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Chapter 3

Methodological approaches towards evaluation of school health initiatives

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3.0 Introduction

This chapter is primarily concerned with the procedures of research adopted in this study; the operational definitions of variables selected, the criteria and techniques adopted for selecting the sample. The procedures of development and standardization of research tools are also dealt with. The description and administration of the research tools along with the procedure followed for the analysisof the data are discussed.

3.1.0 Statement of the Problem

A majority of children in the world now attend primary school, which meansthat they spend a good part of their time within school environments during critical stages of their development. A healthy school environment can directly improve children's health and their potential for learning, and thereby contribute to the development of healthy adults who will be skilled and productive members of society.(Creating a Healthy School Environment, UNESCO 2003).

Schools play an important role in children's health outcomes as stated in Healthy Schools, Healthy Children, Healthy Futures: The Role of the Federal Government in Promoting Health Through the Schools (Cohen et al., 1992). The critical role of educators and schools is also emphasized in Schools and Health: OurNation's Investment (Allensworth, Wyche, Lawson, & Nicholson, 1997).

Healthy children are more effective learners - "a student who is not healthy isa student who will not profit from the educational process" (Michael McGinns, cited

in Allensworth & Kolbe, 1987). Marx (1998) stated that "educational reforms will beeffective only if students' health and well-being are identified as contributors to academic success and are at the heart of decision and policy making" (p. 293). Considering the various research studies that emphasize that health can be promoted effectively through schools, an effort has been made to study the school health environment and health services and the problem has been precisely stated as “An investigation into School Health Environment and School Health Services in Primary Schools of Hyderabad District”.

3.2.0 Aim

The aim of this study is to study the ground realities and move towards evolving a comprehensive framework for school health policy as well as depict a meticulous, multi-stakeholder perspective of the school health environment and school health services in the primary schools of Hyderabad.

3.3.0 Objectives of the study

The study is conducted keeping in mind the following objectives:

- To study whether the schools of Hyderabad city have healthful school environment.
- To examine the school health services in the elementary schools ofHyderabad city.
- To understand opinions of teachers about school health environment and school health.
- To study the perceptions of students about school health environmentand school health.
- To evolve necessary recommendations for promoting healthful school environment and provision of adequate school health services.

3.4.0 Hypothesis

The following hypotheses are formulated for the study:

- There is a significant difference between Government and Private primary schools with respect to School Health Environment.”
- There is a significant difference between Government and Private primary schools with respect to School Health Services”.

3.5.0 Definitions and Clarification of Terms

Since the terms such as school health environment, school health services, school health policy, school emergency care and perceptions are central to the presentstudy; it was felt necessary to provide their definitions and clarifications.

3.5.1 School Health Environment

School Health Environment is defined as "A safe, clean school facility, adequately lighted and ventilated and free from toxic substances and violence." (Breckon J Donald et. al, 1998). The American Academy of Paediatrics (1993) defines a "healthful school environment" as "one that protects students and staff against immediate injury or disease and promotes prevention activities and attitudes against known risk factors that might lead to future disease or disability".

Table 3.1: Components of School Health Environment

Adapted from WHO Information Series on School Health, 2003

Provision of Basic Necessities	• Shelter • Water • Food • Light • Ventilation • Sanitary facilities • Emergency medical care
Protection from Physical Threats	• Molds • Unsafe or insufficient water • Unsafe food • Vector-borne diseases • Rodents and hazardous insects • Other animals (e.g. dogs)
Protection from Physical Threats	• Traffic and transport • Injuries
Protection from ChemicalThreats	• Air pollution • Water pollution • Cleaning agents

School health environment is also synonymously used as healthful school environment in various textbooks and related literature. A healthful school environment in this study includes the physical environment of the school which

encompasses the school building and all its contentsincluding physical structures, infrastructure, furniture, and the presence of any chemical or biological agents It also includes the site on which a school is located and the surrounding environment, i.e., the air, water, and any materials with which children may come into contact, as well as nearby land uses, roadways and otherhazards. The following table reflects the components of a healthful schoolenvironment.

3.5.2 School Health Services

School health services include examinations and procedures necessary to determine the health status of each child, the follow-up of children to get defects corrected, prevent and control of common diseases, provide first aid in emergency andrefer those who need specialized treatment. (J. Pronezuk-Gargino WHO 2005). School health services are services provided for students to appraise, protect and promote health. These services are designed to ensure access and/or referral to primary healthcare services, foster appropriate use of primary healthcare services, prevent and control communicable disease and other health problems, provide emergency care for illness or injury, promote and provide optimum sanitary conditions for a safe school facility and school environment, and provide educationaland counselling opportunities for promoting and maintaining individual, family, andcommunity health. Qualified professionals such as physicians, nurses, dentists, healtheducators and other allied health personnel provide these services. (National Conference of State Legislatives, USA 2001).

3.5.3 School Health Policy

Policy is often recognized as being a set of regulations, rules or procedures. Policy can also refer to a set of decisions or intended actions. The following words can be used interchangeably with the term policy: rules, regulations, procedures, guidelines, principles. Examples of this sort of policy include what to do in the event of a fire in the school or that the school is committed to providing comprehensive health and physical education as a key component of the educational experience for the students or that our school acknowledges its responsibility to provide a healthy learning and working environment for its students, staff and other school visitors (www.chdf.org). Vision and mission statement of the institutions provide direction in formulating the school health policy.

3.5.4 School Emergency Services

The term “school emergency services” in this study is used to refer to the services offered by the school in case of accidental fire due to short circuit or storage of

inflammatory material and severe injuries to students during play or crossing the road. As primary children are not aware about the danger of playing near unsafe structures and often indulge in physical activities like running & jumping, it is more likely that they may injure themselves very seriously and in such cases emergency services to save their lives becomes essential. Similarly, in case of fire, there should be provision of water supply and other facility like fire extinguishers. Emergency services form more of a management strategy to save children during incidents of fire and accidents.

3.5.5 Opinions

According to Wikipaedia (The free online-dictionary 2008), an opinion is a belief that may or may not be backed up with evidence, but which cannot be proved with that evidence. An opinion is neither right nor wrong. It is normally a subjective statement and may be the result of an emotion or an interpretation of facts; people may draw opposing opinions from the same facts. Webster's New World College Dictionary 2005, defines 'Opinion' as a belief not based on absolute certainty or positive knowledge but on what seems true, valid or probable to one's own mind. Opinion also means an evaluation, impression or estimation of the quality or worth of a person or thing.. In this study, effort has been made to elicit opinions of teachers regarding school health environment and school health services.

3.5.6 Perceptions

Perception is defined by Business dictionary.com, 2009 as a process by which people translate sensory impressions into a coherent and unified view of the world around them. Though necessarily based on incomplete and unverified (or unreliable) information, perception is 'the reality' and guides human behaviour in general. Mosby's Medical Dictionary, 8th edition. 2009, describes Perception as the conscious recognition and interpretation of sensory stimuli that serve as a basis for understanding, learning, and knowing or for motivating a particular action or reaction. An attempt has been made to understand the perception of the students and to capture their thoughts, ideas and imagination about school health.

3.6.0 Research Design

The study followed a quantitative research approach using an explorative and descriptive design. Quantitative research seeks to answer questions of how much and how many and is concerned with relationships (especially causal relationships) between variables (Polit and Beck 2004; 169). It often takes the form of experiment, quasi-experiment or non-experimental design.

Non-experimental design is used where some of the independent variables are amenable to manipulation. Non-experimental design includes descriptive research that investigates situations and relationships in variables without manipulation of independent variables (Polit and Beck 2004: 198). The survey method is a non-experimental approach whereby a group of people or a community is investigated. The advantage of the survey is that it offers insight into the situation studied (Varkevisser et al 1991: 148). In this study, the survey method was used. It provided information that made it possible to gain insight into the various factors that shape the opinions of teachers and students about school health environment and school health services.

The exploratory design allows the use of questionnaires distributed to a large sample of the population and is therefore intent on finding facts which relate to the field of study (Couchman and Dawson 1995:40). This is very important, especially since no previous studies were done in Hyderabad on school health environment and school health services.

According to Struwig and Stead (2001:7) and Polit and Hungler (1989:19), exploratory research probes more by allowing for an in-depth exploration of dimensions of the phenomenon existing in the present and links it to phenomena that happened in the past. In other words, the researcher is investigating a current outcome by attempting to define previous factors that caused it. According to Burns and Grove (1993; 38), descriptive research enables a researcher to explore and describe a phenomenon in its real situation. It also allows the researcher to generate new knowledge of the subject by describing characteristics of persons, situations and the frequency with which certain phenomena occur. Descriptive studies also measure incidence rates, prevalence rates and relative risks (Polit and Beck 2004; 192-193). This study was led by a problem statement which guided and directed the exploration of the subject area, especially where there is a gap

in the knowledge (Burns and Grove 2003:70). According to Polit and Beck (2004:85), problem statement articulates the nature, context and significance of the study problem.

3.7.0 Research Procedure

Education and health form a virtuous circle. Healthy, attentive and secure children can fully participate in classroom activities to achieve their full potential. And better education leads to improved health. (WHO, 2004). It was recognized by WHO expert committee on comprehensive school health education and promotion (1996) that schools in virtually every nation could do more than any other single institution

to improve the well-being and competence of children and youth. In other words, a child spends almost eight hours a day for nine months a year within classrooms, playgrounds and the surrounding school areas. The school environment and the health services that are provided ultimately have an impact on the health status of the child. Keeping this in the background, the present study has been devised to study school health environment and school health services of schools in Hyderabad city. This study is designed in a way that would provide an opportunity to the researcher to explore the school health environment and school health services of the primary schools and come out with some significant findings.

The study is also designed to investigate the beliefs and opinions of the teachers as well as the students. Pajares (1992) argues that the construct of belief and opinions does not lend itself easily to empirical investigation. Beliefs and opinions have a very covert nature, might not be observable and even the teachers holding them may not recognize them (Milne and Taylor 1995). Beliefs and opinions are often tacit and inarticulate (Driver and Erickson 1983). They belong to the area and thought processes that occur inside heads and are thus unobservable in the same way that behaviour would be (Clark and Peterson, 1986). The present study recognizes the challenges related to studying opinions. It is in recognition of these challenges that the research was designed. This research design emphasizes on providing a means or mechanism to allow teachers as well as students to express their thoughts, knowledge about the school health environment and school health services. The study provided an opportunity to probe more deeply into the school health aspects including the material as well as human resources of the schools.

The present study is also "interactive" in that the researcher participates in the discussion along with the students. The researcher's role here is that of a leader and an individual who prompts others. The methodological approach that is adopted is designed to take into consideration the challenges related to investigating perceptions and opinions. Innovative and non-obtrusive techniques are required to elicit tacitly held beliefs and to provide an environment in which subjects will be encouraged to reflect on and articulate their beliefs. Many approaches might or could have been used to probe and profile teachers' and students' opinions. However, ensuring the integrity of these perceptions has to be a guiding factor in the choice of methodology. The present research model has been designed specifically to ensure the integrity of the beliefs and to provide teachers and students with an optimal opportunity to reflect and articulate their beliefs.

The present study recognizes the challenges related to studying opinions. It is in recognition of these challenges that the research was designed. Emphasis in the research design is on providing a means or mechanism to allow the subjects

(teachers and students) the opportunity to express their opinions and perceptions about school health environment and health services. The study allowed for participation from a wide range of teachers from diverse educational backgrounds. At the same time, the study provided an opportunity to probe more deeply into the opinions of a certain number of the study's participants.

3.7.0 Population, Sampling and Sampling Technique

3.7.1 Population

The target population for this study constituted teachers and students in elementary schools within the boundaries of Hyderabad district. According to Polit and Beck (2004:290), the target population "is the aggregate of cases about which the researcher would like to make generalizations."

Table 2: Mandal-wise distribution of schools

Sl. No	Mandal	No of Primary Schools	
		Government	Private
1	Amberpet	26	43
2	Ameerpet	12	30
3	Asifnagar	60	75
4	Bahadurpura	95	64
5	Bandlaguda	76	36
6	Charminar	39	32
7	Golkonda	27	27
8	Himayatnagar	12	39
9	khairtabad	45	64
10	Marredpally	32	35
11	Musheerabad	18	60
12	Nampally	29	34
13	Saidabad	24	57
14	Secunderabad	26	24
15	Shaikpet	26	19
16	Tirumalagiri	15	29
	Total	562	668

Sources Rajiv Vidya Mission Andhra Pradesh 2005-06

The population of the study comprises primary schools, teachers and students of Hyderabad District of Andhra Pradesh. Some of the reasons behind selecting this

district are that most of the government schools are located in rented buildings and in deplorable condition and the other important reason is that most of the private primary schools of Hyderabad district are overcrowded and with poor quality maintenance standards. The print and electronic media have been regularly exposing the prevailing unsafe and unhygienic conditions of government and private primary schools of Hyderabad district .A number of news items have appeared in local and national daily newspapers reflecting the poor conditions of the schools. In addition to this, the rapid and uneven development and the impact of globalization in Hyderabad district is also an important aspect for the selection of this district for the study. Owing to the above reasons, it was felt that it would be worth studying the conditions of the primary schools of Hyderabad district and the opinions of teachers and students about school health.

The study includes two categories of primary schools based on type of management i.e., government primary schools and private primary schools of Hyderabad city. The Hyderabad city is geographically divided into 16 mandals. The total numbers of government schools and private primary schools in Hyderabad city are 563 and 650 respectively (Rajiv Vidya Mission, Andhra Pradesh, 2005).

3.7.2 Sampling

According to Polit and Hungler (1989: 169), "Sampling refers to the process of selecting a portion of the population to represent the entire population". The representative sample consists of subsets of the elements of a population; this allows for study results to be generalized (Polit and Beck 2004:290; De Vos et al 2005:194). The characteristics of the sample population are intended to be representative of the target population. Sampling criteria which is also referred to as "eligibility criteria", involves listing of attributes essential to the study. The sampling criteria also consist of inclusion criteria which are characteristics the subject should have to include in the study.Also important are exclusion criteria that are characteristics that will exclude a subject from a study (Burns and Grove 2003:234). In this study the inclusion criteria consist of all professional teachers and students in selected elementary government and private schools in Hyderabad district.

The sample consists of about 10% of the population. The total sample of the study is 130 primary schools. Among them, 65 belong to government schools and remaining 65 are private schools. In other words, 10% of schools were selected randomly from each mandal. Two teachers from each school under study were selected randomly to collect data related to their opinion about school health components. 4For the purpose of conducting Focus Group Discussions with students, a sample of 10 groups consisting of 10 to 12 students were randomly

drawn from the total population of students of primary schools under the study. Among these 10 groups, five belong to government schools and five belong to private schools. 4 For the purpose of conducting Focus Group Discussions with students, a sample of 10 groups consisting of 10 to 12 students were randomly drawn from the total population of students of primary schools under the study. Among these 10 groups, five belong to government schools and five belong to private schools.

Table 3.3: Mandal-wise sample schools

Sl. No	Mandal	No of Primary Schools	
		Government	Private
1	Amberpet	3	4
2	Ameerpet	2	3
3	Asifnagar	7	7
4	Bahadurpura	10	6
5	Bandlaguda	9	5
6	Charminar	4	3
7	Golkonda	3	3
8	Himayatnagar	2	4
9	Khairtabad	5	6
10	Marredpally	4	3
11	Musheerabad	3	6
12	Nampally	3	3
13	Saidabad	3	6
14	Secunderabad	3	2
15	Shaikpet	3	2
16	Tirumalagiri	2	3
	Total	66	66

3.7.3 Sample design

The literature differentiates between two types of sampling: non-probability and probability. Non-probability sampling is used in large-scale surveys where the elements are not known and are thus non-random selection of subjects (Bobbie 2005:188). The disadvantage of non-probability sampling is that it is a less representative approach. Four types have been identified: convenient, snowball, quota and purposive or judgmental (Polit and Beck 2004:311; Babbie 2005:196). Probability sampling is seen as the best way of selecting a sample that is representative of the population from which it is drawn. In probability sampling,

every element has an equal chance of being selected for the sample. Probability sampling allows for the calculation of the desired sample size for the margin of error the researcher will agree to (De Vos et al 2005:198). Four types of probability sampling are: systematic, simple random, stratified random and cluster (De Vos et al 2005:198). A stratified sample was used in this study. 65 government schools as one category and 65 private schools as another category were randomly selected. Two teachers were randomly selected in each school. This method was selected because it allowed the population to be divided into two or more strata or groups. According to Varkevisser et al, (1991:200), random sampling ensures that units of the sample are selected on the basis of chance, and all units have an equal chance to be included in the sample.

3.8.0 Research Tools

The research tools/methods used to collect data in this study were:

3.8.1 Observation checklist

An observation checklist consisting of items related to two areas viz. school health environment and school health services and practices is prepared to collect relevant information from the primary schools.

3.8.2 Questionnaire

A Likert type questionnaire, containing 36 statements on the model of Horwitz (1987) along with a few open-ended questions, is prepared to tap the opinions of the respondents on the school health environment and school health services. (Appendix-A).

3.8.3 Focused Group Discussions (FGDs)

In-depth probing, through focus group discussions, formed a secondary means of collecting data. A structured interview format was prepared and used for initiation of the Focused Group Discussions (FGDs in Appendix-B) conducted at various places to corroborate the opinions of the students. Ten such FGDs were conducted to gain further insight into individual opinion of the students. The following sections of this chapter describe the research tools used in this study in detail.

3.8.2 Case study

It was felt that a brief case study of few sample schools would add to the quality of data collected through aforementioned research tools. From the schools under study, three government primary schools and three private primary schools were selected for the case study.

Development and Description of Research Tools

The description of the research tools developed for the study is given below.

Observation checklist

It was felt that school health components like healthful school environment and school health services would need a checklist to assess their availability, adequacy and quality. Though standardized checklists are available in various textbooks and internet resources like CDC, USA (Centre for Disease Control) and the journal database ERIC, a checklist suited for Indian context was developed, based on detailed discussion and feedback from subject experts.

'Observation' is a term that is open to a wide range of interpretations. Its connotations may vary in intensity and complexity and range from implications of analysis, such as 'scrutinizing' or 'investigating', to the more informal 'looking' or 'glancing'. For professional researchers, observation is commonly used as a method to collect data or to record evidence. Johnson (1994) qualifies the definition of observation further as a method mainly used 'to record behaviour'. He adds in this context:" In social research, observation is generally used to record behaviour. It may be employed as a primary method of data collection to provide an accurate description of a situation; to gather supplementary data which may qualify or help interpret other sources of data; or it may be used in an exploratory way, to gain insights which can be tested by other techniques.' (Johnson, 1994:52). Therefore, observation as a research technique or method implies several features: (a) the collection of evidence, (b) the examination or analysis of the evidence and (c) the formation of significant judgments based on the evidence and the subsequent implications, such as changes and improvements to accepted practices that these judgments may entail.

There are varied types of observation. A wide terminology, such as formal and informal, structured and unstructured, systematic and participant, are used to describe the features of observation approaches. Broadly speaking, however, observation approaches can be divided into two major kinds: non-participant and participant observations. Non-participant observation is normally an approach, which is a process whereby the observer devises a systematic set of rules for recording and classifying events, is perceived to be as objective as possible with the least intervention of the observer in the process being observed. The result of this kind of observation is usually expressed in quantitative terms. While participant observation, on the other hand, suggests a more detailed and involved relationship between the observer and the process under observation. This type of observation is an approach that is often associated with ethnographic or qualitative observation

techniques in which the observer attempts to arrive at an understanding of meaning of activities for the subjects being observed. (Croll, 1986:1). In addition, a variety of instruments or tools can be used for both non-participant and participant observations, such as checklists, field notes, and even audiovisual recordings (Tilstone, 1998; Montgomery, 2002).

However, any kind of method, including techniques, instruments or tools, should be in accord with the specific purposes of a research, that is, the chosen methods or techniques, should strive 'to the aim of illuminating a particular research issue, or solving a particular research or evaluation problem' (Sanger, 1996:40). If the chosen research methods or techniques are suitable to the particular purpose of a piece of research, the procedure of research will have validity. Otherwise, the validity, or in related terms, the 'responsiveness', 'fairness', 'trustworthiness' or 'accuracy', of the research will be in doubt. Montgomery believes that the checklist as an instrument is commonly used by most types of observation and a good checklist will provide observation a helpful proposed sampling frame which is 'established on the basis of experience in classrooms and discussion' (Montgomery, 2002:39).

Formation of item pool: Observation checklist

Based on the above, it was felt that an observation checklist with several items is an appropriate tool to collect data related to the areas of school health environment and school health services and practices. Initially an observation checklist with 15 items in Part A (School Health Environment) and 25 items in part B (School Health Services and Practices) was prepared. The observation checklist was supplemented by a rating scale. A rating scale with four or five alternatives was used to measure opinion, reaction, and attitude in relation to the statement given, in particular the Likert scale was used (Burns and Grove 2003:292) .A three-point rating scale was initially prepared for the Part A(School Health Environment) of the observation check list with choices as 1.Healthy/adequate, 2. Partially healthy/moderate, 1. Unhealthy/inadequate. A rating scale for the other part of the observation checklist was prepared as a four response alternative scale with the choices as fully in place, partially in place, under development and not in place.

For establishing the validity of the observation checklist, the method of construct validity was adopted. The tool was thoroughly discussed with five experts. Some of the items were deleted, modified and finalised based on the critical comments and suggestions of the experts .The experts also suggested minor modification in the 3-point rating scale of Part A which was incorporated making it a 4-point rating scale with Not available as another choice .Parameters for each item of the observation checklist(enumerated under each item in chapter 4) are identified with the help of

the experts to ensure objectivity by the researcher in rating the sample schools. A finalised Observation checklist emerged with 10 items in Part A (School Health Environment) and 22 items in Part B (School Health Services and Practices) with a distinct 4-point rating scale for each part and is appended.

Questionnaire

It was felt that questionnaire was the most appropriate research tool for this study as "…in second language acquisition research, questionnaires are used mostly to collect data on phenomena which are not easily observed, such as attitudes, motivation, and self-concepts" (Seliger & Shohamy 1989:172). With a carefully prepared questionnaire, it can be "self-administered and can be given to large groups of subjects at the same time" (ibid). Varying approaches have been taken by researchers in their attempts to understand teacher and students opinions. One of the more common approaches is the use of Likert-type questionnaires to which respondents indicate their choice. Another approach is that of open-ended questions that require respondents to express their opinions freely. This approach provides an accurate indication of teachers' and students' opinions. The present study adopted questionnaire as a major research tool with both 'closed-ended' statements and 'open-ended' questions.

Formation of item pool: Close-ended questions

To elicit the perceptions of teachers, it was felt that two types of questions – close-ended and open-ended - were necessary to be included in the questionnaire. The composition of close-ended questions was guided by area-wise division namely. School health environment, School health services and School health education. Initially the number of items prepared in each of these areas was 20, 15 and 15 respectively. The items were prepared in the form of statements with a Likert-type 5-point scale. The second stage included the discussion of the questionnaire with the experts for their comments and advice. Upon their suggestions and comments, modificationswere made in the questionnaire after several deletions and additions. This editing based on the experts' guidance helped the researcher to consolidate the questionnairewith 36 statements.

Formation of item pool: open-ended questions

The perceptions that were categorized under the three heads may not reflect all the tacitly held perceptions of the respondents. The respondents may hold some other perception which needs to be tapped carefully. This is possible only through open-ended questions. Hence, a few open-ended questions were thought to be important to further explore the respondents' opinions and beliefs.

Open-ended questions necessitated their inclusion in the questionnaire so as to provide the respondents with opportunities to express their implicit perceptions. Twenty questions were prepared for this purpose initially. These questions were discussed with the experts in the field to determine their suitability for the study. To avoid repetition and redundancy, the experts suggested that the number be restricted to ten questions belonging to the areas of School health environment and school health services with some modifications in the wording. The questions were designed to elicit responses that would reveal their cognizance of school health aspects.

Pilot study of the questionnaire

To make sure that the items are appropriate for the respondents, the items were field-tested with small groups of teachers and subsequently interviewed, some of them about individual items. Though the questionnaire is based on school health survey and the tools are used in various developed countries and health-related textbooks, a lot of changes have been adopted to make it relevant to the Indian context. Also, the draft version of the questionnaire was discussed with a few experts in the field for their comments and suggestions. This was followed by a pilot study once again with a small group of teachers/teacher educators, which resulted in minor changes in the wording of certain items before it was administered to the larger sample in the final study.

Standardization of the questionnaire

A pilot study was felt necessary to determine the validity and reliability of the items included in the questionnaire. After finalizing the items and the scheme of answering the statements on a 5-point scale consisting of Strongly Disagree, Disagree, Not sure/ Donot Know, Agree, Strongly agree and the mode of answering open-ended questions, it was decided to administer a pilot study with the following objectives to a sample of people reasonably representative of those whose responses are to be scored. The pilot study attempted to

- find out the consistency of their responses to the various items and to eliminate poor items
- to establish the reliability of the tool
- to establish the validity of the tool.

The sample for the pilot study included 60 respondents drawn from the primary schools of Hyderabad city in Andhra Pradesh, India. As this part of the tool is constructed on a 5-point scale, the range of score on the tool is between 50 as the minimum and 250 as the maximum. Scoring was given to the responses in the descending manner i.e. 4 for not available, 3 for unhealthy/inadequate, 2 for partially

healthy/moderate and 1 for healthy/adequate. The marking scheme is reversed for the negative statements. The scores of individuals on each of the items with their total score were correlated for establishing the item validity. Items that failed to correlate highly with the total score were rejected. The distribution of the total score is as follows:

Table 3.4: Distribution of Scores

Range	Frequency
50-75	2
76-100	1
101-125	6
126-150	20
151-175	21
176-200	7
201-225	2
226-250	1
Total	60

It can, thus, be seen that the distribution is very nearly approximate to the normal distribution. Item validity was also determined by eliminating those items that failed to discriminate between people with high and low total scores. This was done by selecting the highest quartile and the lowest quartile as the high and the low groups and the average scores of the two groups on each item were worked out along with the standard deviation. 't' ratios were calculated for each item applying the formula (1969).

$$t = \frac{X_H - X_L}{\sqrt{\frac{(X_H - x_H)^2 + (X_L - x_L)^2}{n\,(n-1)}}}$$

Out of the 50 items, only 36 items were found to be significant as per't' values/ratios. These 36 items were retained because these items were found to reveal mean differences at 0.05 and 0.01 level of significance as shown in the following table. Table 3.4: Showing't' values/ratios of the items in Part-B of the questionnaire for ascertaining the item validity.

Thus, the above 36 items which were found to be significant were retained in the questionnaire, of which12 items pertained to the area of School health

environment,11 and 13 items pertained to the areas of school health services and school health education.

Table 3.5 Retained Significant Items on School Health Areas and Corresponding T Ratio

Item	't' ratio
1.	3.22**
2.	3.47**
3.	2.10*
4.	3.15**
5.	3.79**
6.	3.17**
7.	2.79**
8.	3.25**
9.	2.92**
10.	3.38**
11.	2.69**
12.	3.27**
13.	4.78**
14.	3.83**
15.	4.72**
16.	5.90**
17.	3.25**
18.	3.76**
19.	2.73**
20.	5.34**
21.	2.23*
22.	3.46**
23.	2.98**
24.	3.56**
25.	4.12**
26.	2.34**
27.	3.78**
28.	6.19**
29.	3.79**
30.	3.46**
31.	2.10*
32.	3.81**
33.	2.73**
34.	3.27**
35.	4.78**
36.	3.29**

Reliability of the Tool

To determine the reliability of the questionnaire, 'test and retest reliability' procedure was followed. This was done by administering the revised form of the tool to 30 subjects with the 36 items for which validity was established before. The administration of 'test and retest' was done with an interval of 60 days. The scores of the 60 subjects on the two occasions were correlated. The coefficient of correlation 'r' was found to be 0.86. The value was high enough to be accepted.

Validity of the Tool

For establishing the validity of the test, the concurrent validity method was adopted by adapting the Ravi Shoery's modified version of Horwitz's Beliefs Inventory aimed at eliciting the beliefs of teachers on the three areas, viz., 1. School Health Environment; 2. School Health Services; 3. School Health Education. In other words, the questionnaire with the validated items done for this study and the questionnaire developed for Shoerey's study were administered to a sample of 60 teachers along with the test and retest meant for determining the reliability of the test. The scores of the two scales were obtained and the coefficient of correlation between these two scores was computed. The obtained coefficient of correlation between the two scores was 0.72. This showed the high validity of the items on the tool employed for this study.

Description of the questionnaire:

The second measuring instrument is a two-part questionnaire. The first part is open-ended to find out the perceptions of teachers about their school health environment as encapsulated in section A and school health services as encapsulated in section B. Apart from the personal profile, there are five open-ended questions in section A and five open-ended questions in section B. The second part of the questionnaire is a five-scaled close-ended instrument which is also meant to explore the perceptions of school teachers on school health environment, school health services & school health education practices as encapsulated in sections A, B and C which contain 14 items, 11 items & 13 items respectively.

The final form of the quantitative research tools emerged with an observation check list-cum rating scale containing 32 items, a questionnaire containing 36 close- ended items and 10 open-ended questions after determining the validity and the reliability. This enabled the researcher to proceed with the further administration of the measuring instruments.

Focused Group Discussions (FGDS)

The main purpose of using FGDs in this study was to obtain in-depth information

on concepts, perceptions and ideas of the respondents and also to cross- check the responses obtained on the questionnaire.

Focus group interview is not a new concept as some researchers seem to view it. It has been popular as a research tool for more than five decades beginning with Merton et.al. in 1956 (Flick 2002). Patton (1990) views the focus group interview as 'a highly efficient qualitative data-collection technique'. According to him,

A focus group interview is an interview with a small group of people on a specific topic. Groups are typically six to eight people who participate in the interview for one half to two hours (p.335).

It is customary to notice the interchangeable use of focus group discussions and focus group interviews. While Patton (1990); Fontana and Frey (2000); Merton (1987) used the term 'focus group interviews', McNamara (2006) and many others refer to these as focus group discussions. However, Flick (2002) used these terms interchangeably. To maintain consistency, the term 'focus group discussion' is employed in the present study.

Description of the FGD

Based on the two areas of school health environment and school health services, observation checklist and questionnaire questions were initially prepared. The formulation of the questions was preceded by a series of informal interactions with the target group that provided the researcher opportunities to think aloud the kind of questions to be made part of this tool. Also, a review of teacher diaries and classroom observation as part of her visits to schools sharpened her insights with regard to the formulation of questions that would elicit the respondents' implicit beliefs. Additionally, the researcher, by virtue of being a teacher educator, had occasions to discuss the modus operandi of this tool with several senior resource persons, experts, policy makers at the state and national level. All these contributed to her clear understanding of what questions to include in this tool. Taking the inputs from these interactions, after a thorough and careful reading and on the advice of experts, the number of questions was restricted to five Since FGDs aim at generating discussions among the respondents as a face-to-face interaction, semi-structured questions were found to be appropriate. The questions raised in the FGDs were based School health environment and School health services.

Case Study

Case study is one of the four tools used in this study to gain a comprehensive and deeper understanding of the prevailing school health environment and school health services in the government and private primary schools in the city. The following

definitions would further support the need for using case study as a tool in this study. Case studies focus on understanding the dynamics present within a single setting (Eisenhardt, 1989). It is a "method that involves a thorough, in-depth analysis of an individual, group, institution or other social group" (Polit and Hungler, 1995). Case study research "is an intensive, in-depth form of investigation" (Vallis and Tierney, 2000). It is "conducted within the context it occurs, thus giving a picture of the real life situation" (Pegram, 2000). Case studies are generally used for three purposes: descriptive, exploratory and explanatory research (Yin, 2003a). The case study approach to research is a way of conducting mainly qualitative inquiry, commonly used when it is impossible to control all of the variables that are of interest to the researcher.

The use of case study approach is determined by four factors: the nature of the research questions; the amount of control the researcher has over the variables under investigation; the desired end product; and the identification of a bounded system as the focus of investigation (Merriam, 1988, p.8). "How" and "Why" questions are the most suitable for a case study because the approach draws attention to what can be specifically learned from the single case (State in Denzin & Lincoln, 2000, p.5). In many educational settings, the lack of control that can be exercised by the researcher means that it is necessary to adopt a holistic approach to the issue, one that is grounded in the reality of the situation and one that illuminates the meaning of what is occurring. A case study often builds upon tacit knowledge and provides a thick description of the case under investigation (Merriam, 1988, p.12). The end product of research using a case study approach is sometime the case itself, but often the case is used in an instrumental way to investigate a broader phenomenon (Stake, 1995, p.3). Merriam defines a case study as"an examination of a specific phenomenon, such as a program, an event, a process, an institution, or a social group" (1988, p.9). However, Stake (in Denzin &Lincoln, p.436) indicates that a case study is both a process of inquiry about the case and the product of that inquiry. Yin (1984, p.23) offers a more technical definition by equating a case study with an empirical enquiry that investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used.

Part of the confusion that surrounded case studies was that the process of conducting a case study was conflated with both the unit of study (the case) and the product of this type of investigation. Yin (1994, p.13), defined case study in terms of the research process when he stated a case study "is an empirical inquiry that investigates a contemporary phenomenon within the real-life context, especially when the boundaries between phenomenon and context are not clearly evident".

State (1994, 1995) focused on trying to pinpoint the unit of study-the case. Wolcott (1992, p.36) saw it as an "end-product of field oriented research". However, Merriam (1998, p.27) concluded that the single most important characteristic of case study research was in delimiting the object of study, the case. Smith's (1978) notion of the case as a bounded system was embellished by State's notion that it was an "integrated system" (State 1995, p.2). Miles and Huberman (1994, p.25) supported this notion when they claimed a case was a "phenomenon… occurring in a bounded context" and Bromley (1986, p.21) also confirmed that a case study "must be limited in scope… there must be conceptual boundaries and empirical limits to it". Merriam (1998, p.27) agreed and stated that "if the phenomenon is not intrinsically bounded, it is not a case". Case study was differentiated from other research designs by what Cronbach (1975, p.123) called "interpretation in context". By concentrating on a single phenomenon or entity (the case), the researcher aimed to uncover the interaction of significant factors characteristic of the phenomenon. Yin (1994, p9) suggested that for "how" and "why" questions the case study had a distinct advantage over other research designs and Bromley (1986) claimed that case studies got: "as close to the subject of interest as possible …Partly by means of direct observation in natural settings, partly by their access to subjective factors (thoughts, feelings, and desires), whereas experiments and surveys often use convenient derivative data e.g. rest results, official records. Also case studies tended to spread the net for evidence widely, whereas experiments and surveys usually have a narrow focus". Bromley (1986, p.23).

Merriam (1998, p.33) recommended that case study was a particularly suitable design for an analysis of process. Process as a focus for case study research was viewed in two ways. The first meaning of process was monitoring and this involved describing the context and population of the study. The second meaning of process was causal explanation and this involved the discovery or confirmation of the process by which the treatment had the effect that it did (Reichardt & Cook, 1979, p.21)

In summarizing, the importance of process rather than an outcome can be the justification for selecting case study and Sander's (1981, p.44) commented that, "case studies help us to understand processes of events, projects, and programmes and to discover context characteristics that will shed light on an issue or object.

Finally, a case study might be selected for its uniqueness. Abramson (1992) underscored the value of unique or atypical cases and contended that:"Since such data are rare, they can help elucidate the upper and lower boundaries of experience. Second, such data can facilitate … prediction by documenting infrequent non-

obvious or counter intuitive occurrences that may be missed by standard statistical (or empirical) approaches. Finally, atypical cases … are essential for understanding the range or variety of human experience, which is essential for understanding and appreciating the human condition" Abramson (1992, p.190).

Description of case study

In an attempt to collect data that would be complete and comprehensive to gain an insight into the various aspects of school health, case study method was also apart of the research design. Case study was conducted for three government schools and three private schools based on the score of the observation checklist. One schooleach from the schools with high, medium and low scores were selected randomly from both government and private schools. Observation, in-depth interview of schooladministration, school principals, school teachers, discussion with students etc. was included.

Administration of The Research Tools

Details of the administration of the research tools is presented below

Administration of observation checklist

The observation checklist was used by the researcher herself to collect the data from the sample of 66 government and 66 private schools. These schools are widely spread out in Greater Hyderabad. This researcher filled up each checklist honestly by encircling one of the four responses- healthy/adequate as 1, partially healthy/moderate as 2, unhealthy/inadequate as 3, not available as 4 on the statements in the questionnaire. A four-scaled 10-item measuring instrument was adopted in the first section, focusing on school health environment, and contains four options as follows. Even the 22-item second section focusing on school health services contains four- scaled items with response options as follows-fully in place-1, partially in place-2, underdevelopment-3, not in place-4.

A standard process was followed during each visit to the school as part of which this researcher first used to personally check the entire premises including the building, classrooms, toilets, staff rooms, corridors, water tank/sump and playground and also enquired with a few support staff members before personally asking the headmistress/headmaster in order to fill up each item correctly according to the scale in the checklist. Whenever this researcher felt that there was some apparent contradiction between what was personally observed and what was related to by the respondent, a clarification was sought from the respondent & only that choice was marked wherein both this researcher & the respondent arrived at a consensus.

Administration of the questionnaire

The standardized questionnaire was administered to the total sample of 132 schools. All the questionnaires were administered personally to the respondents. While 132 questionnaires were administered to the government school teachers, another 132 were given to the private schools. All the respondents i.e. teachers wererequested to submit their responses honestly by encircling one of the five responses on the statements in the questionnaire. 264 teachers were asked to respond to the questionnaire. 260 questionnaires were responded to by this researcher. This researcher met all these in person many times to motivate them to fill up the questionnaires. Most of the times the researcher sat with them until each respondent completed the questionnaire. Though this approach involved high investment on time, money & energy, it yielded a high success rate as it enabled this researcher to apply the right amount of pressure on each respondent. An examination of these filled-in questionnaires revealed that all close-ended items were filled up and all open-ended items were filled up but more information could have been provided in the open-ended items.. A detailed data analysis and interpretation was done on the obtained data for arriving at the findings.

Procedure followed for the conduct of FGDs

The FGDs were organized at various places in ten sessions in a phased manner for students, keeping in mind the convenience of the respondents. The respondents who participated in the FGDs were 8,9,9,10,10 respectively from five government schools and 8, 8,10,10,12 respectively from five private schools of the sample. All the respondents belonged to Class V. The discussion conducted in the context of this study followed a systematic exchange among the students. The discussion provided them with the opportunity to reflect on their school health environment and school health services. Through a cooperative sharing of ideas and experiences, the students were able to respond and react to each other, to weigh arguments, ask questions, compare practices and ideas, express concerns and clarify issues in order to better understand how best to contribute to school health environment and school health services. Providing the students with the opportunity to talk about their experiences and awareness meant that they had to reflect on their practices as well as on the school health environment in which they study. Such reflection brings closer "to the surface" issues, knowledge, ideas and feelings that might otherwise have gone unexplored, unquestioned and unnoticed. The students were guided in this process by the researcher who served as a leader of the group discussion. The researcher functioned like the hub of the group, providing the topic, focus and direction of the discussion. The skills of contributing, crystallizing, focusing, introducing, closing and questioning were exercised in order to ensure the flow of

participation, and to elicit comments, and remarks that would provide insight into students' opinions. The researcher also had to ensure that the motivation in the group remained sufficient to ensure continued participation of members. Members no doubt needed to feel that the discussion was of benefit to them in their attempt to better understand how to contribute. The researcher acted as a participant-observer in the FGDs. As a participant- observer, the researcher refrained from actively participating in the deliberations by limiting her role only to providing focus and direction, and to questioning and probing. The researcher, however, had only observed, evaluated and adapted the FGDs in ways most conducive to making beliefs explicit.

Scoring:

The schools under sample were awarded scores based on the items of observation checklist-cum rating scale. The scores on the rating scale for Healthy, Partially Healthy, Unhealthy and Not available are 4, 3, 2, and 1 respectively. This type of scoring is used for the statistical test i.e. F-test and case studies.The schools were divided into three categories based on the range of scores they obtained, High (28-56),Average (57-85) and Low (86-112)

Conclusion

The chapter began with the statement of the problem followed by the objectives of the study and the research questions. Important terms used in the study were defined and clarified. Later, the subjects of the study, development and standardization of the research tools were given. After this, population and sampling techniques were described. Further, the description and administration of the research tools along with the procedure followed for the analysis of the data are included.

In the chapters that preceded this one, a conceptual and historical framework was presented. The review of the literature presented relevant studies related to school health environment, school health services and school health education. The present chapter described the procedure followed to carry out the study. In the chapters that follow, the results of the study are presented and interpreted.