Chapter 3

Research Objectives, Design, and Structure

This chapter covers the research questions, which were informed by the gaps identified in the existing health communication frameworks, and the research objectives, which were identified based on the research questions. Furthermore, the research design and methods for developing the social communication model are discussed.

1.1 Research Questions

- How can female adolescents be made aware of reproductive health and well-being and their long-term implications?
- What will make female adolescents speculate about their future life in terms of reproductive health and well-being?
- What are effective ways to communicate with female adolescents regarding their reproductive health and well-being?
- How can a health information system be designed to be delivered longitudinally, leading to sustainable behaviour change?
- How can a safe and enabling environment be created for female adolescents to encourage them to overcome social barriers and engage in health information-seeking behaviour?

1.2 Research Objectives

The present research developed a social communication model for female adolescents to increase awareness of their reproductive health and well-being and enable them to speculate about their future life trajectories. The objectives of the study were to:

- understand the current knowledge, awareness, and information retention of women from different age groups regarding their reproductive health and well-being;
- identify the information-seeking behaviours of women from different age groups regarding their reproductive health and well-being;

- investigate the pattern and degree of retention of knowledge and information about reproductive health and well-being received at an early age;
- examine whether reproductive health awareness depends on one's residential location or attitude towards accepting a positive change;
- identify the sources of information about reproductive health and well-being and their influence on health-seeking behaviour; and
- develop a social communication model to promote behaviour change amongst female adolescents towards their reproductive health and well-being.

1.3 Research Design

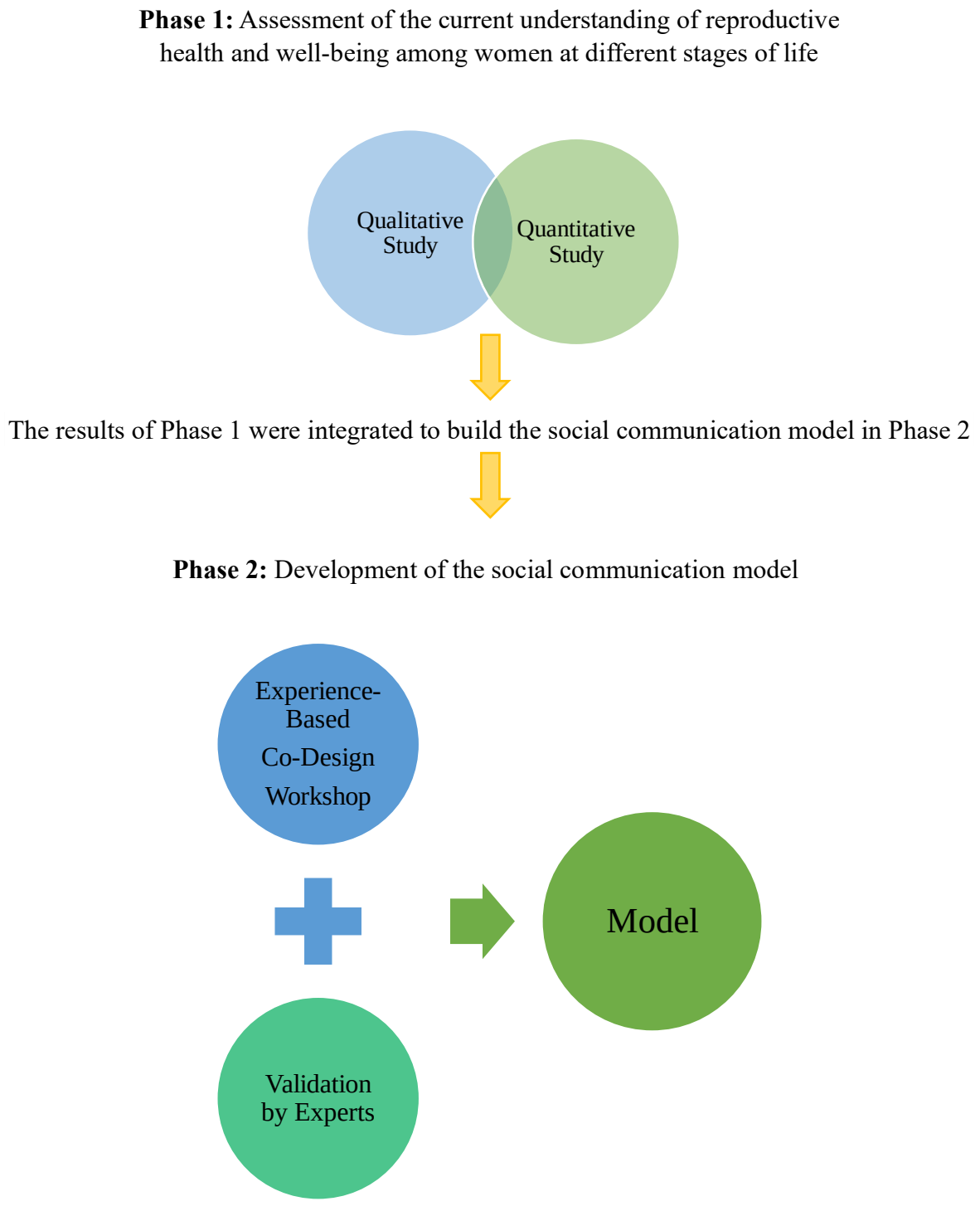
The study was divided into two phases for an empirical understanding of the research topic (see Figure 7). In Phase 1, the exisiting knowledge of reproductive health and well-being was evaluated among women at different stages of life, and their information sources and retention were identified. In Phase 2, a social communication model for female adolescents was constructed to promote knowledge about reproductive health and well-being.

Phase 1 was further divided into two parts: Phase 1A and Phase 1B. Phase 1A involved a qualitative study where interviews were conducted with 30 women between the ages of 25 and 65. In Phase 1B, a quantitative study was conducted using an online survey questionnaire. Both studies focused on understanding participants' current knowledge, awareness regarding their reproductive health and well-being, health information-seeking behaviour, and information retention.

Phase 2 was also divided into two parts: Phase 2A comprised a series of workshops to build the social communication model, and Phase 2B involved an expert review in evaluating the social communication model.

Figure 1

Schematic Representation of the Research Design



1.4 Phase 1 – Assessment of the Current Understanding of Reproductive Health and Well-Being Among Women at Different Stages of Life

A concurrent mixed methods research design was used for Phase 1. Mixed method research refers to research in which the researcher combines qualitative and quantitative research approaches for an in-depth understanding and corroboration of the results. In concurrent mixed methods, the researcher converges or merges quantitative and qualitative data to provide a comprehensive analysis of the research problem. In studies that use this design, the research collects both types of data concurrently, allowing the integration of information while concurrently interpreting the overall results (Creswell, 2009).

1.4.1 Phase 1A – Qualitative Study

To evaluate the understanding of reproductive health and well-being and the level of information retention among women, conducting research with women participants who are past adolescence was necessary. Hence, the participants were aged between 25 and 65 years.

1.4.1.1 Objectives. The objectives of the qualitative study were to understand:

- the current knowledge, awareness, and information retention in terms of reproductive health and well-being among women at different stages of life;
- the variation in information-seeking behaviour across women of different ages;
- the sociodemographic influences that affect knowledge building and information seeking for reproductive health and well-being; and
- whether information seeking is influenced by one's residential location or attitude.

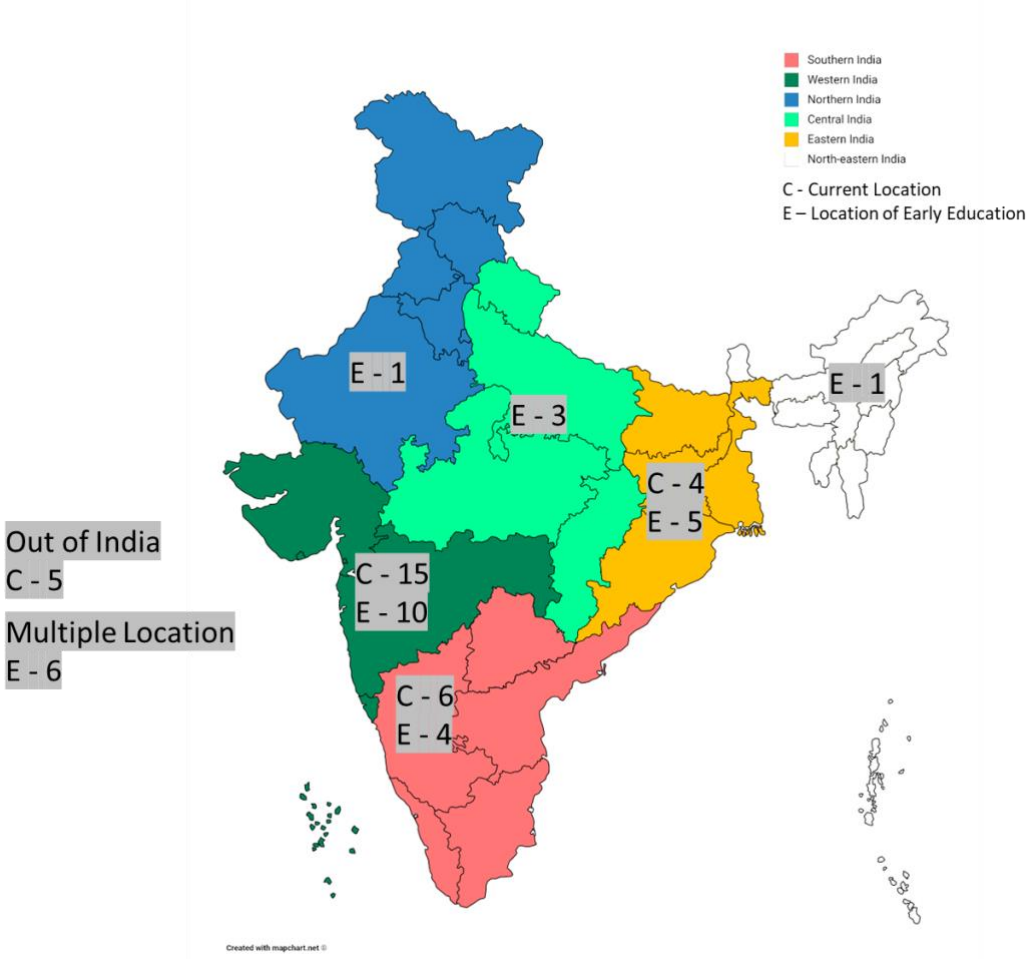
1.4.1.2 Methods. Semi-structured interviews were conducted with 30 women participants aged 26–65 years using offline and online modes, depending on their feasibility for the participants and COVID-19 protocols.

1.4.1.2.1 Sample. Purposive sampling was used to identify a population that would represent the diversity of India. Emphasis was placed on the location where the participants had spent their adolescence. The purpose was to understand the influence of sociodemographic settings in the formative years of life and compare it with their current social environment and exposure to knowledge. The sample was spread across tier-1 and -2 cities covering the primary

zones of India (see Figure 8). Sample selection depended on the attitude of the participants towards the topic and their willingness to participate in the study.

Figure 2

Sample Distribution by Region for Phase 1



1.4.1.2.2 Tool. The initial 10 interviews were conducted in person. Because of COVID-19 protocols, the remaining 20 interviews were conducted using Jitsi Meet (https://jitsi.org/jitsi-meet/), a free and open-source online platform that allows video conferencing and instant messaging. It is one of the few video conferencing tools with end-to-end encryption between two users because it uses a cryptographic protocol called Transport Layer Security. This ensured the confidentiality of the personal information and data shared by the participants during the interviews. The participants could join the video conference using a hyperlink without sharing any personal data or identification, offering a safe space to share

their personal experiences. Further, the participants were assured that any video recording would occur only after signing the consent form and with their permission.

1.4.1.2.3 Procedure. Thiry women participants who volunteered to participate and represented diverse sociodemographic settings were interviewed for the study. Informed consent was obtained from all the participants, and they were assured of the confidentiality of their responses, especially those related to their personal experiences and challenges. The first 10 interviews were conducted in person with a prior appointment, and the remaining 20 interviews were conducted telephonically or through Jitsi Meet (https://jitsi.org/jitsi-meet/). All the interviews were conducted in English, Hindi, and Bengali, depending on the language preference of each participant. The audio recordings of the 30 interviews comprised 970 minutes, and the average interview duration, which varied by the openness of the participant, was approximately 33 minutes. The shortest and longest interviews lasted 23 and 57 minutes, respectively. Chapter 4 explains this process in further detail.

1.4.1.2.4 Structure of the Interview. The interview was designed using open-ended questions that would make the participants reflect on their self-journey towards understanding reproductive health and well-being. The interviews started with ice-breaker questions about demographics, followed by direct questions about terms such as sexual health, reproductive health, and hormones. These were then followed by reflective questions about the participant's experiences through the various stages of life in relation to the evolution of their knowledge and understanding through experience. Finally, probing questions were asked to understand the context better. The structure of the interviews is listed in Table 1.

Table 1

Structure of the Interviews

Explored topics	Themes explored	Foundational interview questions
Understanding of terminology	Awareness about reproductive and sexual health and the similarities and differences between the two	• What do you understand by the term 'healthy'? • What do you understand by reproductive health? • What do you understand by sexual health? • Is there any difference between reproductive and sexual health?
Health issues related to reproductive health	Awareness about one's well-being	• Did you have any health issues during adolescence, especially during your periods? • What was your lifestyle when you were young? Did you engage in any type of physical activity?
Sociocultural norms and practices	Formation of ideas, concepts, and cultures	• What health-related dos and don'ts were you told about while growing up? (e.g., horse riding and lifting heavy things) • What are the normative beliefs about reproductive health in your culture? • What cultural practices do you know for better reproductive health in women?

Explored topics	Themes explored	Foundational interview questions
Sources of information	Information-seeking behaviour	• When did you begin discussing reproductive health or sexual practices? With whom and at what age? • What or who were your sources of information?
Influences for formative learning	Information-seeking behaviour	• Were or are you aware of any reproductive health issues? • Were or are you concerned about them?

1.4.1.3 Research Ethics. For the qualitative interviews, informed consent and permission for recording the interviews were obtained from all the participants. The participants were assured of the confidentiality of their responses and could choose not to respond to any questions they were uncomfortable answering. Further, they could withdraw their participation whenever they wished to, in which case their data would not be used for the study. The data generated is accessible only to the researcher.

1.4.2 Phase 1B – Quantitative Study

The purpose of this phase of the research was to understand women's awareness of their self, reproductive health, and well-being and further compare it with their information-seeking behaviour.

1.4.2.1 Objectives. The objectives of the quantitative study were to understand:

- the current level of awareness about reproductive health and well-being amongst women;
- the sources of information about reproductive health and well-being sought by women;
- if women are aware of the terminology related to reproductive health;
- if information seeking varies across age groups and leads to knowledge building.

1.4.2.2 Methods. An online survey was conducted among 736 participants using Google Forms.

1.4.2.2.1 Sample. An initial pilot study was conducted with 136 participants, who could also participate in the qualitative study. After gathering sufficient qualitative data, the quantitative study was continued without the qualitative study questions. The quantitative study sample comprised 736 participants, of which 696 were included in the final analysis. Figure 9 depicts the distribution of the sample across the regions of India.

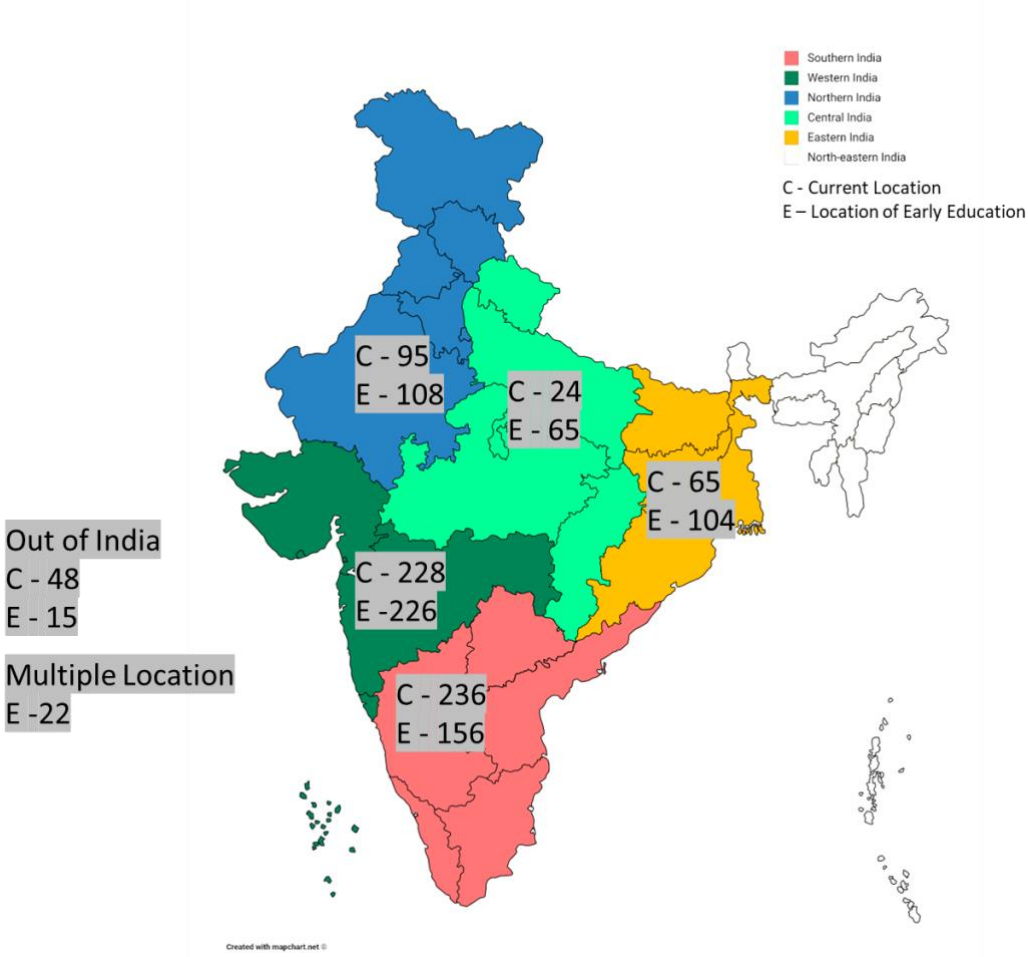
1.4.2.2.2 Tool. A survey questionnaire was developed with 22 items, of which 20 were multiple-choice and two were short descriptive questions. Some of the questions had multiple correct answers to confirm that the participant had a conceptual understanding of the topic. The questions were divided into the following categories:

- Awareness about reproductive health
- Issues related to reproductive health
- Conceptual understanding of reproductive health
- Source of information and its influence

1.4.2.2.3 Procedure. Because of the COVID-19 pandemic, the survey was conducted online using Google Forms in English. Thus, the participants possessed a basic or working knowledge of technology. The researcher used snowballing by requesting the participants to circulate the survey link with 10 other individuals. The procedure is explained in detail in Chapter 5.

Figure 3

Sample Distribution by Region for Phase 2



1.4.2.2.4 Structure of the Interviews. The structure of and the topics covered in the survey form are listed in Table 2.

Table 2

Topics Covered in the Interviews

Question type	Topic
Demographic questions	• Age • Gender • Children • Marital status • Current location • Location where early school education was received
Knowledge of reproductive health	• PCOS • Hormones • Menopause • Menstruation • Mental health • White discharge • Other related issues • The ovaries and uterus • Reproductive and sexual health • Problems related to reproductive health
Information-seeking behaviour	• Source of information • Level of confidence in information • Age at learning about reproductive health

1.4.2.3 Research Ethics. The participants' names and email addresses were not required in order to maintain confidentiality. Data related to the participants' gender, current

location, and location of their formative education were acquired. In the questionnaire, participants could consent to allow the researcher to use and publish their data. No data were collected from the participants who did not consent.

1.5 Phase 2 – Developing a Gamified Social Communication Model and Toolkit

In this phase, a gamified social communication model and toolkit were developed using action research and expert review. It was further divided into Phase 2-A – Building the Social Communication Model and Phase 2-B – Expert Review.

1.5.1 Phase 2-A – Building a Social Communication Model Using EBCD

Phase 2-A involved designing and developing a gamified social communication model and toolkit to psychoeducate adolescents about their reproductive health and well-being using action research. This included conducting a series of workshops with young adults.

1.5.1.1 Objectives. The objectives of Phase 2-A were to:

- develop a social communication model to make adolescents aware of their reproductive health and well-being;
- develop the model using EBCD; and
- identify components that could be integrated to build a gamified social communication toolkit.

1.5.1.2 Methods.

1.5.1.2.1 Sample. The sample consisted of seven young adults aged between 20 and 24 years who were design students with previous experience working on projects related to women's health.

1.5.1.2.2 Tool. Microsoft Teams (https://www.microsoft.com/en-in/microsoft-teams/free) was used to conduct online meetings. It is a proprietary business communication platform developed by Microsoft as part of Microsoft 365 that offers chat functionality for workspaces, video conferencing, file storage, and application integration.

The cloud-based tool Miro (https://miro.com) was used to create, collaborate, and communicate. It features a digital whiteboard that can be used for research, ideation, building

customer journeys and user story maps, wireframing, and a range of other collaborative activities.

1.5.1.2.3 Procedure. The workshop spanned 10 days (see Table 3), and the average duration of each session was 2 hours.

Table 3

Daily Itinerary of the Workshop

Days	Agenda	Duration
Day 1	Discussion over the protocol Introduction to the theoretical models	1 hr
Day 2	Discussion on the theoretical models	2 hr 5 min
Day 3	Discussion on the theoretical models	2 hr 55 min
Day 4	Introduction to the qualitative data	2 hr 11 min
Day 5	Identifying statements related to information seeking Information clustering	2 hr 15 min
Day 6	Behaviour analysis of the participants Categorising participants into different personality types to build archetypes	47 min
Day 7	Needs analysis: identifying the what, how, and when	1 hr
Day 8	Identifying different categories of information	2 hr 49 min
Day 9	Identifying metaphors depicting the journey of a woman's body	55 min
Day 10	Ideating different design concepts to build the conceptual model	36 min
Day 11	Ideating and brainstorming over the concepts	6 hr
Day 12	Developing the concepts and building the conceptual framework	6 hr

1.5.1.3 Research Ethics. The workshop was conducted after explaining the protocol and receiving the participants' consent. The participants were given a detailed explanation about any monetary benefits, permission to publish their data, copyright breaches, confidentiality, and the option to withdraw from the study at any time. They were also informed that all the sessions were recorded.

1.5.2 Phase 2-B – Expert Validation

The model and components of the toolkit were further evaluated by experts with field experience in working with adolescents.

1.5.2.1 Objectives. The objectives of Phase 2-B were to:

- evaluate the social communication model and check its effectiveness in informing adolescents about their reproductive health and well-being;
- evaluate the components identified for developing the toolkit; and
- determine the efficacy of the model and the toolkit.

1.5.2.2 Methods.

1.5.2.2.1 Sample. Convenience sampling was used to identify experts interested in reviewing the framework and toolkit. This was done by approaching NGOs and private firms working in the fields of healthcare and adolescent well-being. A list of 12–15 experts was determined, further scrutinised, and shortlisted to ensure a group with diverse experiences. Nine experts were approached via an email explaining the study, of whom seven responded. However, due to time constraints, only five experts could participate. They included a gynaecologist, a psychologist, an Ayurvedic doctor, and two professionals working with non-governmental organisations involved in adolescent care.

1.5.2.2.2 Tool. All interviews were conducted using Jitsi Meet (https://jitsi.org/jitsi-meet/).

1.5.2.2.3 Procedure. Once the experts agreed to participate, a meeting was scheduled as per their convenience. A presentation on the framework and components of the toolkit was shared with them prior to the call. During the call, the presentation on the framework and components of the toolkit were discussed in detail. The research was explained using a scenario-based narrative to build a comprehensive understanding, followed by an elaborate open-ended discussion and feedback session. When the experts wished to have a second interview or had unresolved queries, a second round of interviews was conducted.

1.5.2.3 Research Ethics. Prior permission was taken from the experts, and the meeting was scheduled at a time convenient to them. Confidentiality was maintained when the experts did not agree to disclose the identity of the organisation where they were employed.