Research Methodology
CHAPTER III

RESEARCH METHODOLOGY

The study, “The Efficacy of m-Health Intervention in Creating Essential Knowledge on AnteNatal Care – An Experimental Study among Expectant Mothers in Coimbatore” used an Explanatory Sequential Mixed Methods Approach to understand the effectiveness of the mobile phones in creating knowledge or awareness on antenatal care among the expectant mothers. Besides, the study helps gauge the attitude of women in using mobile phones for health services.

A mixed method research allows for a more complete understanding of the research problem as it is a combination of both quantitative and qualitative approaches (Creswell, 2014). In Explanatory Sequential Mixed Methods approach quantitative data are first collected and the results are analysed. It is followed by the second phase using a qualitative approach to provide improved explanation beyond the quantitative results.

Quantitative research is an approach for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures (Creswell, 2014).

A Pre Experimental Study using One Group Pre-test and Post-test design was employed. This design includes a pretest measure followed by a treatment and a posttest for a single group.

\[
\begin{array}{c}
\text{Group A} & \text{01} & \text{X} & \text{02} \\
(\text{Pre-test}) & (\text{Treatment}) & (\text{Post-test})
\end{array}
\]

\textbf{Fig. 1} One Group Pre-test & Post-test Design (Creswell, 2014)

In a Qualitative research, the research problem is approached with an understanding of the meaning individuals or groups ascribe to it using emerging questions and procedures. The present study used qualitative in-depth interviews with various stakeholders of m Health, both from the demand side (patients), and the supply side (Health department officials, Doctors, and Village Health Nurses (VHNs). These interviews provided a better understanding on the existing conditions and the future perspectives of m Health in Indian context.
As a whole, the research design for the study was done in three stages as given below

![Diagram](image)

**Fig. 2** Diagrammatic Representation of Research Design for the Study

### 3.1 Research Design

#### 3.1a The Study Area

The study was conducted in Coimbatore city located in Tamil Nadu, India. Expectant Mothers visiting Primary Health Centers (PHC) located in the rural and semi urban areas of Coimbatore were drawn as the respondents of the study.

#### 3.1b Pre –test

During the Pre-test, expectant mothers who volunteered for the study were administered with a questionnaire in an interview schedule. Data including their demographic profile, mobile phone competency, mobile phone usage behavior, sources of health information, interest in receiving the various areas of m Health, and the preferred mode of delivery for receiving health care messages were collected. An assessment of the knowledge level of the respondents on various aspects of Antenatal Care was done with the questionnaire. In addition mobile phone numbers were collected to send intervention of Antenatal Care messages.

#### 3.1c Intervention

The intervention consisted of mobile text messages on antenatal care which were sent to the mobile phones numbers of the respondents of the Pre-test. The messages focused on the key areas of antenatal care such as ANC visits, immunization, scans, birth preparedness, anaemia, gestational diabetes, nutritional aspects, taking IFA and iodine supplements.

#### 3.1d Post –test

After the intervention, a post test questionnaire was administered to find out the level of increase in the Response of the respondents on antenatal care. Moreover, the respondents’ attitude towards Using Mobile Phones for Health Services was assessed through statements drawn based on the various constructs of the UTAUT theory.
3.1e In-depth interviews

To add support and provide further insight into the results of pre-test and post-test, in-depth interviews with 30 stakeholders representing the demand and supply side of m Health was carried out.

3.2 Sample Selection

The expectant mothers visiting the various PHCs in the rural and semi urban areas of Coimbatore constituted the sample of the study. The expectant mothers of these areas are less exposed to sources of health information other than the Doctors, VHNs and their own family. The need for an alternate and complementing source of health information is an essential requirement for such expectant mothers who may not be able to consult the doctors at their own convenience. The sample hence consisted of expectant mothers in need of health information and at the same time not exposed to m Health. A non-probability purposive sampling technique was used.

3.2a Sampling Procedure

In order to select the areas of study, the health department officials identified and suggested the health blocks which can be accessed by the researcher. In India, a block is identified as a zone for development comprising of 100 villages with a population of 80,000 to 1,20,000 people (Chapter-VIII Public Health Care System of Planning Commission). The recommended health blocks were Anaimalai Block, Karamadai Block, Kinathukadavu Block, Madukkarai Block, Thondamuthur Block and Periyanaiicken Palayam Block. Based on the number of expectant mothers registered and the convenience for access, the Primary Health Centers (PHCs) within the health blocks for the study was further narrowed down.

The researcher visited these PHCs on Tuesdays designated for maternal healthcare by the health department. The structured interview questionnaire was administered to the willing expectant mothers who were in any of the 3 trimesters and who visited the PHC on that day. The procedure was followed in all other designated PHCs and a sample of 420 willing respondents was finally arrived at. After rejection of few unfilled questionnaire, the pre-test sample was arrived at 375.
With the consent of the pre-test respondents the Antenatal Care mobile text messages were sent to all the 375 respondents for a period of one month. After a week of instituting the intervention, confirmation of the receipt of the messages was made from the respondents.

However, after the intervention, only 198 respondents could be administered with the post test questionnaire on reasons of respondents remaining out of reach, non-visit to the PHCs and change of address. The final sample was determined to be 198.

3.2.b Distribution of the Respondents

Table No. 3.1

Distribution of the respondents based on Age

N= 198

<table>
<thead>
<tr>
<th>Age of the respondents in years</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>21</td>
<td>22</td>
</tr>
<tr>
<td>22</td>
<td>30</td>
</tr>
<tr>
<td>23</td>
<td>28</td>
</tr>
<tr>
<td>24</td>
<td>19</td>
</tr>
<tr>
<td>25</td>
<td>13</td>
</tr>
<tr>
<td>26</td>
<td>9</td>
</tr>
<tr>
<td>27</td>
<td>14</td>
</tr>
<tr>
<td>28</td>
<td>8</td>
</tr>
<tr>
<td>29</td>
<td>3</td>
</tr>
<tr>
<td>30</td>
<td>6</td>
</tr>
<tr>
<td>32</td>
<td>3</td>
</tr>
<tr>
<td>33</td>
<td>2</td>
</tr>
</tbody>
</table>
Table No. 3.2
Distribution of the respondents based on Education

\[ N = 198 \]

<table>
<thead>
<tr>
<th>Education level of the respondents</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 10th standard</td>
<td>102</td>
</tr>
<tr>
<td>Plus two</td>
<td>54</td>
</tr>
<tr>
<td>Graduate</td>
<td>25</td>
</tr>
<tr>
<td>Post Graduate &amp; above</td>
<td>17</td>
</tr>
</tbody>
</table>

Table No. 3.3
Distribution of the respondents based on Type of family

\[ N = 198 \]

<table>
<thead>
<tr>
<th>Type of family of the respondents</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear family</td>
<td>86</td>
</tr>
<tr>
<td>Joint family</td>
<td>112</td>
</tr>
</tbody>
</table>
Table No. 3.4

Distribution of the respondents on the basis of Age group, Education and Type of Family Set-up

<table>
<thead>
<tr>
<th>Age</th>
<th>Nuclear Family</th>
<th></th>
<th>Joint Family</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Up to 10th std</td>
<td>Plus two</td>
<td>Graduates</td>
<td>Post Graduates</td>
<td>Up to 10th std</td>
</tr>
<tr>
<td>19</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>20</td>
<td>7</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>21</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>9</td>
</tr>
<tr>
<td>22</td>
<td>7</td>
<td>4</td>
<td>1</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>23</td>
<td>9</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>25</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>26</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>28</td>
<td>2</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>29</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>33</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>198</td>
<td></td>
<td></td>
<td></td>
<td>198</td>
</tr>
</tbody>
</table>

3.3 Variables Used For the Study

A variable refers to a characteristic or attribute of an individual or an organization that can be measured or observed and that varies among the people or organization being studied. (Thompson, 2006).

The variables used for finding out the purposes of the study were the knowledge level of the respondents on antenatal care, Attitude towards using mobile phones for
Health Services in terms of Performance Expectancy, Effort Expectancy, Facilitating Conditions, Social Influence, Behaviour Intention, Self Efficacy and Attitude, Demographic factors including age, type of family set up and education.

Independent variables are those that (probably) cause, influence, or affect outcomes in another variable. They are also called treatment, manipulated, antecedent, or predictor variables. Dependent variables are those that depend on the independent variables; they are the outcomes or results of the influence of the independent variables. Other names for dependent variables are criterion, outcome, effect, and response variables. (Creswell, 2014).

With the aim of finding out if mobile phone text messages are able to create the essential knowledge and awareness on antenatal care among the expectant mothers, the study used the demographic variables like age, education and type of family set up and the intervention messages as independent variables. The dependent variables on which the outcome of the experimental study are based on the knowledge level of the respondents on antenatal care and the attitude of the respondents in terms of the constructs of UTAUT- Performance Expectancy, Effort Expectancy, Facilitating Conditions, Social Influence, Behavior Intention, Self Efficacy and Attitude.

3.3a Independent Variables

Age

The age of the respondents was considered a continuous variable and hence no specific groups were formed. The respondents, the expectant mothers were found to be within the age group of 19 to 33 years.

Education

The present study categorized the education level of the respondents into four groups – Up to 10th standard, Plus two, Graduates and Post Graduates

Type of family set up

The respondents were identified to come under two types of family set up – Joint Family and Nuclear Family

52
Antenatal care mobile text messages

The mobile text messages contained antenatal care aspects including registration and ANC visit, immunization, maternal anaemia, iron and folic acids, birth preparedness, gestational diabetes,

3.3b Dependent Variables

Knowledge level

The existing awareness level of the respondents on Antenatal Care before the intervention was considered to be Knowledge level.

Response level

The existing awareness level of the respondents on Antenatal Care after the intervention was considered to be Response level.

Performance Expectancy

The outcome expectations of the respondents on the use of mobile phones for health services such as improved performance, timeliness and effectiveness of the messages are identified as Performance Expectancy

Effort Expectancy

Effort expectancy refers to the ease of effort associated with the use of mobile phones for Health Services such as ease of operating the mobile phones and ease of comprehending the content.

Social Influence

Social Influence refers to the respondents’ opinion of how the influence of others and society drives them to use mobile phones for health services

Facilitating Conditions

Facilitating Conditions are the various factors which allows for a convenient use of mobile phones for health services such as Infrastructure, network connectivity and system & language compatibility.
**Behavioural Intention**

The features of the content of the messages or the intervention that creates the intention to practice the Antenatal care messages sent through mobile phones during their pregnancy period is considered as Behavioural Intention.

**Self Efficacy**

The respondents’ conception of their own efficiency in operating the mobile phones on a regular basis for accessing health services is considered as Self Efficacy.

**Attitude**

The mental outlook of the respondents on the mobile phones and their usage in their lives that will determine their usage behaviour is considered as Attitude.

### 3.4 Tools for Data Collection

In the present study, three major tools of data collection were incorporated.

- Interview schedule questionnaire with open ended and closed ended questions for the Pre-test.
- Interview schedule questionnaire with open ended and closed ended questions for the Post-test
- In-depth interviews with all the stake holders of the healthcare industry

#### 3.4a Pre test

The Pre-test was conducted among the expectant mothers visiting the PHCs who volunteered to be a part of the study.

The Pre-test questionnaire consisted of three sections.

- Section A contained questions probing the demographic information of the respondents.
- Section B consisted of questions on mobile phone competency, mobile phone usage behavior, sources of health information, interest in receiving the various areas of m Health, and the preferred mode of delivery for receiving health care messages.
• Section C was used to assess the existing level of knowledge of the respondents on Antenatal Care before the intervention of mobile health messages.

The primary instrument developed is the Knowledge test on Antenatal Care (KTANC) which consisted on questions testing the knowledge level of the respondents on Antenatal Care. The scale was used in the Pre-test stage of the study.

The instrument was developed based on the informal discussions with the Doctors and Village Health Nurses (VHNs) and based on the guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/LHVs/SNs prepared by the Maternal Health Division, Ministry of Health and Family Welfare, Government of India.

The questions testing the awareness level of the expectant mothers on antenatal care included the issues regarding Registration of Pregnancy, ANC Visits, Scan and TT injections, Folic Acid Supplements, Anemia, Gestational diabetes, Foetal movements, Weight Gain, Nutritional Aspects, Signs of labour, Birth preparedness, General Advice on how to behave during pregnancy.

3.4b Intervention

The intervention of sending antenatal care messages to the mobile numbers of the respondents collected in the Pre-test was carried out for a period of one month.

The instrument developed for the purpose of the intervention was Short Messages Services (SMS) on Antenatal Care (SMSANC) which consisted of health care messages on Antenatal Care which was sent to the pre test sample.

The SMS on Ante Natal Care (SMSANC) consisted of health care messages on Ante Natal Care. The messages were developed in Tamil, the regional language to enable better comprehension by the respondents. Based on the informal discussions with the Doctors, VHNs, expectant mothers visiting the PHCs and the ANM guide published by Ministry of Health and Family Welfare, Government of India, the messages contained essential guidance for healthy pregnancy period were prepared.

In order to conform with the face validity of the health messages to be sent to the expectant mothers, opinions from the doctors, VHNs, health department officials, academicians and pregnant women were sought.
3.4c Post test

After the intervention of exposure to antenatal care messages for a period of one month, the post test was carried out with another interview schedule. It was designed to test the increase in the awareness level on antenatal care and also the attitude towards using mobile phones for health services.

The Post –test questionnaire contained two sections, one with questions on testing the increase in the awareness level of the respondents on Antenatal care and the second with statements for analyzing the attitude of the respondents based on the UTAUT constructs such as Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behaviour Intention, Self Efficacy, and Attitude.

The instrument developed for the study of the attitude is Attitude towards Using Mobile Phones for Health Services (ATUMPHS) which measured the attitude of the respondents towards using mobile phones for health services through various attitude statements.

The scales are based on the constructs of the UTAUT theory, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behaviour Intention, Self Efficacy and Attitude. The construct statements were developed based on the literature review on studies with UTAUT theory and taking into consideration the characteristics of the Indian society.

The Attitude towards Using Mobile Phones for Health Services (ATUMPHS) consisted of 35 statements measuring the constructs adapted from the UTAUT theory using a 5-point Likert Scale of Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree with scores of 5 to 1(descending order) for positive statements and 1 to 5 (ascending order) for negative statements.

The following items comprised the ‘Performance Expectancy’ scale

- Mobile Phone enables access to pregnancy information
- Mobile Phones helps to contact Health officials during emergencies
- Mobile Phone saves time from travelling long distances
• Though Mobile Phones save time and travel, it is not effective for health services
• Mobile messages influenced me in birth preparedness
• Mobile messages do not make me confident in health services
• Mobile messages motivates me to take medication regularly
• Mobile messages make me aware of complications

The following items comprised the ‘Effort Expectancy’ scale
• Mobile Phones are easy to operate
• No requirement of special skills to use various features of Mobile Phones
• At times Mobile applications are confusing to complete
• Mobile messages coming in Tamil made it easy to understand
• I can read the Mobile messages at my own convenient time
• Content of the Mobile messages are simple to comprehend
• I sometimes tend to doubt the credibility of the Mobile messages

The following items comprised the ‘Social Influence’ scale
• Owning a Mobile Phone is a social status
• Mobile Phones make the interaction easy
• Mobile messages and calls invades privacy

The following items comprised the ‘Facilitating Conditions’ scale
• Health workers find it easy to convey messages through Mobile Phones
• Mobile Phones are more affordable
• Mobile Phones are part of everyday life
• Mobile Phones require no special training to operate
• Connectivity for Mobile Phones are available everywhere
The following items comprised the ‘Behavioral Intention’ scale

- The limits in the Mobile messages length makes it incomplete
- Stored Mobile messages can be referred often
- Mobile Health messages can be recommended to others
- After delivery these Mobile messages will not be of use

The following items comprised the ‘Self Efficacy’ scale

- Everyday usage makes it easier to handle mobile phones
- Unable to use all features of the Mobile Phones
- Mobile Phones make people technologically skillful

The following items comprised the ‘Attitude’ scale

- Mobile Phones are essential in my daily routine
- Mobile Phones are good companion to me
- Mobile Phones influences people to engage in lengthy calls
- I take Mobile Phones everywhere I go
- Mobile Phones make people more addicted to mobile usage

Reliability and Validity of the Scales

A pilot study with a sample of 40 respondents was used for ensuring the reliability and validity of the scales used in the study. The scales were standardized using Reliability test and Factor analysis.

(i) Reliability and Internal Consistency

Cronbachs alpha (α) co-efficients were computed to assess the reliability and internal consistency of the scales measuring key variables. Nunnally (1976) suggest that Cronbachs alpha of 0.60 or greater indicate strong internal consistency as an indicator of the instruments reliability. The variables used in this study show higher coefficients and this is suggestive of good instrument reliability. (Refer Annexure)
(ii) Construct Validity

Factor analysis with principal component analysis (PCA) and varimax rotation was performed to ensure construct validity of the instruments. Comrey and Lee (1992) suggest stringent cutoffs for communalities going from 0.32 (poor), 0.45 (fair), 0.55 (good), 0.63 (very good) or 0.71 (excellent). Higher the score, the items used in the scale represent the variable well. The items in the scale demonstrated the adequacy for validity. (Refer Annexure)

3.4.d In-depth interviews

To add more insight into the findings of the study, few expectant mothers were again instituted with in-depth interviews to share their experiences and opinions on the experience of m Health. In addition, perspectives of the various stakeholders of the healthcare industry was analysed through in-depth interviews with them also. For the purpose of the in-depth interviews, an interview guide for the expectant mothers, Health department officials, Doctors, and the VHNs were used refer annexure. The results of the in-depth interview is collated and presented in the next chapter.

3.5 Hypotheses

The following major null hypotheses were constructed based on the research objectives

H₀₁: There will be no significant difference in the Knowledge level of the respondents on antenatal care between the pre- and post-tests.

Pre-test

H₀₂: There will be no significant influence of the respondents’ age on their pre intervention knowledge levels on antenatal care.

H₀₃: There will be no significant influence of the respondents’ education on their pre intervention knowledge levels on antenatal care.

H₀₄: There will be no significant influence of the respondents’ type of family set up on their pre intervention knowledge levels on antenatal care.
Post-test

H₀5: There will be no significant influence of the respondents’ age on their post intervention response levels on antenatal care.

H₀6a: There will be no significant influence of the respondents’ age on their attitude towards using Mobile Phones for Health services in terms of Performance Expectancy.

H₀6b: There will be no significant influence of the respondents’ age on their attitude towards using Mobile Phones for Health services in terms of Effort Expectancy.

H₀6c: There will be no significant influence of the respondents’ age on their attitude towards using Mobile Phones for Health services in terms of Social Influence.

H₀6d: There will be no significant influence of the respondents’ age on their attitude towards using Mobile Phones for Health services in terms of Facilitating Conditions.

H₀6e: There will be no significant influence of the respondents’ age on their attitude towards using Mobile Phones for Health services in terms of Behaviour Intention.

H₀6f: There will be no significant influence of the respondents’ age on their attitude towards using Mobile Phones for Health services in terms of Self Efficacy.

H₀6g: There will be no significant influence of the respondents’ age on their attitude towards using Mobile Phones for Health services in terms of Attitude.

H₀7: There will be no significant influence of the respondents’ education on their post intervention response levels on antenatal care.

H₀8a: There will be no significant influence of the respondents’ education on their attitude towards using Mobile Phones for Health services in terms of Performance Expectancy.

H₀8b: There will be no significant influence of the respondents’ education on their attitude towards using Mobile Phones for Health services in terms of Effort Expectancy.
H₈c: There will be no significant influence of the respondents’ education on their attitude towards using Mobile Phones for Health services in terms of Social Influence.

H₈d: There will be no significant influence of the respondents’ education on their attitude towards using Mobile Phones for Health services in terms of Facilitating Conditions.

H₈e: There will be no significant influence of the respondents’ education on their attitude towards using Mobile Phones for Health services in terms of Behaviour Intention.

H₈f: There will be no significant influence of the respondents’ education on their attitude towards using Mobile Phones for Health services in terms of Self Efficacy.

H₈g: There will be no significant influence of the respondents’ education on their attitude towards using Mobile Phones for Health services in terms of Attitude.

H₉: There will be no significant influence of the respondents’ type of family set up on their post intervention response levels on antenatal care.

H₁₀a: There will be no significant influence of the respondents’ type of family set up on their attitude towards using Mobile Phones for Health services in terms of Performance Expectancy.

H₁₀b: There will be no significant influence of the respondents’ type of family set up on their attitude towards using Mobile Phones for Health services in terms of Effort Expectancy.

H₁₀c: There will be no significant influence of the respondents’ type of family set up on their attitude towards using Mobile Phones for Health services in terms of Social Influence.

H₁₀d: There will be no significant influence of the respondents’ type of family set up on their attitude towards using Mobile Phones for Health services in terms of Facilitating Conditions.
\( H_{o10e} \): There will be no significant influence of the respondents’ type of family set up on their attitude towards using Mobile Phones for Health services in terms of Behaviour Intention.

\( H_{o10f} \): There will be no significant influence of the respondents’ type of family set up on their attitude towards using Mobile Phones for Health services in terms of Self Efficacy.

\( H_{o10g} \): There will be no significant influence of the respondents’ type of family set up on their attitude towards using Mobile Phones for Health services in terms of Attitude.

3.6 Data Analysis Procedure

Statistical tools including Paired sample t-test, One-way ANOVA, Kruskal Wallis test, Mann-Whitney test and Cross tabulation were used for analysis purposes.

The Paired sample t-test was used for analyzing the differences in the pre intervention knowledge level and the post intervention response levels of the respondents and find if there is a significant increase in the awareness level of the respondents on antenatal care.

One-way Analysis of Variance (ANOVA) was used to find out if age of the respondents will have a significant influence on the pre-intervention and post intervention awareness levels on antenatal care and the attitude towards using mobile phones for health services in terms of UTAUT constructs such as Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behaviour Intention, Self Efficacy, and Attitude.

The Kruskal Wallis test was used to find out if education of the respondents has a significant influence on the pre-intervention and post intervention awareness levels on antenatal care and the attitude towards using mobile phones for health services in terms of UTAUT constructs such as, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behaviour Intention, Self Efficacy, and Attitude.

The Mann Whitney test was used to find out if type of family set up of the respondents has a significant influence on the pre-intervention and post intervention
awareness levels on antenatal care and the attitude towards using mobile phones for health services in terms of UTAUT constructs such as, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behaviour Intention, Self Efficacy, and Attitude.

The responses of the respondents of the in-depth interviews are collated to understand the attitude towards using mobile phones for health services in terms of UTAUT constructs such as, Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Behaviour Intention, Self Efficacy, and Attitude.

Cross tabulation was used to find out if the demographic variables of age, education and type of family set up has a significant influence on the mobile phone usage pattern of the respondents including items such as ownership of mobile phones, number of years of mobile phones usage, ability to operate various features of mobile phones, their sources of health information, their interests in various areas of m Health, and preferred mode of delivery of health contents.