CHAPTER 4

METHODOLOGY

The study was approached from both qualitative and quantitative methods. The components of the research, the design of each component, and the process are shown in Table 4.1. In order to identify the various dimensions and determinants of trust in physicians, a qualitative study was conducted. To further validate the construct, a sample survey was done and various statistical analyses were applied to validate the construct. This was used to develop a psychometric instrument to measure trust in physicians. This instrument was further validated. Apart from this, a survey was also conducted among health care providers to understand their perceptions of trust in physicians.
<table>
<thead>
<tr>
<th>Phase of Study</th>
<th>Study Objective</th>
<th>Specific Objective</th>
<th>Study Design</th>
<th>Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>To understand the concept of trust in physicians in developing health care settings</td>
<td>To explore the dimensions and determinants of trust in physicians</td>
<td>Qualitative Study</td>
<td>In depth interviews among 35 respondents</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To quantify and validate the identified dimensions and determinants of trust in physicians</td>
<td>Quantitative sample survey</td>
<td>Questionnaire administration on a sample of 616 adults</td>
</tr>
<tr>
<td>Phase 2</td>
<td>To develop and validate a scale to measure trust in physicians</td>
<td>To test the psychometric properties of Anderson and Dedrick’s Trust in Physician Scale</td>
<td>Quantitative sample survey</td>
<td>Community based and Hospital based sample survey</td>
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<tr>
<td></td>
<td></td>
<td>To develop a new trust in physician scale using classical and item response theories</td>
<td>Quantitative sample survey</td>
<td>Classical test analysis and Item Response analysis</td>
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<td>To validate the new trust in physician scale</td>
<td>Quantitative sample survey</td>
<td>Administration of trust in physician scales and identifying its ability to discriminate people who have trust and those who do not</td>
</tr>
<tr>
<td>Phase 3</td>
<td>To identify factors perceived by health providers to influence trust in physicians</td>
<td></td>
<td>Quantitative sample survey</td>
<td>Questionnaire based survey among 200 health care providers</td>
</tr>
</tbody>
</table>
4.1 STUDY SETTING

All parts of the study were done in Tamil Nadu, one of the states in south India. India has a large public health system which runs through decentralized state budget allocation. With the advent of the National Rural Health Mission, a flagship health system strengthening program of the government of India in 2005, the public health system received a fillip in terms of decentralization, better platforms for community engagement with health care, better accountability mechanisms and greater fund allocation.[91] Alongside this strong public health system there is also a powerful private sector in health care. Private health providers, who deliver health care services for a fee, are the highest contributors to health services in India. There is a growing corporate health industry in the metropolitan cities which provide international quality health services not only to the people in the country but also serve as hubs for health tourism. In addition to the private and public health systems there is a big network of unorganized, unqualified medical practitioners providing all levels of health care.[92] The overall health expenditure is about 4% of the Gross Domestic Product (GDP) and the government budget allocation for health care is less than 1% of the GDP.[93] The remaining health expenditure is largely out of pocket. This leads to significant impoverishment and catastrophic health expenditure is one of the commonest reasons for indebtedness in the country.[94]

The public health system is plagued by system inefficiencies, irregularities, corruption and irrational health practices. The private providers largely remain unregulated and there is high prevalence of irrational care and commoditization of health care. Tamil Nadu is one of high performing states in India with respect to health indicators. It has one of the well-functioning models of health care in the country but still several pockets especially poor rural areas and migrant urban populations remain largely
underserved.[95] The inefficient public health system, burgeoning private health care, rising cost of health care, irrational and unregulated practices make the study setting very different and unique from the other countries from where studies of trust in health care have previously emerged. Henceforth we will refer to these health settings as developing health systems.

4.2 ETHICAL CONSIDERATIONS

The Institutional Ethics Group assessed the study protocol and identified minimal ethical risks. They submitted the protocol to the Institutional Review Board and Ethics Committee of the School of Public Health, SRM University registered under the Office for Human Research Protections (OHRP) of the United States Department of Health and Human Services (USHHS). The committee reviewed the study protocol and approved the study. Since the ethical risks were minimal and since obtaining a written informed consent may deter participants from openly discussing some sensitive issues related to the physician-patient relationship, the committee approved that a verbal informed consent be obtained from all participants in both the qualitative and quantitative components of the study.

4.3 PHASE 1: EXPLORATION OF THE CONCEPT OF TRUST

The qualitative study was done to assess the various dimensions and determinants of trust in physicians as perceived by the community. Dimensions of trust are those components which formatively or reflectively form the construct of trust, whereas determinants are factors which influence whether a patient has high or low trust.
This study aimed at assessing the differences between the dimensions and determinants of trust in physicians which has been previously described in developed health care settings compared to the status in developing health systems like the study setting.

### 4.3.1 Study Participants

Thirty-five in-depth interviews were conducted, fifteen among migrant construction workers in and around Chennai, a metropolitan city in Tamil Nadu and sixteen among residents of a rural area in Dharmapuri district of Tamil Nadu and four interviews among primary care doctors catering to the health needs of these participants. Migrants and marginal rural farmers represent the extremes of the marginalized communities. Therefore themes that emerge from their interviews are likely to shed more light on the aspects of trust in health care in settings with severe resource deprivation.

The migrant construction laborers hail from various parts of India, largely from the states of Orissa, Uttar Pradesh and Jharkhand. They are marginalized because of language barriers, migrant status and poor living conditions. Health access to these migrant construction laborers is very poor. Dharmapuri is one of the districts of Tamil Nadu with poor health indicators. In the surveyed villages the people are agricultural laborers and marginal farmers. In many households the men and women of economically productive age group migrate outside the village to urban areas for work. Since Dharmapuri is a border district in the border between Tamil Nadu and its neighboring state Karnataka, public services are compromised. Though the state of Tamil Nadu has some of the best health indicators in the country, Dharmapuri is among the poor performing districts of Tamil Nadu.
4.3.2 Interviews

In depth interviews were selected as the methodology for collecting data as the procedure is the most appropriate to gain insights into individual life experiences, trust, and meaning ascribed to trust.[96] The findings are representative of the meanings and experiences of those interviewed. It is highly meaning centric and cannot be generalized to the population. A trained interviewer conducted all the interviews. The construction laborers were approached in their place of residence and the rural participants were interviewed during their visit to primary health centers in their respective villages for health care. The interviews in the rural area were conducted in Tamil language and the interviews with the migrant workers in Hindi. The interviewer started talking to the respondents about health and their perceptions of health. Then the interviewer led the interview towards illness, treatment seeking and choice of health facility. This was followed by discussion about trust in health care. The various aspects of trust, what makes people trust the doctors and what makes people lose trust were explored during the interviews. The interviews last between 30 to 45 minutes each, with some interviews extending up to 2 hours. The interviews were not recorded to prevent the respondents from becoming self-conscious, which often happens among marginalized communities who have an inherent mistrust for research. [97] Notes were taken during the interviews by the interviewer.
4.3.3 Coding and Analysis

QSR Nvivo software package version 7 was used for coding and analysis of the interviews.[98] The researcher read the notes several times and chose three information dense interviews. These interviews were coded by the researcher. The codes were verified and validated by a second researcher after discussions. Following this a coding manual was prepared with detailed descriptions of the codes. The remaining interviews were coded using this manual by the researcher. Due to the lack of availability of researchers trained in qualitative data analysis in the team, a third coder could not be engaged. In order to ensure an unbiased third set of coding and to have a fresh re-look at the data set for new perspectives, the researcher re-opened the data after a gap of 1 month and redid the coding of the interviews. The differences between the initial coding and recoding were identified and discussed with the second researcher till a consensus was arrived at. The codes were then grouped together into meaningful themes. The identification of themes was largely grounded in the data. But the influences of previous themes present in literature on the identification of these themes cannot be precluded. The main themes and their interrelationships were assessed based on the interviews. After identifying the themes, the conceptual framework was developed and discussed between the primary and second researcher.

The researcher is a medical doctor by training and so in some of the early interviews could have brought the bias into the interpretation of the results. For example, in some of the early interviews when negative behaviors of doctors and health personnel were pointed out, the researcher felt defensive and this could have expressed in his body language and influenced the way the interview proceeded. A reflexivity journal was maintained by the researcher in which he reflected on the way certain statements of the
respondents were interpreted and the possible alternative interpretations. These were reflected upon and appropriately addressed as memos during the analysis.

4.4 PHASE 1: EXPLORATORY SURVEY

The quantitative survey was conducted to confirm the dimensions and determinants of trust in physicians obtained in the qualitative study. The main aim of this study was to validate the various dimensions and determinants obtained in the qualitative study and to segment the community based on the factors that influence trust in physicians.

4.4.1 Study Participants

A sample of 625 adults living in four districts of Tamil Nadu was selected by a multi stage sampling methodology. The sample size was calculated according to the heuristics for sampling in multivariate modeling that there should be at least 20 observations per variable of analysis. [99] Four districts were first selected by simple random sampling method from the 32 districts of Tamil Nadu. Two of these districts were predominantly urban and two were predominantly rural. Three urban wards and eight rural blocks were selected from each district by probability proportion to size method. From each selected block / ward, 50 individuals, who reported having a regular primary care physician, were randomly interviewed for the study. Table 4.2 shows the sampling strategy followed in the study.
Table 4.2: Samples selected for the household survey on trust in physicians

<table>
<thead>
<tr>
<th>S.No</th>
<th>District</th>
<th>Block</th>
<th>Type of Area</th>
<th>Villages</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tiruvallur</td>
<td>Sozhavaram</td>
<td>Rural</td>
<td>Aangadu</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Urban Sozhavaram</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rural</td>
<td>Panchetti</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rural</td>
<td>Kummanur</td>
<td>50</td>
</tr>
<tr>
<td>2</td>
<td>Kancheepuram</td>
<td>Tirukazhukundram</td>
<td>Rural</td>
<td>Karumarapakkam</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rural</td>
<td>Nerumbur</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rural</td>
<td>Irumbulicheri</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rural</td>
<td>Naduvakkara</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>Dharmapuri</td>
<td>Palacode</td>
<td>Urban</td>
<td>Palacode</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rural</td>
<td>Mannadi</td>
<td>50</td>
</tr>
<tr>
<td>4</td>
<td>Chennai</td>
<td>-</td>
<td>Urban</td>
<td>-</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TOTAL</td>
<td>625</td>
</tr>
</tbody>
</table>

4.4.2 Questionnaire Development

Based on the dimensions of trust that were identified in the qualitative study described previously, items were generated to address each of the dimensions.

Factors that influence trust in physicians were also identified from the qualitative study and questionnaire items developed from these factors were included in the questionnaire.
The questionnaire items were circulated to ten people, three physicians, two public health professionals, and five lay persons to get their opinion on the face validity of the questionnaire. They were asked to rate each question on a scale of 1 to 5 on the extent to which they represent the dimensions and determinants of trust in physicians with score 1 being least representative and 5 being most representative. The items which scored least were removed from the final scale. The questionnaire was developed in English and translated to the local language Tamil by the researcher. A neutral third person back translated the Tamil version of the questionnaire to English. This back translated version was checked for validity of the translation. Appropriate changes to the translation were made to ensure linguistic validity of the questionnaire. The final version of the questionnaire in Tamil and English are shown in the Annexures 1 and 2. The face validation scores of the items is shown in Annexure 3.

4.4.3 Data measurement

The selected participants were requested to answer the questions based on the primary care physician that they trusted the most for their minor ailments. They answered the questions on attributes of trust with respect to this physician. Further they also answered questions on the various factors influencing trust with respect to this physician. For example, the interviewer would state “I get the confidence that all my illness will get alright when I go to the doctor” (domain – perceived competence), “The doctor gives appropriate medications for my diseases” (domain – perceived competence) reflecting attributes of trust. The interviewer would state “the doctor explains to me clearly about the illness and its treatment” (domain - physician behavior), “I do not have any inhibitions with him/her” (domain - comfort). The respondents rated the statements on a five point Likert scale between “Strongly agree” to “Strongly disagree”.
4.4.4 Bias reduction

Hospital based sampling was avoided. The researcher administered the questionnaires along with two other trained investigators. Though the researcher is a physician by profession, this was not made explicit to the respondents during the interviews in order to avoid reporting bias. By using a standardized questionnaire and standardization of the questionnaire administration process, the chance of interviewer bias was controlled.

4.4.5 Statistical analysis

Factor and Cluster Analysis

The data was managed using SPSS Statistics version 17.0.1. Simple descriptive statistics such as frequencies of discrete variables, means and standard deviations of continuous variables were computed using the software package. Factor analysis was used to identify the components of factors influencing trust in physicians. Hierarchical cluster analysis with the factor scores was used to determine the number of clusters that the sample could potentially be segmented into. Finally the factor scores were used to segment the respondents into groups by k-means cluster analysis. The characteristics of each segment were identified using descriptive analysis.

Structural Equation Modeling

In order to validate the conceptual framework obtained in the qualitative study, a hypothetical model was fit based on this framework. This included trust in physicians as the key latent variable. Twelve relevant items indicating ‘perceived
competence’, ‘treatment assurance’, ‘confidence’, ‘respect’ and ‘loyalty’ domains of trust were included as reflective variables contributing to the latent variable trust. Factors influencing trust in physicians were further added to the structural model as independent latent variables contributing to the dependent latent variable ‘trust in physicians’. These factors were ‘shared identity’, ‘behavior of the physician’, ‘personal involvement of physician’ and ‘comfort with the physician’. Other variables such as age, sex, education, occupation and area of residence were also included in the model as endogenous variables.

Before conducting the measurements, important assumptions of structural equation modeling were considered. Conditions for causality were not met in this data as it was a cross sectional assessment and temporality was not demonstrated. Only the factors which were identified in the qualitative exploration were included in the model. Other confounding variables or unknown factors could be involved in the model, which were not identified or included. The direction of the proposed causal relationship is also not exclusive. For example, it is possible that comfort levels would increase trust and at the same time increased trust could also contribute to greater comfort levels. Despite these limitations in the conceptual assumptions of the structural equation modeling, the model was fit to explore hypothetical associations. Nevertheless these limitations have to be borne in mind while interpreting the results. The data was in an ordinal Likert type scale. It was assumed to be continuous for analysis purposes. The variables were checked for normality and linearity. Based on the acceptable skewness and kurtosis values suggested by West et al for fitting structural equation models with non-normal data, the model was assumed to be normal.[12] The model fit statistics were computed with this assumption of normality. The Standardized Root Mean Square Residual (SRMR), Root Mean Square Error Approximation (RMSEA), and Comparative Fit Index (CFI) were used to assess model fit. SRMR of less than 0.09, RMSEA of less than 0.06 and CFI of more than 0.90 were considered as adequate model fit criteria.[13] To get more robust regression estimates bootstrapping was done and the confidence intervals of the estimates
were calculated using the bias corrected percentile method. The Bollen-Stine bootstrap model fit chi square was also calculated to further test for model fit. After the construction of the structural equation model two measures were adopted to improve the model fit. Firstly variables which did not contribute significantly to the factor, both conceptually and statistically were sequentially removed. Secondly meaningful error covariance were introduced between variables in the same factor based on modification indices reported by the program.

4.5 PHASE 2: PSYCHOMETRIC STUDY

Following the understanding of the dimensions and determinants of trust in physicians using qualitative and quantitative assessments, a series of studies were conducted to develop and validate a scale to measure trust in physicians in the local context. The Anderson and Dedrick’s Trust in Physician Scale which has been extensively used previously, has been validated in the Western context. Studies were done in a community and hospital based settings in Tamil Nadu to understand the validity and reliability of this scale.

4.5.1 Validation of a preexisting Trust in Physician Scale in a Hospital based setting

The first study was done in a medical college teaching hospital in Kancheepuram district of Tamil Nadu in order to validate the Trust in Physician Scale of Anderson and Dedrick.[5] The hospital has multiple specialties and caters to people in and around Kancheepuram district. Patients attending the hospital come from both urban and rural settings. Two questionnaires were used for data collection. One was the Trust in
Physician Scale which has items assessing the level of trust in physician and the other General Trust Scale which assesses the general trust orientation of individuals.[5,101] Both these scales have statements which the respondent is asked to rate in a Likert scale of 1 to 5 where 1 stands for “strongly disagree” and 5 stands for “strongly agree”.

All adult patients aged 18 and above in the hospital waiting area who were waiting to see the doctors in the Internal Medicine, General Surgery, Obstetrics and Gynecology outpatient units were eligible to participate in the study. Patients who were in severe distress and in emergency situations were not included. The sample size was fixed at 310 based on previous studies on questionnaire validation and guidelines of sample size for survey research.[99]

The tools were translated to Tamil, the local vernacular. Then it was back translated to English by an uninvolved third person to check validity of translation. The English and Tamil versions of the Trust in Physician Scale and the General Trust Scale are provided in Annexure 6 and 7 respectively. Informed consent was obtained from the participants before the study. The respondents were provided adequate privacy for answering the questions and they were assured that their treatment in the hospital will be independent of the responses that they provide to the questionnaire. The researcher, who was not part of the hospital treatment team, administered the questionnaire in Tamil language and gave the respondents enough time to think and answer each question. After the respondent gave the answers, they were noted down by the researcher. The overall Trust in Physician score and General Trust score were computed by adding the scores for individual items. The Trust in Physician score and General Trust score were categorized using the median score. People with high and low trust were those who scored above and below the median respectively.
The collected data were entered into Epi Info version 3.5.3. Validation of the data entry was done by a random check of questionnaires and data base for 10% of the sample. The data was exported to SPSS version 17 for further analysis and cleaned. Simple descriptives and frequencies were computed. Exploratory Factor Analysis was done using Principal Component Extraction and Varimax Rotation methods for the Trust in Physician Scale to study its construct validity. Cronbach’s alpha was calculated for assessing internal consistency of the Trust in Physician Scale. The association between the scores in the Trust in Physician Scale and the General Trust Scale was studied to test if there is a concurrence between the two measures.

4.5.2 Validation of a preexisting Trust in Physician Scale in the community based setting

This cross sectional household survey included men and women above 40 years of age who may or may not be suffering from any illness during the time of study but have visited a physician at least once during the past 5 years. Since healthy people, who are not in a state of vulnerability in terms of health, are more likely to be capable of thinking about trust in a conscious, calculative fashion they were chosen for the study.[102] Assuming 50% prevalence of Patient–physician trust in rural Tamil Nadu with 10% allowable error, the sample size of 120 was calculated but only 112 samples responded giving a response rate of 93.3%. Multistage random sampling method was used. Tamil Nadu, a state in the southern part of India is divided into 32 districts. Kancheepuram is a district in the northeastern part. Kancheepuram district is divided into 13 rural development blocks. One of the blocks, Thirukazhukundram was selected by simple random sampling from the list of blocks. From the list of villages in that block, eight villages were selected by simple random sampling. From the selected villages 14 samples each were selected based on eligibility criteria. Trust in Physician scale [103] which was further modified by Thom et al in 1999 was used for measurement of patient
physician trust in this study. The scale covered questions pertaining to the domains of physician dependability, reliability of the information provided by the physician and confidentiality and competence of the physician. The scores for each respondent were totaled to give a maximum possible score of 55 and minimum of 11. The median score was taken and all those with scores above the median were classified as those with high trust and those with scores below the median as those with low trust. Socio-demographic variables such as age, gender, education (no formal education vs. any education), self reported health status, basis of choice of physician (having a choice vs not having a choice), time spent with physician (< 10 mins vs more than 10 mins), physician characteristics such as age, gender and type of practice (Allopathy vs. complementary medicine) which are likely to be associated with trust in physician and satisfaction with care were analyzed using the Fisher exact test. Simple linear regression analysis was done to assess the relationship between patient satisfaction and physician-patient trust. Exploratory Factor Analysis was performed to assess the construct validity of the trust in physicians scale.

4.5.3 Development and Validation of a new Trust in Physician Scale

The data collected for the quantitative community survey was used for this purpose. The method of data collection has been described previously. The data was managed using SPSS Statistics version 17.0.1, IBM SPSS Amos version 20 and Item Response Theory for Patient Reported Outcomes (IRTPRO) version 2.1.[100,104,105] All the 31 items in the questionnaire relating to the dimensions of trust in physician were assessed in this analysis. Classical test analysis of the items was done by performing internal consistency test using Cronbach’s alpha, item-to-total correlation and inter-item correlations. Confirmatory factor analysis (CFA) was done to assess dimensionality of selected well performing twenty two items from the total of thirty one. Standardized Root
Mean Squared Residuals (SRMR) of less than 0.08, Comparative Fit Index (CFI) greater than 0.95, Tucker Lewis Index (TLI) greater than 0.95 and Root Mean Square Error Approximation (RMSEA) less than 0.06 were used for assessing fitness of the CFA model. [106] Local dependence was checked by performing the bifactor LD-X^2 values considering a value of greater than 10 to indicate local dependence. [107] After confirming unidimensionality and local independence, Samejima’s Graded Response Model was fit for the selected 22 questions. [108] Two models were fit, a one parameter logistic model (1PL) and a two parameter logistic model (2PL). The Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC), and -2log likelihood were computed for the two models.[109] Based on assessment of the classical test properties and the item parameters, a final scale was identified selecting the optimally performing items.

For further predictive validation of the scale a study was done to assess the ability of the new trust in physician scale to classify individuals as trusting and non-trusting of their physicians. An urban residential area in Chennai, Tamil Nadu was randomly selected for the study. From a random start in this area, every fifth household was chosen till a total sample of 234 households was obtained. In the first sampled household one adult respondent was randomly selected and asked to think of a doctor whom they trusted most and respond to the trust in physician questionnaire based on this doctor. In next sampled household the respondent was asked to think of a doctor whom they did not trust and respond to the trust in physician questionnaire based on this doctor. If a particular household did not have any adult respondents available, was locked or refused to participate in the study, the household was not replaced. Apart from the trust in physician questionnaire, basic demographic information was also collected. Independent t test was done to assess the difference in the mean scores for each item between the trusting and distrusting groups. A discriminant function model was fit to assess the
effectiveness of the classification of the trusting and distrusting groups based on the questionnaire.

**4.6 PHASE 3: UNDERSTANDING THE PROVIDER’S PERSPECTIVE OF FACTORS INFLUENCING TRUST IN PHYSICIANS**

In order to understand the perceptions of health care providers on factors influencing trust in physician a study was done in Kerala, the state neighboring to Tamil Nadu, where the perspectives of health care providers was studied. The study was done in seven healthcare facilities, hospitals, clinics, and community health centres in Ernakulam and Trivandrum districts of Kerala. The samples for the study included doctors belonging to different specialties, dentists, nurses, pharmacists, and paramedical staff.

The instrument used for data collection was a questionnaire which was prepared specifically for the purpose of the study. For the ease of data collection both English and Malayalam versions of the questionnaire were used. The instrument aimed at assessing the perception of healthcare providers regarding their own trustworthiness. The respondents were asked to provide their basic information including age, gender designation, type of hospitals where they work, degrees they hold and their years of experience. It was followed by a research question- “When do you think that the patient will trust you more?” The respondents were given a questionnaire containing 62 statements and were asked to rate their perceptions in a 3 point Likert scale of 1 to 3 where 1 stands for “agree”, 2 stands for “neutral” and 3 stands for “disagree”. The statements were representing various domains of the theme -trustworthiness. The questionnaires in English and Malayalam are attached in Annexures 4 and 5.
All healthcare providers who were currently working in any preventive or
curative settings were eligible to participate in the study. The sample size was fixed at
200 for sake of convenience. Written informed consent was obtained from the
participants before the study. The respondents were provided adequate privacy for
answering the questions and they were assured that their responses would be kept
confidential. The researcher, who was not part of the hospital treatment team,
administered the questionnaire in Malayalam language or English language and gave the
respondents enough time to think and answer each question. After the respondent gave
the answers, they were noted down by the researcher.

The data was managed using SPSS Statistics version 17.0.1.[100] After the
data cleaning, only 188 complete samples were selected for further analysis as the
remaining 12 questionnaires had more than 20% missing responses.