

## **CHAPTER III**

### **RESEARCH METHODOLOGY**

#### **Research Design Method**

##### **3.1. Research Questions**

1. What is the current status of Continuing Professional Development in the field of Dental Education in Gujarat?
2. What are requirements of general dental practitioners for their Continuous Professional Development?
3. What role does CPD play and how effective are these programs? To what extent they benefit dental surgeons?
4. What are the standards and criteria for recognition of CDE programs?
5. What are the quality issues in conducting these CPD programs?
6. What are the standards, criteria and quality issues globally, which can be reformulated to help Indian dental surgeons?

##### **3.2. Objectives**

1. To find out the current status of Continuing Professional Development in the field of Dental Education in Gujarat.
2. To identify the Continuing Dental Education requirements of the dental practitioners in Gujarat.
3. To correlate the current status of the Continuing Dental Education program with the Global Standards/Guidelines with a view of identifying the gaps.
4. To develop the APPROPRIATE Recommendations/GUIDELINES for planning, regulation and accreditation of CPD programs.

### **3.3. Methodology**

#### **3.3.1. Research Design**

The Research Design is analytical Cross-sectional survey design to analyze the status of Continuing professional development among the section of general practitioners of Gujarat using Open and Closed Ended Questionnaires.

#### **3.3.2. Source of the Data:**

##### **Population:**

The Dental Practitioners practicing in the state of Gujarat were the population for this research.

##### **Sample:**

700 dental practitioners selected from the total registered practicing population of dentists in Gujarat using snowball sampling method.

#### **3.3.3. Selection Criteria:**

##### **i. Inclusion Criteria:**

- Practicing dentists registered with the Gujarat State dental council
- Dentists practicing in state of Gujarat

##### **ii. Exclusion Criteria:**

- Practitioners who are unwilling to participate in the study.

#### **3.3.4. Tools for the study:**

- i. A mix of open ended and closed ended questionnaire form for practitioners regarding the CPD for checking Validity and Reliability of the tool.
- ii. A further refined and validated printed closed-ended questionnaire for the dental practitioners for the larger group
- iii. An open-ended interview and online communication with experts to know their views on the current status of CPD and future directions.

### **3.3.5. Procedure for Information Collection**

The research study comprised of the questions regarding the views, opinions and preferences of the practitioners like skill, knowledge and service regarding the CPD.

The study was conducted in phases:

#### **1. Pilot Survey:**

A mix of the open-ended and closed-ended questionnaire was administered to the mixed population of general practitioners, dental educators and administrators. The purpose of this phase was formulation and finalization of the questionnaire along with checking for the validity and reliability of the questionnaire.

The sample size for this phase was 32 participants. The said questionnaire was circulated with a mixed format of questions. The completed questionnaire was collected back and evaluated for validity and reliability. Some open-ended questions like “What specific subjects for CDEs are of interest to you?” were personally evaluated to arrive at the close-ended questions. The most frequently given answers were shortlisted and were added as options for closed-ended questions.

The reliability of the questionnaire was evaluated using the Cronbach’s Alpha. Minimum value of Cronbach’s Alpha was 0.935, which is nearer to one. Hence the scale was found to be reliable. Reliability of the scale is more than 90%.

The validity of the tool was evaluated by using the Student t test. There is no statistically significant difference in mean scores given by respondents and experts ( $p$ -values  $> 0.05$ ). Hence it can be concluded that the scale has concurrent

validity. For more accuracy, subject experts also validated the content of this scale. Hence it is also content validated.

Thus, present scale was reliable and validated.

## **2. Final Survey**

The refined questionnaire from the phase 1 was used for the second phase of the study. Few of the open-ended questions from the phase 1 questionnaire were converted into the closed ended questions.

This phase was having a mixed population of general dental practitioners who have done only bachelors and who have done masters. There was a random distribution of the practitioners in urban as well as rural setup. The questionnaire used for this stage was checked for the Validity and Reliability. The final questionnaire survey was sent to the dental fraternity by email through the Google forms as well as distributed physically at various gathering like conferences, meetings etc. The filled questionnaires were collected back and checked. The improper and incomplete forms were discarded and the final 700 forms were considered for the data analysis as against the sample size of 300 as decided during the initial phase of research.

## **3. Experts Views**

In this phase the views of the dental educators, administrators and subject experts was sought through email or personal interaction to get their opinion regarding the current status and future directions of the CPD in India.

#### **4. Recommendation:**

The results of the research was compiled and analyzed to understand the gaps, if any, in the current scenario. The guidelines and recommendations in other countries were also taken into consideration while framing the appropriate guidelines for Indian scenario.

#### **3.4. Nature of Data and Data Analysis Techniques:**

##### **Nature of Data:**

Quantitative detective data was obtained from the closed ended questions which we are the part of which were collected from the general practitioners. The qualitative data was obtained from few of the open ended questions in the questionnaire administered to the general practitioners. The open ended questions were asked from the administrators of dentistry and the senior experts in the field of dentistry.

##### **Data Analysis Techniques:**

The data collection tool was validated through a pilot study. The reliability of the tool was evaluated using Cronbach's Alpha and Validity using the Student t test. The main data was analyzed using frequency distribution and cross tabulation. The cross tabulation was carried out among the variables describing the continuing professional education and various socio-demographic variables. The chi-square test of association was applied in these cross tabulations to analyze the association between the variables describing the continued professional education and socio-demographic variables.