Both quantitative and qualitative findings affirm that the intervention effectively empowered girls, strengthened family communication, and enabled girls to make informed choices about their futures.

Notably, the program contributed to a measurable shift in social norms, with girls in the intervention group reporting higher levels of confidence, autonomy, and aspiration. The involvement of communities, families, and implementers played a key role in the program's success, and the presence of inspiring role model girls further reinforced the positive outcomes.

However, to ensure long-term sustainability and broader impact, it is essential to institutionalize the program within existing government structures, expand its reach to new geographies, and continuously adapt its content to evolving societal needs. Furthermore, engaging boys, parents, and local institutions will be crucial in building a more inclusive and supportive ecosystem for adolescent empowerment.

With its strong foundation and evidence-based impact, Sphoorthi offers a replicable and scalable model for holistic adolescent development. Continued investment and intersectoral collaboration will be critical to unlocking the full potential of this promising initiative and securing a more equitable future for all adolescents.

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APPENDIX

APPENDIX - A

Calculation of Self-esteem and Self-efficacy

The baseline survey had some of the statements that were intended to measure self-esteem and self-efficacy. The statements regarding self-esteem were the following:

1. If I work hard, I feel capable of achieving my goals
2. I can express my ideas well at home
3. I feel as intelligent as most other people in my age
4. I do not have hope for my future
5. I am optimistic that I will have a better life than my parents
6. On the whole, I am satisfied with myself

Factor analysis was conducted to identify the statements with the highest factor loadings related to self-esteem. All the Statements exhibited loadings > 0.5 and were therefore selected to construct the self-esteem index. The Cronbach's alpha value is 0.682. The composite scores for these selected statements were then categorized based on percentile distribution: scores up to the 50th percentile were classified as 'Low,' while those above the 50th percentile were classified as 'High.'

A similar procedure was followed to assess the self-efficacy of females. The following questions were used to assess the self-efficacy

1. I feel able to talk to my parents/husband about my hopes and aspirations
2. I can stand up for my right to be treated with the same respect as my brother
3. I can express my views on marriage at home
4. I feel willing and able to speak out in support of girls' education
5. I feel willing and able to speak out against child marriage
6. I feel willing and able to speak out against eve-teasing
7. I feel able to seek help from others to achieve my goals
8. I understand when my body needs rest and I do it accordingly
9. I can convince adolescent girls about the need to wait till the age of 18 to be married

The relevant statements for this domain included items 1,2, 4, 5, 6 and 9 and 10 which had the factor loadings > 0.5 and were thus retained for the construction of the self-efficacy index. Cronbach's Alpha value for reliability is 0.812. The composite scores for the selected questions were again divided into two categories using percentile distribution: scores up to the 50th percentile were considered 'Low,' and those above the 50th percentile were considered 'High.'

APPENDIX -B

Calculation of Decision-Making Index- in cite and title of the appendix

Participation of adolescent girls in decision-making was assessed using a summary index, termed the Decision-Making Index (DMI). This index was developed by assigning specific scores to various components of the decision-making process.

Sl. No	Components	Scores
1	Continuation of education	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
2	Type of school	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
3	Level of education	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
4	Work/Job	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
5	Whom to talk in the community	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
6	Purchasing Clothes for Self	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
7	Going out for family gathering	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
8	Purchasing Household Items	0 - Could not take decisions, opinion not considered
		1 - Individually, Female with parents/others
9	Challenges posed to decisions made against one's own will or well-being	0-No, N/A
		1- Yes

The composite scores were categorized into two groups based on percentiles: scores at or below the 50th percentile were classified as 'Low,' while those above the 50th percentile were classified as 'High'.

APPENDIX - C

Calculation of Parent Daughter Relationship Index

The parent–daughter relationship was assessed through a composite index developed from multiple components. These included the adolescent girls’ comfort in discussing key issues such as education, friendships, menstrual health and bodily changes, teasing or bullying, and age at marriage with parents. In addition, the index incorporated the level of parental support received in areas like education, daily chores, participation in household decision-making, and equitable treatment of daughters and sons. Scores were assigned as outlined in the table below, and composite scores were calculated. Based on percentile, the index was categorized into three levels: scores up to the 50th percentile were classified as ‘Weak,’ scores between the 50th and 75th percentiles as ‘Medium,’ and scores above the 75th percentile as ‘Strong’.

Components	Scores
Comfort in discussing	
School performance	0-Uncomfortable, Very Uncomfortable, N/A (with only father or only mother)
	2- Comfortable/somewhat comfortable/ Neutral with Mother or Father or Guardian,
Continuing education	0-Uncomfortable, Very Uncomfortable, N/A (with only father or only mother)
	2- Comfortable/somewhat comfortable/ Neutral with Mother or Father or Guardian
Friendship	0-Uncomfortable, Very Uncomfortable, N/A (with only father or only mother)
	2- Comfortable/somewhat comfortable/ Neutral with Mother or Father or Guardian
Puberty and body changes	0-Uncomfortable, Very Uncomfortable, N/A (with only father or only mother)
	2- Comfortable/somewhat comfortable/ Neutral with Mother or Father or Guardian
Menstrual health Issues	0-Uncomfortable, Very Uncomfortable, N/A (with only father or only mother)
	2- Comfortable/somewhat comfortable/ Neutral with Mother or Father or Guardian
Teasing or Bullying	0-Uncomfortable, Very Uncomfortable, N/A (with only father or only mother)
	2- Comfortable/somewhat comfortable/ Neutral with Mother or Father or Guardian
Age at Marriage	0-Uncomfortable, Very Uncomfortable, N/A (with only father or only mother)
	2- Comfortable/somewhat comfortable/ Neutral with Mother or Father or Guardian
Support	
Education	0- Only brother, Only Female, Neither
	2-Equal importance for brother and female
Household Chores	0- Only brother, Only Female, Neither
	2-Equal importance for brother and female
Time allocation for education and leisure	0- Only brother, Only Female, Neither
	2-Equal importance for brother and female
Involvement in Household decision-making	0- Only brother, Only Female, Neither
	2-Equal importance for brother and female

APPENDIX -D

Predictors of school dropout

Results of Univariate Logistic Regression Analysis on Adolescent Girl School Dropout

Predictors of School Drop out	Yes		No		Odds Ratio
	Int %	Non- Int %	Int %	Non- Int %	(95% CI)
Participant Groups					
Intervention (Ref)					
Non-Intervention					2.290 (1.773 - 2.970)***
Age					
19 (Ref)	42.9	63.1	57.1	35.8	
20	44.7	70.3	54.4	29.7	1.150 (0.819 - 1.620)
21	63.5	76.7	36.5	23.3	1.950 (1.344 - 2.820)***
22	60.3	78.7	39.7	17.2	2.210 (1.480 - 3.290) ***
23	60	66.3	40	31.4	1.530 (0.967 - 2.430)
Caste					
GENERAL/OTHER (Ref)	42.9	63.4	57.1	34.1	
OBC	50.2	70.9	49.8	29.1	1.010 (0.550 - 1.850)
SC/ST	60	71.6	38.9	24.8	1.450 (0.768 - 2.750)
Religion					
Hindu (Ref)	52.7	69.6	47.3	30.4	
Non Hindu	45.5	83.3	54.5	16.7	1.500 (0.892 - 2.520)
Marital Status					
Unmarried (Ref)	28.3	50.8	71.3	49.2	
Engaged	77.1	58	22.9	42	2.866 (1.765 - 4.653)***
Married	81.3	86	18.7	11.5	9.198 (6.74 - 12.552)***
Education					
Above Higher Secondary (Ref)	12.6	20.9	87.4	79.1	
Upto Upper Primary (8)	95.5	89.7	0	2.6	208.333 (64.355 - 674.426)***
Secondary (9-10)	96.9	98.7	3.1	1.3	263.75 (94.792 - 733.859)***
Higher Secondary (11-12)	88.3	87.2	11.7	12.8	35.375 (23.188 - 53.968)***
Employment					
Yes (Ref)	34.3	58.2	65.3	39.6	
No	84.5	89.7	15.5	10.3	7.376 (5.287 - 10.290)***
Participation in different groups					
Yes (Ref)	42.9	58.2	57.1	40.3	
No	60.9	72.1	38.6	26.6	2.617 (1.969 - 3.480)***
Misbehavior by anyone in last 12 months					
No(Ref)	52.2	70.3	47.6	28.3	
Yes	66.7	86.7	33.3	13.3	2.820 (0.812 - 9.820)

Preferred Marriage age <21					
No(Ref)	48.8	66.5	50.9	32.8	
Yes	85	90.5	15	5.2	7.840 (4.280 - 14.340)
Parent Survival					
Both alive (Ref)	48.8	71.1	50.9	27.3	
Single/ No Parent	68.5	68.5	31.5	31.5	1.260 (0.895 - 1.770)
Parent Literacy					
Both/Single Parent Literate (Ref)	45.8	69.4	54.2	30.6	
Both illiterate	61	72.1	38.4	24.9	1.510 (1.170 - 1.960)***
Parents Working					
Both Working (Ref)	54.5	72.1	45.3	26.7	
Not working	38.2	57.1	61.8	39.7	2.016 (1.368 – 2.967)*
Family Type					
Nuclear (Ref)	52.2	70.1	47.5	28.6	
Joint family	53.8	78.6	46.2	19	1.330 (0.777 - 2.280)
Siblings					
More than one brother and sister (Ref)	55	74.9	44.5	23.9	
No siblings	72.7	68	27.3	32	0.944 (0.456 – 1.957)
Only brothers	49.5	61.3	50.5	35.8	0.626 (0.460 - 0.852)**
Only sisters	43.1	66.7	56.9	33.3	0.616 (0.432 - 0.880)**
Parent Daughter Relationship					
High (Ref)	46.3	64.8	53.7	35.2	
Weak	63.6	79.9	36.4	20.1	2.10(1.561-2.82)***
Medium	49.4	73.4	50.6	26.6	1.37(0.987-1.91)*
DMI					
High (Ref)	49.7	67.6	50	30.9	
Low	80	92.7	20	7.3	2.594 (1.997 - 3.700)***
Self Esteem					
High (Ref)	49.3	66.1	50.7	33.3	
Low	68.2	86.6	30.3	9.4	1.380 (1.070 - 1.780)**
Self Efficacy					
High (Ref)	49.2	65.5	50.8	34.5	
Low	56.7	76.1	42.7	21.2	1.210 (0.934 - 1.560)
Teased on the way to school					
No (Ref)	52.5	70.8	47.3	27.9	
Yes	42.9	62.5	57.1	37.5	1.582 (0.568 – 4.405)
Location of school at village of residence					
Yes (Ref)	57.4	74.6	42.6	25.4	
No	29.2	47.9	70.8	52.1	3.413 (2.381 – 4.902)*

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

APPENDIX -E

Predictors of high self-esteem

Results of Univariate Logistic regression for adolescent girl having high self-esteem

Predictors of High Self-Esteem	High		Low		Odds Ratio (95% CI)
	Int %	Non- Int %	Int %	Non- Int %	
Participant Groups					
Intervention (Ref)					
Non-Intervention					0.659 (0.478 - 0.907)**
Age					
19 (Ref)	87.6	79	12.4	21	
20	75.4	80.4	24.6	19.6	0.778 (0.510 - 1.190)
21	86.5	78.2	13.5	21.8	0.964 (0.612 - 1.520)
22	86.3	76.2	13.7	23.8	0.866 (0.544 - 1.380)
23	92	70.9	8	29.1	0.673 (0.396 - 1.140)
Caste					
GENERAL/OTHER (Ref)	85.7	65.9	14.3	34.1	
OBC	84.9	82	15.1	18	2.559 (1.130 - 5.794)**
SC/ST	81.1	71.6	18.9	28.4	1.911 (0.823 - 4.435)
Religion					
Hindu (Ref)	84.9	78.2	15.1	21.8	
Non Hindu	66.7	70.4	33.3	29.6	0.546 (0.327 - 0.907)**
Marital Status					
Unmarried (Ref)	85.2	88.8	14.8	11.2	
Engaged	77.1	80	22.9	20	0.551 (0.307 - 0.990)**
Married	83.9	69.6	16.1	30.4	0.418 (0.300 - 0.583)***
Education					
Above Higher Secondary (Ref)	89.3	91.8	10.7	8.2	
Up to Upper Primary (8)	72.7	56.9	27.3	43.1	0.153 (0.095 - 0.246)***
Secondary (9-10)	75.4	66.7	24.6	33.3	0.236 (0.151 - 0.367)***
Higher Secondary (11-12)	81.7	83.7	18.3	16.3	0.509 (0.327 - 0.792)***
Employment					
Yes (Ref)	84.5	78.9	15.5	21.1	
No	83.1	75.7	16.9	24.3	0.843 (0.621 - 1.140)
Participation in different groups					
Yes (Ref)	86.4	76.1	13.6	23.9	
No	81.9	77.8	18.1	22.2	0.721 (0.499 - 1.040)*

Misbehavior by anyone in last 12 months					
No(Ref)	84.4	78.2	15.6	21.8	
Yes	33.3	53.3	66.7	46.7	0.241 (0.095 - 0.615)**
Preferred Marriage age <21					
No(Ref)	83.1	77.8	16.9	22.2	
Yes	92.5	76.7	7.5	23.3	0.952 (0.620 - 1.460)
Parent Survival					
Both alive (Ref)	85	78.3	15	21.7	
Single/ No Parent	79.5	73.9	20.5	26.1	0.753 (0.516 - 1.100)
Parent Literacy					
Both/Single Parent Literate (Ref)	83.9	79.7	16.1	20.3	
Both illiterate	84.2	75.1	15.8	24.9	0.734 (0.577 - 0.935)**
Parents Working					
Both Working (Ref)	84.4	77.2	15.6	22.8	
Not working	81.8	81	18.2	19	1.520 (1.026 - 2.260)**
Family Type					
Nuclear (Ref)	83.5	78.3	16.5	21.7	
Joint family	92.3	66.7	7.7	33.3	1.430 (0.863 - 2.370)
Siblings					
More than one brother and sister (Ref)	81.1	76.3	18.9	23.7	
No siblings	90.9	76	9.1	24	0.862 (0.441 - 1.690)
Only brothers	84.8	81.8	15.2	18.2	1.004 (0.745 - 1.350)
Only sisters	92.3	77.4	7.7	22.6	1.004 (0.708 - 1.420)
Parent Daughter Relationship					
High (Ref)	92.1	80.4	7.9	19.6	
Weak	72.2	76	27.8	24	0.513 (0.364 - 0.722)**
Medium	83.1	74.1	16.9	25.9	0.596 (0.399 - 0.891)***
DMI					
High (Ref)	87.6	83.9	12.4	16.1	
Low	45.7	32.9	54.3	67.1	0.179 (0.111 - 0.287)***
Self Efficacy					
High (Ref)	90.5	92.3	9.5	7.7	
Low	74.9	62.3	25.1	37.7	0.081 (0.061 - 0.109)***

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

APPENDIX – F

Predictors of high self-efficacy

Results of Univariate Logistic regression for adolescent girl having high self-efficacy

Predictors of High Self Efficacy	High		Low		Odds Ratio
	Int %	Non- Int %	Int %	Non- Int %	(95% CI)
Participant Groups					
Intervention (Ref)					
Non-Intervention					0.690 (0.536 - 0.887)**
Age					
19 (Ref)	68.6	52.8	31.4	47.2	
20	49.1	56.1	50.9	43.9	0.915 (0.650 - 1.290)
21	58.3	45.1	41.7	54.9	0.823 (0.578 - 1.17)
22	63	47.5	37	52.5	1.031(0.71 -1.5)
23	48	52.3	52	47.7	0.916 (0.587 -1.43)
Caste					
GENERAL/OTHER (Ref)	57.1	43.9	42.9	56.1	
OBC	60.8	55.4	39.2	44.6	2.616 (1.431 - 4.78)**
SC/ST (Ref)	51.6	44	48.4	56	2.007 (1.074 - 3.75)**
Religion					
Hindu (Ref)	59.1	51.4	40.9	48.6	
Non Hindu	52.4	46.3	47.6	53.7	0.742 (0.465 - 1.18)
Marital Status					
Unmarried (Ref)	66.4	62.8	33.6	37.2	
Engaged	60	56	40	44	0.968 (0.599 - 1.565)
Married	47.1	42.2	52.9	57.8	0.596 (0.462 -0.769)***
Education					
Above Higher Secondary (Ref)	68	67.3	32	32.7	
Upto Upper Primary (8)	45.5	23.3	54.5	76.7	0.323 (0.217 - 0.481)***
Secondary (9-10)	35.4	38	64.6	62	0.381(0.271 - 0.536)***
Higher Secondary (11-12)	57.5	60.6	42.5	39.4	0.789 (0.580 - 1.073)
Employment					
Yes (Ref)	61.9	45.8	38.1	54.2	
No	52.7	58.9	47.3	41.1	0.758 (0.592 – 0.980) **
Participation in different groups					
Yes (Ref)	52.5	43.3	47.5	56.7	
No	64.2	51.8	35.8	48.2	0.709 (0.535 – 0.935) **

Misbehavior by anyone in last 12 months					
No(Ref)	59	51.1	41	48.9	
Yes	0	46.7	100	53.3	0.715 (0.282 - 1.82)
Preferred Marriage age <21					
No(Ref)	57.1	50.5	42.9	49.5	
Yes	72.5	53.4	27.5	46.6	1.34 (0.941 - 1.90)
Parent Survival					
Both alive (Ref)	56.8	52.3	43.2	47.7	
Single/ No Parent	67.1	44.1	32.9	55.9	0.999 (0.725 - 1.38)
Parent Literacy					
Both/Single Parent Literate (Ref)	62.3	55.6	37.7	44.4	
Both illiterate	53.7	45.6	46.3	54.4	0.765 (0.600 - 0.976)**
Parents Working					
Both Working (Ref)	59.5	50.2	40.5	49.8	
Not working	52.7	58.7	47.3	41.3	0.903 (0.614 - 1.33)
Family Type					
Nuclear (Ref)	57.6	51	42.4	49	
Joint family	73.1	50	26.9	50	1.17 (0.708 - 1.94)
Siblings					
More than one brother and sister (Ref)	58	52.2	42	47.8	
No siblings	45.5	32	54.5	68	0.469 (0.239 - 0.928)**
Only brothers	60.6	55.5	39.4	44.5	0.894 (0.661 - 1.21)
Only sisters	60	44.1	40	55.9	0.765 (0.539 - 1.086)
Parent Daughter Relationship					
High (Ref)	71.9	60.1	28.1	39.9	
Weak	46.6	38.7	53.4	61.3	0.386 (0.292 - 0.510)***
Medium	44.2	51.1	55.8	48.9	0.512 (0.371 - 0.708)***
DMI					
High (Ref)	61.6	55.7	38.4	44.3	
Low	25.7	17.1	74.3	82.9	0.577 (0.445 - 0.749)***
Self Esteem					
High (Ref)	63.1	60.7	36.9	39.3	
Low	34.8	17.4	65.2	82.6	0.081 (0.061 - 0.109)***

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

APPENDIX - G

Predictors of high participation in decision-making by Adolescent Girls

Results of univariate logistic regression for a high level of participation in decision-making by adolescent girls

Predictors of Participation Decision Making	High		Low		Odds Ratio (95% CI)
	Int %	Non- Int %	Int %	Non- Int %	
Participant Groups					
Intervention (Ref)					
Non-Intervention					0.658 (0.434 - 0.998)**
Age					
19 (Ref)	91.4	85.8	8.6	14.2	
20	91.2	87.8	8.8	12.2	1.150 (0.676 - 1.960)
21	93.8	88	6.2	12	1.300 (0.735 - 2.280)
22	89	90.2	11	9.8	1.200 (0.671 - 2.160)
23	92	87.2	8	12.8	1.040 (0.525 - 2.050)
Caste					
GENERAL/OTHER (Ref)	85.7	82.9	14.3	17.1	
OBC	92.9	89.4	7.1	10.6	2.010 (0.901 - 4.470)
SC/ST (Ref)	87.4	85.3	12.6	14.7	1.220 (0.537 - 2.790)
Religion					
Hindu (Ref)	92.1	88.5	7.9	11.5	
Non-Hindu	81	77.8	19	22.2	0.420 (0.233 - 0.757)**
Marital Status					
Unmarried (Ref)	94.6	90.8	5.4	9.2	
Engaged	85.7	92	14.3	8	0.675 (0.312 - 1.460)
Married	88.4	84.9	11.6	15.1	0.489 (0.320 - 0.748)***
Education					
Above Higher Secondary (Ref)	97.1	96.9	2.9	3.1	
Up to Upper Primary (8)	86.4	80.2	13.6	19.8	0.133 (0.065 - 0.271)***
Secondary (9-10)	84.6	80	15.4	20	0.135 (0.069 - 0.263)***
Higher Secondary (11-12)	86.7	88.7	13.3	11.3	0.224 (0.115 - 0.436)***
Employment					
Yes (Ref)	92.1	87.1	7.9	12.9	
No	90.5	88.6	9.5	11.4	1.030 (0.690 - 1.520)
Participation in different groups					
Yes (Ref)	87.9	88.1	12.1	11.9	
No	94.9	87.6	5.1	12.4	1.170 (0.762 - 1.810)

Misbehavior by anyone in last 12 months					
No (Ref)	91.7	88	8.3	12	
Yes	66.7	73.3	33.3	26.7	0.307 (0.108 - 0.878)**
Preferred Marriage age <21					
No (Ref)	91.2	86.3	8.8	13.7	
Yes	95	94	5	6	2.170 (1.080 - 4.350)**
Parent Survival					
Both alive (Ref)	91.8	88.1	8.2	11.9	
Single/ No Parent	90.4	85.6	9.6	14.4	0.823 (0.506 - 1.340)
Parent Literacy					
Both/Single Parent Literate (Ref)	92.8	88.1	7.2	11.9	
Both illiterate	89.8	87.2	10.2	12.8	0.835 (0.568 - 1.230)
Parents Working					
Both Working (Ref)	91.3	87.7	8.7	12.3	
Not working	92.7	87.3	7.3	12.7	1.080 (0.578 - 2.040)
Family Type					
Nuclear (Ref)	91.5	88.1	8.5	11.9	
Joint family	92.3	81	7.7	19	0.687 (0.341 - 1.380)
Siblings					
More than one brother and sister (Ref)	90.3	87.6	9.7	12.4	
No siblings	90.9	84	9.1	16	0.799 (0.301 - 2.120)
Only brothers	91.9	88.3	8.1	11.7	1.139 (0.700 - 1.850)
Only sisters	95.4	88.2	4.6	11.8	1.326 (0.728 - 2.420)
Parent Daughter Relationship					
High (Ref)	97.00	91.00	3.00	9.00	
Weak	85	86.2	15	13.8	0.422 (0.266 - 0.669)***
Medium	88.30	82.70	11.70	17.30	0.389 (0.233 - 0.648)***
Self Esteem					
High (Ref)	95.4	94.8	4.6	5.2	
Low	71.2	63.1	28.8	36.9	0.099 (0.066 - 0.151)***
Self-Efficacy					
High (Ref)	96.3	95.9	3.7	4.1	
Low	84.8	79.1	15.2	20.9	0.177 (0.110 - 0.284)***

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

APPENDIX -H

Predictors of a strong parent-daughter relationship

Results of univariate logistic regression for Adolescent Girls with strong PDRI

Predictors of Strong PDRI	Weak		Medium		Strong		Odds Ratio (95% CI)
	Int %	Non- Int %	Int %	Non- Int %	Int %	Non- Int %	
Participant Groups							
Intervention (Ref)							
Non-Intervention							1.169(0.914-1.495)
Age							
19 (Ref)		35.8	12.4	19.9	53.3	44.3	
20		31.1	16.7	21.6	48.2	47.3	1.001 (0.715-1.4)
21		35.3	24	18.8	42.7	45.9	0.881 0.621-1.25)
22		34.4	26	24.6	53.4	41	0.921(0.639-1.33)
23	40	31.4	12	19.8	48	48.8	1.039 (0.67-1.61)
Caste							
GENERAL/OTHER (Ref)	0	41.5	14.3	12.2	85.7	46.3	
OBC		31.5	18.6	20.9	50.2	47.5	0.872(0.486-1.57)
SC/ST		36.7	18.9	22.5	43.2	40.8	0.654(0.355-1.2)
Religion							
Hindu (Ref)		33.6	18.9	20.5	48.6	46	
Non-Hindu		37	13.6	25.9	59.1	37	0.865(0.541-1.38)
Marital Status							
Unmarried (Ref)		29.2	17.9	23.2	49.8	47.6	
Engaged		28	17.1	30	45.7	42	0.814 (0.511-1.3)
Married	31	37.8	20	18.1	49	44.1	0.885(0.689-1.14)
Education							
Above Higher Secondary (Ref)		21.4	19.4	21.9	56.3	56.6	
Upto Upper Primary (8)		53.4	9.1	11.2	31.8	35.3	0.411(0.275-0.615) ***
Secondary (9-10)		34.7	18.5	23.3	43.1	42	0.566(0.405-0.791) ***
Higher Secondary (11-12)		34	19.2	23.6	43.3	42.4	0.575(0.428-0.773) ***
Employment							
Yes (Ref)		34.6	17.7	20.4	48.7	45	
No		32.7	20.3	21.7	50	45.6	1.030 (0.805 - 1.32)
Participation in different groups							
Yes (Ref)		35.8	24.2	17.9	33.8	35.8	
No		33.6	13.5	21.2	30.7	33.6	1.221(0.924-1.615)

Misbehavior by anyone in last 12 months							
No (Ref)	32	32.9	18.8	21.2	49.3	45.8	
Yes		73.3	0	6.7	33.3	20	0.320(0.105–0.979) **
Preferred Marriage age <21							
No (Ref)		31	19.8	22.2	49.3	46.8	
Yes	45	47.4	7.5	14.7	47.5	37.9	0.739(0.523– 1.04)*
Parent Survival							
Both alive (Ref)		35	18.8	20.8	48.5	44.2	
Single/ No Parent		27.9	17.8	21.6	52.1	50.5	1.233(0.879– 1.694)
Parent Literacy							
Both/Single Parent Literate (Ref)		31.9	19.1	20.3	52.1	47.8	
Both illiterate		36.1	18.1	21.6	45.2	42.3	0.781(0.614– 0.994) **
Parents Working							
Both Working (Ref)		33.2	18.7	21.4	47.5	45.3	
Not working		39.7	18.2	15.9	60	44.4	1.249(0.852-1.831)
Family Type							
Nuclear (Ref)		34	17.8	20.4	48.8	45.6	
Joint family		31	30.8	28.6	53.8	40.5	0.951(0.581 - 1.557)
Siblings							
More than one brother and sister (Ref)		42.4	21	25.4	37.4	32.2	
No siblings	0	4	0	0	100	96	1.762 (1.292–2.405) **
Only brothers		35.8	27.3	24.1	40.4	40.1	1.302(0.958-1.769)*
Only sisters	3.1	1.1	0	2.2	96.9	96.8	1.912 (1.458–2.508) ***
Self Esteem							
High (Ref)		33.1	18.4	20	53.9	46.9	
Low		36.2	19.7	24.2	24.2	39.6	0.542 (0.397 - 0.739)***
Self Efficacy							
High (Ref)		25.7	14	20.9	60.3	53.4	
Low		42.3	25.1	20.9	33.3	36.8	0.430 (0.336 - 0.550)***
DMI							
High (Ref)		33.3	18	19.7	52.1	47	
Low		37.8	25.7	29.3	17.1	32.9	0.409 (0.268 - 0.623)***

Note: *** p < 0.001, **p < 0.05, *p < 0.1 Ref – Reference Category

APPENDIX - I**Activity Participation**

Distribution of Intervention Participants by Activity Participation and Perceived Importance

	Sample	Percent
Services Received/Activities Participated		
Life skill sessions	294	71.2 %
Follow up for school continuation	320	77.5 %
Exposure visits for girls	193	46.7 %
Tuition classes	149	36.1 %
Communication and leadership development camp	214	51.8 %
Linkages to health services	172	41.6 %
Linkages to social entitlements and schemes	123	29.8 %
Parents meeting	133	32.2 %
Samvada with father	95	23 %
Samvada with boys	85	20.6 %
Samwada with community leaders	46	11.1 %
Opinion on the importance of the services provided for continuing education		
Very important	323	78.2 %
Somewhat important	28	6.8 %
Not at all important	55	13.3 %
Don't Know	7	1.7 %
Topics and Learnings shared		
Benefits of education and higher studies	306	74.4 %
Consequences of early marriage	364	88.1 %
Healthy food habits/nutrition	327	79.2 %
Gender issues	142	34.4 %
Sneha clinic	95	23 %
Health & hygiene	276	66.8 %
Career guidance	75	18.2 %
Communication skills	211	51.1 %
Leadership skills	250	60.5 %
Eve teasing	188	45.5 %
Toilets	184	44.6 %
Other	5	1.2 %

APPENDIX – J

Details of the Qualitative interview participants

Intervention area participants' information

Sl.No	Name	Age	Education	Occupation
Stakeholders				
1	Poornendra Swami	55	Degree	GP Secretary
2	Hanumakka	45	SSLC	ASHA worker
3	Harish Jogi	43	MSW	UNICEF
4	Sangamesh	42	Degree	PDO
Implementers				
1	Vijayalaxmi	38	PUC	Community organizer
2	Lathamma	34	PUC	Field coordinator
Parents				
Mothers				
1	Basamma	42	No formal education	Homemaker
2	Bellavva	37	No formal education	Homemaker
3	Sudha	48	SSLC	SHG Leader
4	Jayashree	45	3 rd standard	Homemaker
Fathers				
1	Yallappa Tukarama Belankanal	48	SSLC	Tailor
2	Gurushanthappa Shettar	54	SSLC	Farmer
3	Prabhuraj	50	Paramedical course	Health Inspector
4	Hanumappa	45	5 th standard	Farmer
Girls				
1	Shameena Banu	21	Studying B.Sc 3 rd year	Student
2	Kavita	22	Studying MSW 2 nd year	Student
3	Renuka	21	Nursing	Nurse
4	Gulemma	22	Degree	Unemployed
5	Indira	22	Degree	Barefoot Counsellor
6	Preeti	21	Degree	Beautician

Non-intervention area participants' information

Sl.No	Name	Age	Education	Occupation	
Stakeholders					
1	Shankravva	34	PUC	LCRP - Sanjeevini	
2	Heerappa	43	PUC	GP members	
3	Ravindra	50	PUC	GP members	
4	Ashok S Angadi	47	PUC	GP members	
5	Ameeramejana M Mullara	41	PUC	GP members	
6	Nirmala	43	PUC	GP members	
7	Manjula	37	PUC	Anganwadi teacher	
8	Kamma	54	SSLC	ASHA worker	
Parents					
Mothers					
1	Vijayalaxmi Kottagi	42	SSLC	ASHA Worker	
2	Suvarna	42	PUC	Homemaker	
3	Akkamma	40	5 th Standard	Homemaker	
4	Lakshmavva	35	No formal education	Homemaker	
Fathers					
1	Kenchappa	54	PUC	Farmer	
2	Sharanappa	50	No formal education	Daily wage worker	
3	Sharanappa H Hanumasagar	43	7 th Standard	Daily wage worker	
Girls					
1	Koushalya	23	PUC	Homemaker	
2	Khadirbi	22	SSLC	Homemaker	
3	Bharathi	21	B. A	Student	
4	Shaila	22	B. A	Homemaker	
5	Hanumavva	22	P.U.C	Homemaker	
6	Renuka	23	GNM	Staff Nurse	



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