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A Study To Evaluate The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Dental Hygiene Among School Children In Govt.Middle Schools Of District Budgam Kashmir

Parvaze Ahmad Sheikh, Shabnum Ali

Nursing Officer, Skims Soura Srinagar, Nursing Staff

Skims Deemed University, Jammu And Kashmir, Srinagar

INTRODUCTION

Background:

Dental hygiene is the practice of keeping one's mouth clean and free from diseases and other related oral health problems by regular brushing and cleaning between the teeth. It is important that dental hygiene be carried out on a regular basis to enable prevention of dental disease. The most common dental diseases are tooth decay like cavities, dental caries and gum diseases like gingivitis, and periodontitis.[1] Regular brushing means brushing twice a day before breakfast and before going to bed and cleaning between the teeth means interdental cleaning which is as important as tooth brushing. It can be done with floss, flossettes and interdental brushes.[2]

Dental care is an important aspect of the personal health of an individual. Teeth are essential not only for mastication of food, but also for good appearance and clear speech. There is evidence that improvement of oral hygiene does improve the general health. The two most common dental ailments throughout the world are dental caries or tooth decay and periodontal disease or gum disease. These are quite common in India and often begin in early childhood. Mostly dental care is neglected during early developmental years of child, which continue up to adulthood and results in early tooth decay and related problems.[3]

Dental caries is a chronic infectious disease that causes demineralization of dental hard tissues. The interaction of four factors allows this to happen: a susceptible tooth surface, specific bacteria in dental plaque (e.g., Streptococcus mutans and lactobacillus spp.), time and a diet rich in fermentable carbohydrates, particularly sugar. The impact of dental caries includes oral pain which may affect speech, eating, sleeping, swallowing and breathing. The altered appearance it causes can lead to low self esteem and undermine social acceptance.[4]

The caries experience varies greatly among countries and even within small regions of countries. It varies with age, sex, socioeconomic conditions, ethnicity, diet, medical conditions of the patient, oral hygiene practices, etc and even within oral cavity all the teeth and surfaces are not equally susceptible to caries.[5]

Dental caries is the leading dental problem of children, 90% of all children have some tooth decay by 12 years of age, and 95% of all cavities are caused by specific eating habits like candies, ice cream, canned juices which usually develop during early childhood as a result of changing life style. The ages of greatest vulnerability are 4-8 years for the primary dentition and 12-15 years for the secondary (or) permanent dentition. Dental caries if untreated result in destruction of involved teeth. [6]

By the age of 7 years, the child is capable of assuming responsibility for dental care including the use of dental floss. Dental checkups are recommended after every 6 months because approx. 35% of the population visits a dentist yearly. The school system should incorporate a dental health educational programme into the curriculum[21]. Dental caries is major concern of health care services in developing countries including India, adding to this illiteracy, poverty, and over growing population made it difficult to render better health care services to all. Hence prevention seems to be the only solution in promoting oral health and thereby overall health .School screening has a clear role in identifying children with untreated diseases and encouraging them to seek dental care by informing them about their dental needs.[7]

Dental caries and periodontal disease has historically been considered the most important global oral health burdens. Dental caries is still a major health problem in most industrialized countries as it affects 60–90% of school-aged children and the vast majority of adults. At present, the distribution and severity of dental caries vary in different parts of the world and within the same region or country. Dental caries in children is relatively high in the America (DMFT = 3.0) and in the European Region (DMFT=2.6) whereas the index is lower in most African countries (DMFT=1.7). Oral disease affects 3.9 billion people world-wide, with untreated dental caries impacting almost half of the world population (44%). In most developing countries, the levels of dental caries were low until recent years but prevalence rates of dental caries experience are now tending to increase. This is largely due to the increasing consumption of sugar and inadequate exposure to fluorides.[8]

The burden of oral disease is carried mainly by medically compromised individuals, physically and mentally challenged people and HIV positive patients. The World Health Organization recognizes dental caries as a pandemic and reports that the prevalence of dental caries among school aged children being 60% to 90%. In several industrialized countries the prevalence and severity of dental caries have declined substantially because of preventive oral care programmes and changes in living conditions and lifestyles .[8]

WHO recently published a global review of oral health which emphasized that despite great improvements in the oral health of people in several countries, problems still remain in many countries all over the world, particularly among underprivileged groups in both developing and developed countries. Oral diseases such as dental caries, periodontal disease, tooth loss, oral mucosal lesions oropharyngeal cancers, human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/ AIDS) - related oral disease and orodental trauma are major public health problems worldwide. Poor oral health may have a profound effect

on general health and several oral diseases are related to chronic diseases e.g. diabetes. The experience of pain, problems with eating, chewing, smiling and communication due to missing, discoloured or damaged teeth have a major impact on people's daily life and well-being. Furthermore, oral diseases restrict activities at school, at work and at home causing millions of school activities and work hours to be lost each year throughout the world.[8]

All over the world reported prevalence of dental caries is varying from 30 percent to 80percent. In many developing countries including India, dental caries is increasing. During 1940s the prevalence of dental caries in India was 55.5%, during 1950s it was reported to be 68%.During 1980 it has been estimated to be over 80%.[9] A very extensive and comprehensive National Health Survey conducted in 2004 throughout India has shown dental caries prevalence as follows: 51.9% in 5-year-old children, 53.8% in 12-year-old children and 63.1% in 15-year-old teenagers. The report concluded that a preventive program, such as water fluoridation, should be started to address this national crisis in dental caries.[9]oral disease affects 3.9 billion people worldwide, with untreated dental caries impacting almost half of the world's population (44%).[10]

The Child Dental Health Survey (CDHS) of Western Australia indicated that children as young as five years of age could have high levels of caries. Dental caries was the fifth most common cause of hospitalisation among preschool children aged 1-5 years.[11] The U.S. National Health and Nutrition Examination Survey (NHANES) found that 41% of children aged 2–11 years had dental caries of their primary teeth and 21% of children had untreated dental caries 42% of children aged 6–19 years had dental caries of their permanent teeth and 14% of children had untreated dental caries. World oral health reported that 18% of children aged 2-4 years had dental caries. [12]

The goal of WHOM, "Health for all by the year 2025", includes oral health as one among the healthy life. So WHO has selected the theme "Oral health for healthy life" in 1994". The purpose behind this was to make the people aware about various diseases of oral cavity and to educate them in relation to prevention of these diseases.[13]

Priyadarshini, Hiremath, Puranik, Rudresh, and Nagaratnamma (2011)[14] conducted a cross-sectional study to assess the prevalence of early childhood caries (ECC) among preschool children of low socio-economic status in Bangalore city, India. A sample comprised of 566, 24–59 months old children attending various anganwadi centers. The results revealed that Prevalence of Early Childhood Caries (ECC) was 37.3% with a mean decayed, extracted and filled teeth(DEFT) of 1.90 ± 3.38 ranging from 0 to 17 teeth. Out of 211 children with ECC, 94.3% had severe Early Childhood Caries (s-ECC) with a mean deft score of 5.35 ± 3.77. All of the deft was due to untreated caries. Mean caries experience of 36–47 months of age group was significantly higher than other groups (P = 0.024).care is neglected, dental diseases in children often continue into adult life.

Teng O, Narksawat K, Podang J, Pacheun O(2002)[15] conducted a cross-sectional survey to assess dental caries status, knowledge, attitude and practice on oral health among 12-year-old primary school children participating in the Oral Health Preventive School Program (OHPSP) in Phnom Penh City, Cambodia. Schools were stratified into 3 groups by levels of cooperation (good, partial, and poor). A total sample size of 239 schoolchildren who were randomly selected from the sampled schools. There were 79, 82, and 79 children from schools with good, partial, and poor cooperation, respectively. Dental caries status DMFT (Decayed Missing Filled teeth) and knowledge, attitude and practices on oral health were assessed from 21 January to 5 February 2002. Opinions of school directors toward the Oral Health Preventive School Program (OHPSP) Program were evaluated by interview. The results showed that the overall mean DMFT per person in schoolchildren in Phnom Penh City, Cambodia was 2.33 (95%CI=2.05-2.61) while mean DT (Decayed teeth) was 2.31 (95% CI=1.97-2.52) and mean MT (Missing teeth) and mean FT (Filled teeth) were 0.01 per person, which were quite small. Children from schools with good cooperation with the Oral Health Preventive School Program (OHPSP) had the lowest significant mean DMFT 1.62 (95%CI=1.25-1.98) compared to children from schools with partial and poor cooperation (Mean DMFT=2.67 (95%CI=2.10-3.23), and 2.69 (95%CI=2.19-3.19), respectively). There were no significant differences in levels of knowledge, attitude and practices in oral health among the 3 groups of schools, but the proportion of good practices was highest in good cooperation schools compared to the schools with partial and poor cooperation to the Oral Health Preventive School Program (OHPSP) (41.3%, 27.3%, and 31.3%, respectively).

Bajomo AS, Rudolph MJ, Ogunbodede EO[16]A total of 519 school children in the age groups 6, 12 and 15 years were examined by a calibrated examiner for dental caries using WHO diagnostic criteria. Both the schools, which were divided into rural and peri-urban locations and the children that participated were randomly selected. Results showed that a mean DMFT (SD) of 2.68(3.29) in six year olds and a mean DMFT (SD) scores of 0.61(1.50) and 1.26 (2.18) were recorded in the 12 and 15 year olds respectively. In the six year olds the upper anterior teeth showed highest susceptibility to caries, clearly indicating that black children suffer from early infant caries. At ages of 12 and 15 the mandibular molars were the teeth most affected. The decayed component constituted the main part of the DMFT and DMFT scores. Ninety-nine percent of these lesions were untreated and the restorative care was almost nil.

Ingle NA, Dubey HV, Kaur N, and Gupta R [17]coducted a cross-sectional study on total 1400 school children, of which 700 school children were from government schools and 700 were from private schools. Simple random sampling methodology was used to select the sample. The subjects were examined for dental caries according to WHO 1997 assessment form. Significant Caries Index was also used to assess the prevalence of dental caries. Results showed that the prevalence of dental caries was found higher among government school children, that is, 53%, when compared to private school children, that is, 47% and this difference was found to be statistically significant. The mean decayed, missing, and filled teeth were found to be higher in government school children (7.61 ± 2.86) as compared to private school children (4.76 ± 2.42).Dental caries was found to be the major public health problems among both the government and private

school children of Bharatpur city, which need immediate attention. Regular dental checkups and practice of routine oral hygiene procedures will enable them to lead a healthier life

Kasturi S.R (2000)[18] stated that Dental carries is the most destructive of all dental diseases leading to cavity formation and tooth decay. Dental decay is due to the action of acids on tooth enamel, and these acids are produced by certain bacteria acting upon food particles lodged and in the mouth, periodontal disease is better known to the lay people as "pyorrhoea" or pockets of pus around the teeth. It develops slowly. It is responsible for more tooth loss than any other single factor.

World Oral Health Day (2017) the theme "Live Mouth Smart" empowers people to take control of their oral health –Throughout life-so they can enjoy a healthy, functional mouth from childhood into old age.[19]

NEED FOR STUDY:

Dental caries can be traced to be as old as civilisation with its evidence seen even in skeletal remnants of pre-historic humans. Dental caries remains the most common disease affecting humans. Tooth decay is one of the most common of all diseases, second only to the common cold. It usually occurs in children and young adults but can affect any person. Numerous studies have reviewed the effectiveness of different preventive measures in different populations. Inspite of theses studies, children still suffer from high caries incidence .In western countries, the prevalence of dental caries is low compared to developing countries.[20]

In 1979, the World Health Assembly adopted a resolution calling for attainment of "Health for all "by the year 2000. In line with this, the FDI recommended the establishment of specific oral health schedule in the time scale of the WHO goals for global oral health, the first goal is that 50% of 5-6 years old children should be caries free and the second goal is that the global coverage should not be more than 3 decayed, missed, or filled teeth at 12 years of age .[21]

School health is an important branch of community health .According to Elias M.J.etal (1994), the school years of a child is a time for increasing risk of negative health related outcomes. Hence, these groups develop cognitive, affective and behavioural changes which in turn can promote child's health and prevent health problems. Thus, the school becomes a natural channel through which the health of the community can be improved.

According to WHO report 2009: The incidence of children with dental health problems, in USA, 79, 60,000 (seventy nine lac sixty thousand) children were identified with dental problems, UK, falls on 2nd. Place where19, 70,000 (nineteen lac seventy thousand) children were affected, Canada, with 13, 30,000 (thirteen lac thirty thousand) children India contributes 1300,000 (thirteen lac), and in Japan 196,000(one lac ninety six thousand) children were affected with dental health problems in 2009. Similarly in India, Karnataka, was placed at the top where the number of children with dental health problems was recorded 679,000 (six lac seventy nine thousand), followed by Tamil Nadu 378,000 (three lac seventy eight thousands), In Maharashtra 45,600 (forty five thousand six hundred) children with dental health problems, then Andrapradash 9260, and in UP, 1720 (seventeen hundred twenty children) were affected with dental health problems.[13]

As per above mentioned WHO report (2009) the dental health problems in USA are alarming besides America, UK, Canada and India are not far behind in dental health problems .Although India is large populated country in the list therefore the overall percentage of dental health problems are less than other, but proper measures are required to improve the dental health problems.

In the national survey almost 10% of low income children had a need for dental care, more than 305 reported not seeing dentist in the preceding years, between 11% to 72% of poor children have been found to have early childhood caries..Financial barrier and lack of knowledge lead to poor dental health values and adversely affects oral cavity. Only 19% of the children received preventive dental service under the Medicaid early and preventive screening diagnosis and treatment (EPSDT) programme in 1999.[22]

According to WHO globally 200,335,280 teeth are either decayed, missing due to the caries, this is just for one year age group (12 yrs old) and presented in database in feb.2004of WHO.

According to US department of health, 2900 children under the age of 5 years were hospitalized for tooth decay in 2005 in New York State alone.

Prasai Dixit L, Shakya A, Shrestha M, Shrestha A (2013)[23] conducted a cross sectional epidemiological study in 5 government Primary schools of remote Chandibhanjyang Village Development Committee (VDC) in Chitwan district. Data was collected using a pretested questionnaire on 131 schoolchildren aged 8-16 years attending Grade 3-5. Clinical examination was conducted on 361 school children aged 5-16 year attending grade 1-5. Criteria set by the World Health Organization (1997) was used for caries diagnosis. SPSS 11software was used for data analysis. Results showed Caries prevalence for 5-6 year was above the goals recommended by WHO and Federation of Dentistry international (FDI) of less than 50% caries free children. Caries prevalence in 5-6-year children was 52% and 12-13year age was 41%. The mean DMFT score of 5-6 year children and 12 -13 years was 1.59, 0.31 and 0.52, 0.84 respectively. The DMFT scores increased with age and the d/D component constituted almost the entire dmft/DMFT index. About 31% of 8-16 years school children who participated in the survey reported having suffered from oral pain. Further, the need for treatment of decayed teeth was reported as 100%. About 76% children perceived teeth as an important component of general health and 75% reported it was required to eat. Total 93% children never visited a dentist or a health care service. Out of 56% children reported cleaning their teeth daily; only 24% reported brushing their teeth twice daily. About 86% of the children reported using toothbrush and toothpaste to clean their teeth. Although 61% children reported to have received oral health education, 82% children did not know about fluoride and its benefit on dental health. About 50% children reported bacteria as the main cause of tooth decay and 23% not brushing the teeth for gingivitis. Frequency of sugar exposure was low; 75% of children reported eating sugar rich food once daily.

Adekoya-Sofowora CA, Nasir WO, Oginni AO, Taiwo M(2006)[24] conducted a study to investigate the prevalence of dental caries , dental attendance and oral health behaviours among 12 year old suburban Nigerian children. A total of five hundred and two schoolchildren (349 boys & 153 girls) participated in the study in 2003. One examiner was calibrated and performed the screening procedures using standard method of WHO diagnostic criteria. Results showed that the prevalence of caries was 13.9 % and mean DMFT was 0.14. The decayed component accounted for 77.2 % of the DMFT while filling and missing teeth accounted for 15.8% and 7% respectively. Over 85 % of the children examined were caries free. Seventy seven per cent of the teeth affected by caries were untreated. The probability of having caries experience DMFT> 0 was significantly associated with the type of school and regular sweet consumption $p < 0.05$. The children who had not visited the dentist had higher caries prevalence than other children. This was statistically significant $p < 0.05$. Dental attendance was generally poor in both public (90.6%) and private (83.1%) school children.

Christensen LB, Bhambal A, Petersen PE. (2003)[25] studied that implementation of community oriented oral health promotion program is needed in order to increase the level of knowledge and to change attitude and practice in relation to oral health among children.

Rao SP, Bharambe MS. (1993)[26] conducted a study on dental caries and periodontal disease in wardha district of Maharashtra in India on the habit of using brushing material and brushing technique among urban, rural and tribal school children of 12 years of age in both genders. They stated that dental caries were more prevalent about 22.8% among urban children and 15.5% in rural whereas 15% was in tribal children and concluded that school oral health education should address dental caries, Periodontal disease and the material that harm teeth.

Aasim farooq etal (2015)[27] The study was carried out in Budgam district of Kashmir division of J&K State, India. A cluster sampling was done to collect the sample .Sample size of 453 school going children was obtained with the age group of 6-12 years from these schools. DMFT index was used for recording dental caries. The results showed that the mean dmft of the school children was 1.355± 1.79 which was lower than the mean DMFT 1.74± 1.92 seen in the permanent dentition of the same children. In primary as well as permanent dentition the decayed component remained higher in comparison to the missing and decayed components. It was also obtained that the females had lower caries experience in both the dentition as compared to males.

The above stated literature review enlightened the investigator to select the study on prevailing problems of dental health and the findings helped to develop effective teaching programme in order to modify the behaviour and practices of school children so that the general health related complications among the future adults may be prevented leading to healthy future citizens.

The investigator has selected a rural area for the study, because the rural population is not aware about oral hygiene due to lack of knowledge, less exposure, and non-availability of oral health care services.

Problem statement:

"A study to evaluate the effectiveness of structured teaching programme on knowledge regarding Dental Hygiene among school children in Govt. Middle schools of District Budgam Kashmir."

Objectives:

1) To assess the pre-existing knowledge score of middle school children regarding dental hygiene before implementation of structured teaching programme (pre-test).
2) To assess the knowledge score of middle school children, after implementation of structured teaching programme. (Post-test).
3) To determine the effectiveness of structured teaching programme regarding dental hygiene among middle school children by comparing pre-test and post-test knowledge scores of middle school children.
4) To determine association of pre-test knowledge score of middle school children regarding dental hygiene with their selected demographic variables (Gender, type of family, educational status of Parents, monthly family income).

HYPOTHESIS:-

1) **H_1**-The mean post test knowledge of middle school children regarding dental hygiene is significantly higher than the pre-test knowledge after the implementation of structured teaching programme at 0.05 level of significance.

2) **H_2**- There is significant association between pre-test knowledge level of middle school children with their selected demographic variables at 0.05 level of significance.

Operational Definitions:

Effectiveness: In this study it refers to the ability of an intervention to produce desired beneficial effects in actual stage.

Middle school children: In this study it refers to children of 8^{th} standard in the age group of 13-15 years.
Dental hygiene: In this study it refers to the practice of keeping the mouth, teeth, and gums clean and healthy to prevent diseases, by regular brushing, flossing and visits to the dentist for regular dental checkups.
Structured teaching programme: In this study it refers to a well planned instructional material designed to provide information regarding selected aspects of dental hygiene.
Knowledge: In this study it refers to correct, written responses of clients to the items present in the structured questionnaire regarding dental hygiene.
Evaluation: In this study it refers to assessing the effectiveness of structured teaching programme on knowledge regarding dental hygiene through pre-test and post test.

ASSUMPTIONS:

1) Adequate knowledge on dental hygiene will help in adopting positive attitude towards hygiene practices.
2) Health education promotes early health seeking behaviour.
3) Group teaching will provide opportunity for active learning among the participants.
4) Knowledge of the people have a strong influence on adoption of healthy behaviour.
5) Awareness regarding dental hygiene is poor among middle school children.

DELIMITATION:

The study is limited:-

- To 50 students of Govt Middle school Budgam.
- For the period of 4 weeks only.
- To only rural areas of Budgam.
- Selected only one Govt. Middle school of Dist. Budgam.

Conceptual framework of the study:

It is based on **Von Bertalanffy's General System Theory.**

Conceptual framework

According to Polit and Beck, "Conceptual framework refers to the interrelated concepts or abstractions assembled together in a rational scheme by virtue of their relevance to a common theme. The development of Conceptual framework is a fundamental process required before conducting actual research because it guides each stage".[28]

The Conceptual framework of the present study is based on Ludwig Von Bertanloffys General Systems Theory (1950) or system model Fig 1 developed by WHO in 1985. In 1952 Bertanloffy introduced this theory as a universal theory that could be applied to many fields of study. This model is aimed at developing and evaluating the effectiveness of Structured teaching programme on knowledge regarding dental hygiene among school children in Govt. Middle schools of District Budgam Kashmir. According to Bertanloffy, General system theory provides a way of examining interrelationships and deriving principles. Theorists described human being as an open system, for proper functioning of human beings depends on the quality and quantity of its input, throughput/ process, output and feedback. Being an open system a client is capable of receiving information and gain knowledge from his environment. Utilizing the capacity of clients, nurse researcher takes the opportunity to provide information. The nurse researcher examines whether the information is processed or not with the help of feedback.

Conceptual framework is a schematic representation. It provides:

- A theoretical framework of the problem that is scientifically based & which lays emphasis on the selection, arrangement and clarification of its concepts.

- A certain frame of reference for clinical practice, research and education and direction to research.

The present study is based on an open system model (Fig 1). The components in the study are:

- **Input:** It refers to the learner target group with their characteristics, level of knowledge, learning needs, interest etc before giving structured teaching programme. The input is the already existing knowledge of school children regarding dental hygiene. These may depend on their Gender, Type of family, Educational status of parents and monthly family income.

- **Process:** In this study process refers to the different operational aspects in the development and implementation of structured teaching programme. It includes the factors that facilitate or block the implementation of various stages of development of the structured teaching programme. Process of the current is as following:

✓ Development of self structured knowledge questionnaire.

✓ Development of structured teaching programme.

✓ Content validity of the tool and structured teaching programme.

✓ Implementation of tool i: e, Knowledge regarding dental hygiene.

✓ Try out of the tool.

✓ Reliability of the tool

✓ Pilot study

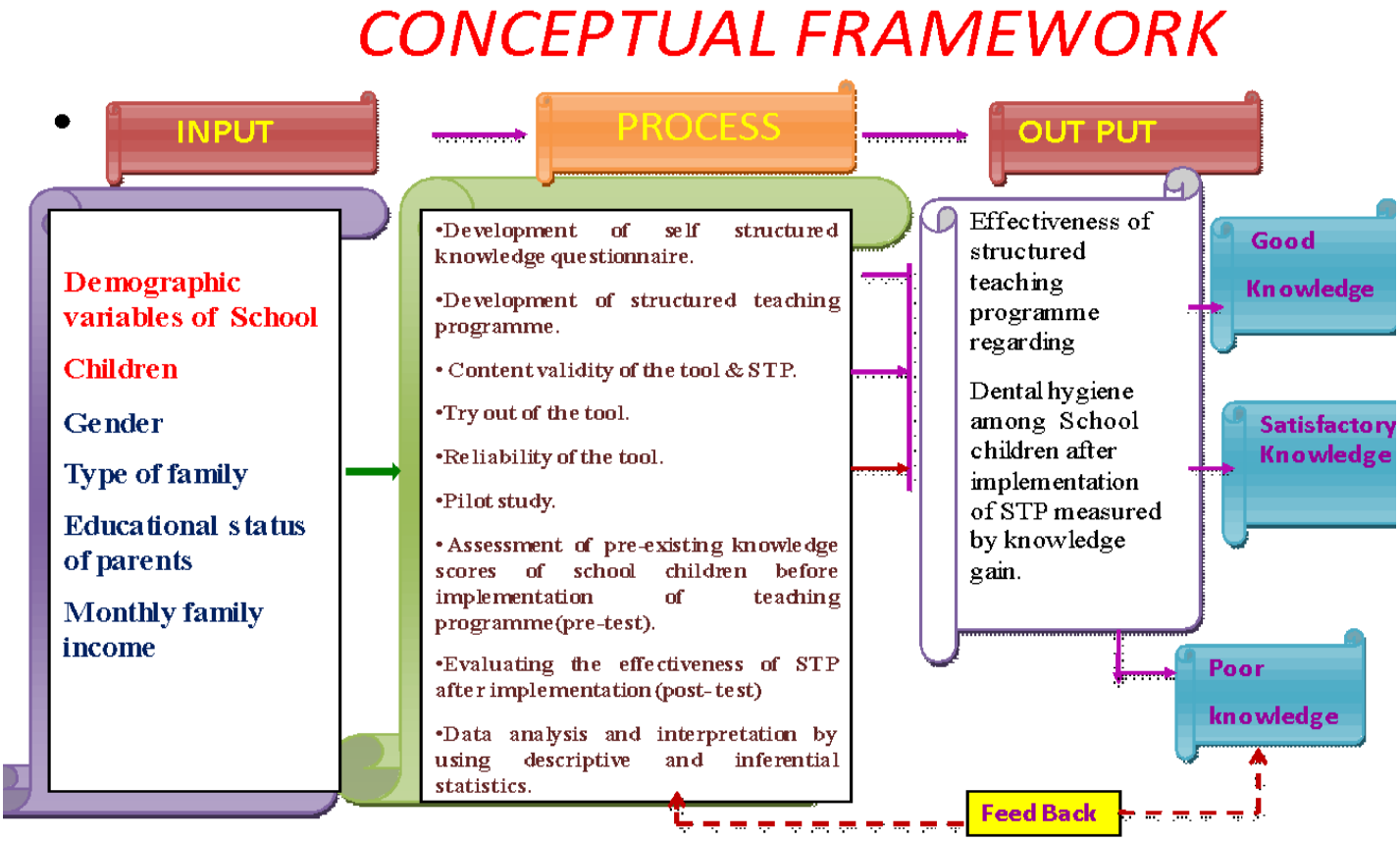
✓ Assessment of pre-existing knowledge score of School Children before implementation of teaching programme.

✓ Evaluating the effectiveness of structured teaching programme after implementation (post- test)

✓ Data analysis and interpretation by using descriptive and inferential statistics.

Output: The output is studied in terms of knowledge of school children regarding dental hygiene after the implementation of structured teaching programme i.e. in terms of its effectiveness after post test. After implementation of structured teaching programme, the knowledge of school children is expected to improve.

- Feedback: In this present study, feedback is not included. .



Conceptual framework based on systems model

Source:- WHO SEARO technical publication no.6. 1985

Summary: - The chapter deals with Background of the study Need of the study, Statement of the research problem, Objectives of the study, Hypothesis, Operational definitions, Assumptions, delimitations and conceptual frame work.

Organization of the report

This chapter dealt with the background of the study, need of the study, statement of the problem, objectives, hypotheses, assumptions, operational definitions, delimitation and conceptual framework.

Further report of the study follows in the next five chapters.

Chapter II: Presents an overview of related review literature with research studies and non- research articles related to the present study.

Chapter III: Is related to methodology of the study which includes research approach, research design, setting, sample and sampling technique, data collection tool and technique, development and description of tool, validity and reliability of the tool, tool try out, pilot study, data collection procedure and plan for data analysis.

Chapter IV: Presents the analysis and interpretation of data.

Chapter V: Presents objective wise discussion.

Chapter VI: Includes a brief summary, major findings, conclusion, nursing implications, limitations and recommendations.

This report ends with the selected references, annexures.

Methodology

According to Faye Abdullah (1979), research methodology involves the systematic procedures by the researcher who starts from initial identification of the problem to its final conclusion.[75]

The present study is aimed to assess 'The Effectiveness of structured teaching programme on knowledge regarding Dental Hygiene among school children in Govt. Middle schools of District Budgam Kashmir. "

This chapter includes: research approach, research design, variables under study, population, setting of the study, sample, sampling technique, sampling criteria for selection of subjects, content validity, development and description of tool & Structured teaching program, reliability of the tool, pilot study, data collection procedure and plan for data analysis.

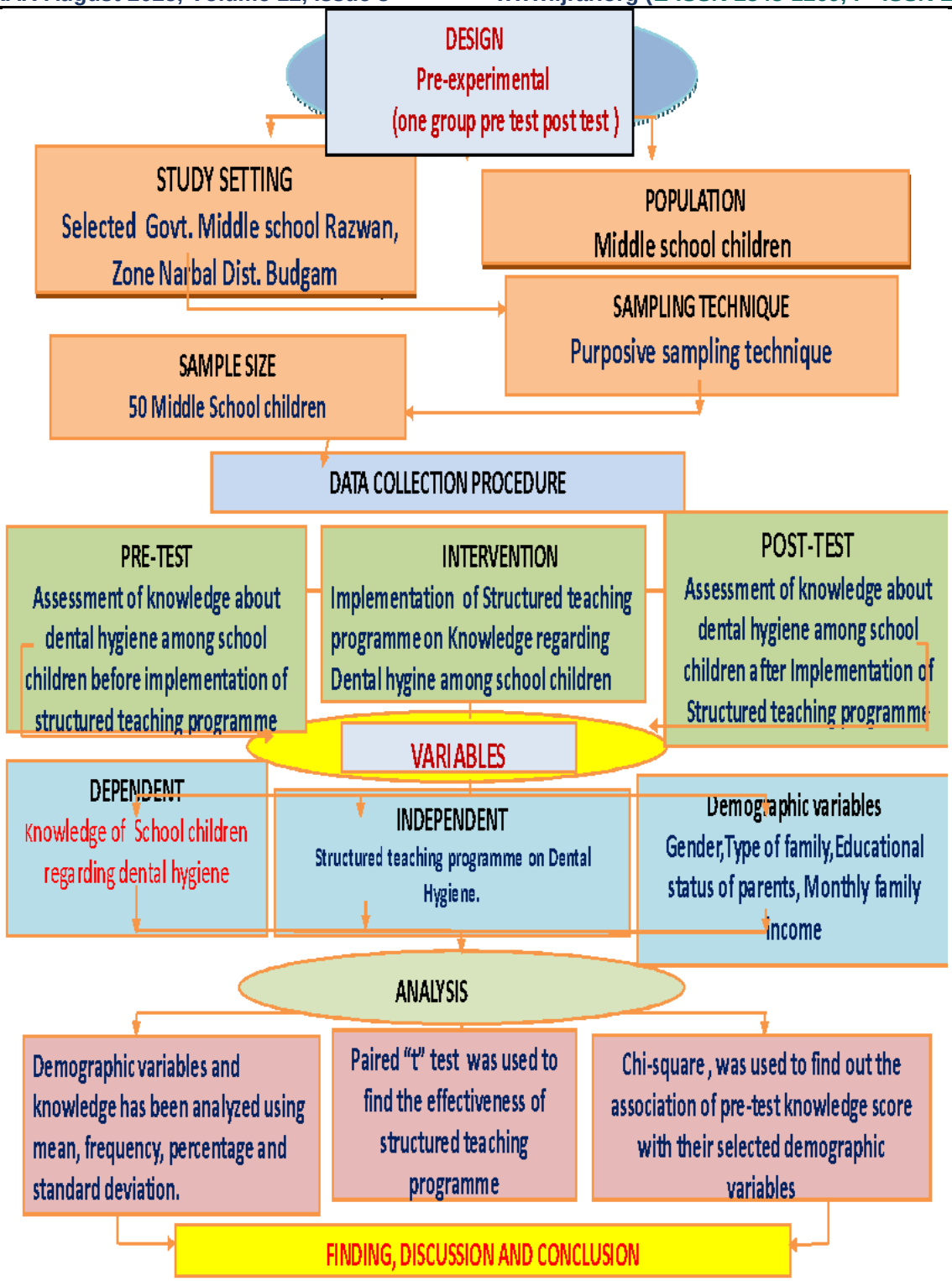


FIGURE-2: SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY

RESEARCH APPROACH:-

The research approach is the umbrella that covers the basic procedure for conducting research. It is a basic procedure for the research enquiry. The research approach helps the researcher to determine what data to collect and how to analyze it.[76] In view of the nature of the problem under study and to accomplish the objectives of the study quantitative approach was found to be appropriate to determine the effectiveness of

structured teaching programme on knowledge regarding Dental Hygiene among school children in Govt. Middle schools of District Budgam Kashmir.

RESEARCH DESIGN:-

The research design is the researchers overall plan for obtaining answer to the research question or for testing the research hypothesis. A research design is a blue print for conducting the study that could maximizes control over factors that could interfere with the validity of findings. [69]

It is the overall operational pattern or frame work of the project that stipulate what information is to be collected, from which sources and by what procedures.

The Research design used in present study was pre experimental (one group pre-test post test) research design. One group pre test post test design is the simplest type of pre experimental design where only one group is selected as the study subjects. A pre test observation of the dependent variables was made on Day 1st before implementation of intervention to the selected group and on the same day intervention was given in the form of structured teaching programme on knowledge regarding dental hygiene. Post test was conducted on the 3th day following the pre-test.

The research design selected for this study was :

Pre Experimental One Group Pre Test Post Test Design.

O_1—Assessment of knowledge regarding dental hygiene using self structured questionnaire (pre-test).

X— Structured teaching programme.

O_2—Assessment of knowledge regarding dental hygiene using same self structured questionnaire (post-test).

Schemetic Representation of Research design.

In the present study Knowledge regarding dental hygiene was administered to school children as a Pre test measure and the Intervention was given in the form of structured teaching programme and Post Test was taken after giving Intervention.

Variables under study:

In quantitative study, concepts are usually referred to as variables, which are the central building blocks of the study.[28]

The present study is aimed to assess the effectiveness of structured teaching programme on knowledge regarding dental hygiene among school children in Govt. Middle school Budgam . The selected variables under study were:

- **Independent variables:** An independent variable is a factor that can be varied or manipulated in an experiment. It is usually what will affect the dependant variable. Therefore the independent variable is the presumed cause. In the present study the independent variable is Structured Teaching Programme on Dental Hygiene of Middle school children.[28]
- **Dependent variables:** A dependant variable is what you measure in the experiment and what is affected during the experiment. The dependant variable responds to the independent variable. Therefore the dependant variable is the presumed effect. In the present study, the dependant variable is Knowledge of School Children regarding Dental Hygiene.[28]
- **Demographic variables:** These include personal characteristics of the research subjects such as Gender, Type of family, Educational status of parents, Monthly family income.

RESEARCH SETTING:

Setting refers to the physical location and conditions where data collection takes place or the location for conducting the research is referred to as the setting.[77]

The present study was carried out at Govt. Middle School Razwan, Zone Narbal. The particular zone is situated in centre of Dist. Budgam, Jammu and Kashmir. Setting was selected for the study on the basis of feasibility of conducting the study and availability of the sample.

Study Population:-

Population is the aggregate of all the units in which a researcher is interested. Or it is a set of people or entities to which the results of research are to be generalized.[29]

The population of the present study consists of Middle School Children who are present in the particular area at the time of data collection period and meeting the eligibility criteria. These include School Children studying in 8^{th} standard, under Zone Narbal.working under Chief education officer Budgam.

Sample and sampling technique:-

Sample:- Sample is the portion of the population that represents the entire population. Thus, it is the subset of the population elements. [29]

Sample used in the present study consists of **50 School children** fulfilling the eligibility criteria.

Sampling technique:-It is the process of selection of the sample. For the present study, sample consists of school children of Govt, Middle School Razwan of Dist. Budgam. In the present study, purposive sampling technique which is a type of non–probability sampling was used to draw the required sample size.

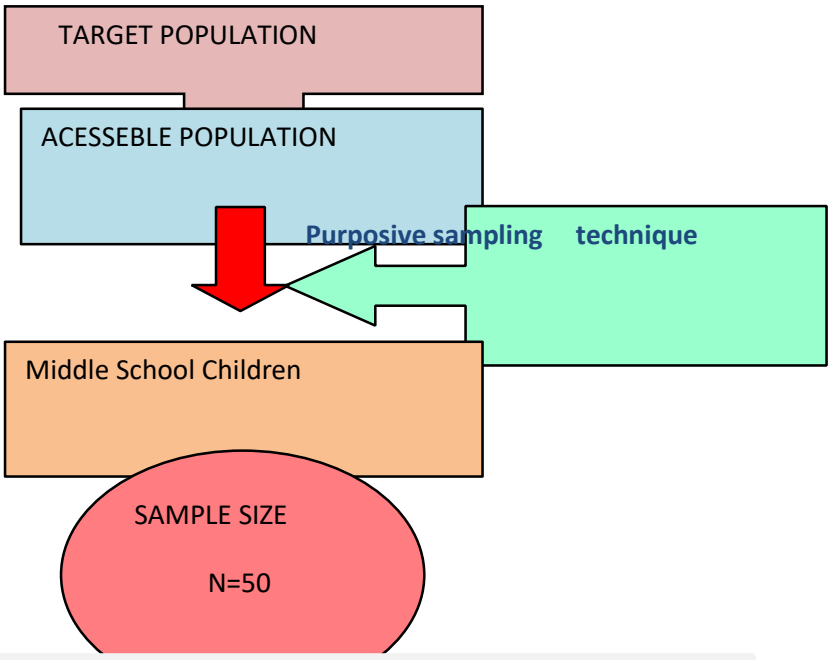


Fig 3: Schematic representation of sampling technique

SAMPLING CRITERIA

The researcher specifies the characteristics of the population by detailing inclusion & exclusion criteria in the study. Inclusion criteria is a characteristic that each sample element to be included in the sample must possess. Exclusion criteria is a characteristic that a participant may possess that could confound the results of the study. [76]

The criteria used to define a population for a research project has implications for both the interpretation of the results & generalizability of the findings. Following criteria were set for the selection of study subjects:

1. **Inclusion Criteria for Sampling:**

   The subjects included in the study were:-

   - Children of both genders studying in 8th standard.
   - Children willing to participate in the programme.
   - Children available at the time of data collection.

2. **Exclusion Criteria for Sampling:**

   The subjects excluded from the study were children:

   - Studying in other than 8th standard.
   - Not willing to participate in the programme.
   - Not available at the time of data collection.

Data collection instrument:

- Data collection instrument is a device used to measure the concept of interest in a research project that a researcher uses for collecting the data.[78] In the present study, data collection instrument used was self Structured questionnaire for assessing the knowledge regarding dental hygiene among school children.

Development of the tool: (Structured knowledge questionnaire)

The tool was prepared on the basis of:

- Objectives of the study.
- Conceptual framework.
- Extensive review of literature–Related literature reviews like books, journals, articles, periodicals, published and unpublished research studies were reviewed and used for the development of the tool.
- Discussion with expert- **Eleven** Experts from the field of Medicine and Nursing were consulted for developing an appropriate tool.
- Informal discussion with peer group.
- Personal experience.

Preparation of blue print: The blue print was prepared to construct the tool. (ANNEXURE XI)There were 45 knowledge items regarding Dental Hygiene among school children. The questionnaire included three broad areas i.e. items regarding knowledge about Anatomy of teeth, items regarding knowledge about dental hygiene and cleanliness of teeth and items regarding knowledge about Dental problems , dental treatment and Diet.

Description of the tool:

Self structured questionnaire to assess the knowledge regarding Dental hygiene among school children. It consists of two sections:

Section I: **Demographic characteristics of subjects.**

It includes:- Gender, Type of family , Educational status of parents and monthly family income..

Section II: Questions related to knowledge regarding Dental hygiene among Middle school children.
It includes:- Anatomy, structure, types and functions of teeth, Dental Hygiene, technique of tooth brushing and also knowledge about common dental problems, treatment and diet.

Ethical Consideration and permission from the Concerned authority:-

After obtaining the ethical clearance from the Institute Ethical Committee (IEC) of SKIMS, the data collection process was started by the researcher (ANNEXURE II). Permission was obtained from the concerned Headmaster of Govt. Middle School Razwan, Zone Narbal after explaining the purpose of the study prior to the data collection process (ANNEXURE III). Prior to the data collection the investigator familiarized him-self with the subjects and explained the purpose of the study. Confidentiality was assured and informed consent was taken after giving information sheet from the subjects.

CONTENT VALIDITY OF TOOL:-

Content validity refers to the degree to which an instrument measures what it is intended to measure. To ensure content validity, the Tool was given to 11experts in the field of nursing, and social and preventive medicine, (ANNEXURE IV) along with, objectives of the study, and evaluation criteria checklist. (ANNEXURE V.) (ANNEXURE VI.)

The tool was modified as per the suggestions of the experts and the final tool was constructed.

Tool try out of structured knowledge questionnaire:-

Pretesting of the tool was done to check the clarity, feasibility of the tool. Tool try out was carried out from 8/8/17 to 10/8/17. It was administered to 5% of the total sample size i.e. 3 school children. It was found that tool was clearly understood to school children & tool had no ambiguity and it took 40-45 minutes to complete the tool.

Development of final draft of tool

The structured knowledge questionnaire comprised of two sections (ANNEXURE XII)

Section A:- Demographic variables on 4 items namely; Gender, Type of family, Educational status of parents and Monthly family income.

Section B:-Structured knowledge questionnaire which consists of 45 items/questions. It is further divided into three parts to assess the knowledge of School Children regarding Dental hygiene.

Section	Area	Subarea	Item	No. of items
I	Demographic variables		Gender Type of family Educational status of parents Monthly family income	2 2 4 4
II	Knowledge regarding Dental hygiene among middle school children	Section A	Anatomy, Structure, Types and Functions of teeth.	8
		Section B	Dental Hygiene, Technique of tooth brushing.	20
		Section C	Common Dental problems, treatment and diet.	17

Scoring procedure

Score of 1 mark was allotted for each correct answer and 0 for each incorrect answer. Thus total 45 marks were given for assessment of knowledge. For each correct response a score of 'one' and for each wrong response a score of zero was given. (ANNEXURE XI)

To interpret the level of knowledge. The knowledge score was graded into three categories as,

Knowledge level	knowledge percentage (%age)	Knowledge Score
Poor	< 50%	0-15
Satisfactory	50-70	16-30
Good	> 70	31-45

Maximum= 45, Minimum=0

Table 1 Scoring pattern for knowledge assessment regarding dental l hygiene, Scoring key was prepared on the basis of the studies conducted by Pranali P and Shinde .

Reliability of tool:

The reliability of an instrument is the degree of consistency with which it measures the attribute it is supposed to measure. Reliability of tool was measured by collecting data from 10 School children studying in Govt, Middle school Razwan Zone Narbal of Dist. Budgam. Correlation of the test re test was found by using Karl Pearson correlation coefficient formula and reliability co-efficient of the whole test was established by formula and the reliability computed was 'r' =0.9 and the tool was found to be reliable.

Karl Pearson's correlation coefficient.

$$\gamma = \frac{\sum_1^n (X1-\underline{X})(y1-\underline{Y})}{\sqrt{\sum_1^n (X1-\underline{X})2(Y1-\underline{Y})^2}}$$

Development of Structured Teaching Programme: (ANNEXURE XIII)

The structured teaching programme regarding Dental hygiene of school children was developed based on review of research and non-research literature and the opinions of the experts.

The steps involved in the development of structured Teaching Programme were:

1. Literature review.
2. Framing the outline of the content.
3. Preparation and organization of the content.
4. Deciding the method of instruction and A/V aid.
5. Content validation of structured teaching programme.
6. Preparation of final draft of STP.

II. Description of Structured Teaching Programme:

The Structured Teaching Programme was titled as "Structured Teaching Programme on knowledge regarding Dental hygiene among school children". It included; Dental hygiene, Anatomy of teeth, types, tooth eruption chart and functions of teeth, Technique of Tooth brushing and Importance of Dental visits and diet.

Description of Structured teaching program:

Table 2

Areas	**Content**
1	Dental Hygiene- Meaning, definition and importance of dental hygiene.
2	Teeth- Anatomy of teeth, Types of teeth and Functions of teeth.
3	Tooth eruption chart.
4	Common Dental problems and their prevention.
5	Tooth Brushing-Technique of tooth brushing
6	Visits to Dentist- importance and frequency of Visits to Dentist.
7	Diet- importance and rich sources of Vitamin E to prevent scurvy.
8	Preventive measures.

PILOT STUDY:

Pilot study is the trial run of the methodology planned for the major project. The purpose of the pilot study is two-fold: to make improvement in the research project and to detect problems that must be solved before the major study is attempted.

Pilot study was conducted on with 10% of the identified sample in order to test the data collection method, instrument and reliability of the proposed study. The pilot study was conducted in Govt. Middle school Razwan Budgam. At the beginning of the data collection process, school children were informed about the purpose, aims and objectives of the study. All ethical processes were adhered to.(ANNEXURE VIII)

School children were informed that participation in the study is voluntary and they were also asked to complete a consent form (ANNEXURE IX) confirming their participation and acceptance into the study. The questionnaire was self-administered allowing the researcher to offer assistance and provide clarity to questions at the school where he was present. Completion of the questionnaire lasted for 30 minutes. School children were requested not to leave any of the items/questions blank, but to rather mark 'Don't know'. Both English and Urdu version of tool is used for data collection.. Contact details of the researcher were available to school children in case they needed to contact the researcher. Pilot study was conducted on 10% of the sample size

i.e. 5 school children and were assured of the confidentiality of their identity in a similar way as the final data collection and they were selected by using purposive sampling technique. The pre test was done by self structured questionnaire for 15-20 minutes. After pre test the investigator administered Structured teaching programme regarding dental hygiene for 25-30 minutes. After giving structured teaching programme;10 minutes were allotted for discussion. The post test was conducted after 3rd day using same structured questionnaire. The same procedure was followed for all 5 school children. The mean post-test score 29.05 was higher than the pre-test score of 19.02. After conducting pilot study it was found that the study was feasible. It was also found that school children were co-operative, the tool was relevant and the cost of the study was within the limit..

Changes to the instrument

No major changes were made to the questionnaire, except for adding additional sections to the demographic information of the participants such as Educational status of parents.

DATA COLLECTION PROCEDURE.

Data collection is the gathering of information needed to address a research problem. The Data was collected from 21/08/2017 to 18/09/2017 at Govt. Middle School Razwan, Zone Narbal Budgam Kashmir.

- A formal written permission was obtained from concerned authority –Headmaster Govt. Middle school Razwan Budagam Kashmir (**Annexure III).**

- The investigator introduced himself to the Headmaster and other staff of the Govt. Middle School Razwan ,Zone Narbal Budgam Kashmir and explained the purpose of the study. All the staff members in the school were co-operative.

- 50 school children of the Govt. Middle School Razwan ,Zone Narbal Budgam Kashmir were selected by Purposive Sampling technique.

- The study subjects were approached and rapport was established by self- introduction & they were informed about the purpose of the study. The confidentiality, anonymity and autonomy of their responses were assured and informed written consent was obtained from study subjects to confirm their willingness to participate in the study. (**ANNEXURE-IX**)

- Pre-test was done by using structured Questionnaire to assess the knowledge regarding Dental hygiene among school children. Pre-test along with intervention was carried on day one (1) 0n 22 study subjects, 23 Aug.2017) .It took about **40-45** minutes for Questionnaire per study subject to complete the structured Questionnaire. Intervention (Structured Teaching Programme) was carried out with the help of A.V aids, flip book and chart. It took about **40-45** minutes to complete structured teaching programme on knowledge regarding Dental hygiene.

- Post-test was carried on 3th day (on 26 August 2017) by administering the same structured Questionnaire in order to assess the effectiveness of structured teaching programme regarding Dental hygiene among school children.It took **30-40** minutes for post -test.

- On day 1st. (22 subjects) i.e. school children were taken from 10-30 am - 11.40 am for pre-test, then after a short break of **15** minutes, STP was administered to them from 12noon – 12.45 pm. On day 8th, 18 subjects were taken from 10.30 am to 11.40 am for pre-test, then after a short break of **20** minutes , STP was administered to them from 12noon – 12.45 pm . On Day 14th day, 10 subjects were taken from 10.30 am to 11.40 am for pre-test, then after a short break of **20** minutes , STP was administered to them from 12noon – 12.45 pm.

- On 4th, 11th and 17th day i.e. 26/08/17, 30/08/17 and 4/09/17 post test of subjects was conducted.

- Data collected was analyzed and tabulated by using both inferential and descriptive statistics.

- The results of the data collected were recorded in the master data sheet (**Annexure XIV).**

The overall data collection procedure is shown in the Table- 3

Table 3:- ***Data collection schedule***

Day	**Date**	**Time**	**Name of School**	**No. of samples**	**Action**
1st	23/8/17	10:30am-11:40am 12:00Noon-12:45pm	GOVT. Middle School Razwan	22	Pretest 45 minutes Break 15 minutes STP 45 minutes
4th	26/8/17	12:00-12:30pm	Do	Do	Post test 30 min
8th	27/8/17	10:30am-11:40am 12:00 Noon-12:45 pm		18	Pretest 45 minutes Break 15 minutes STP 45 minutes
11th	30/8/17	12:00-12:30pm	Do	Do	Post test 30 min
14th	31/8/17	10:30am-11:40am 12:00 Noon-12:45 pm		10	Pretest 45 minutes Break 15 minutes STP 45 minutes
17th	4/9/17	12:00-12:30pm		Do	Post test 30 min

PLAN OF DATA ANALYSIS:

Based on the objectives data analysis was planned to be done using descriptive and inferential statistics. Findings were decided to be presented in the form of tables and figures.

Descriptive statistics

1. Frequency and percentage distribution is used to describe the demographic variables.
2. Mean and standard deviation is used to assess the knowledge regarding Dental hygiene among school children.

Inferential statistics

a. Paired' t-test was used to compare the pre-test and post test knowledge regarding Dental hygiene among school children.

b. Chi square was used to analyze the association between pre-test knowledge score of School children regarding dental hygiene with their selected demographic variables.

Summary : The chapter III deals about the research approach which is quantitative, one group pre-test post-test research design, sample and sampling technique, development and description of the tool, i.e. the self structured knowledge questionnaire is used for the data collection after establishing their validity and reliability, pilot study, and plan for the data analysis.

Analysis and Interpretation

Analysis is the process of organizing and synthesizing the data so as to answer research questions and test hypothesis. It is also defined as the process of systematically applying statistical and logical techniques to describe, summarize and compare data. Analysis is the categorizing, ordering, manipulating and summarizing of the data to obtain answer to research question.[29]

This chapter deals with the analysis and interpretation of the results of the data collected from the sample of 50 Middle school children regarding dental hygiene.

The analysis and interpretation of the data of this study was based on the data collected through self structured questionnaire on knowledge of Middle school children regarding Dental hygiene. The results are computed based on objectives and hypothesis of the study using descriptive and inferential statistics.

On the basis of the research statement, following hypothesis was formulated

HYPOTHESIS:-

H_1-The mean post test knowledge of middle school children regarding dental hygiene is significantly higher than the pre-test knowledge after implementation of structured teaching programme at 0.05 level of significance.

H_2- There is significant association between pre-test knowledge level of middle school children with their selected demographic variables(Gender, Type of Family, Educational status of parents and Monthly Family income) at 0.05 level of significance.

OBJECTIVES OF THE STUDY:

1) To assess the pre-existing knowledge score of middle school children regarding dental hygiene before implementation of structured teaching programme (pre-test).
2) To assess the knowledge score of middle school children, after implementation of structured teaching programme (post-test).
3) To determine the effectiveness of structured teaching programme regarding dental hygiene among middle school children by comparing pre-test and post-test knowledge scores of middle school children.
4) To determine the association of pre-test knowledge score of middle school children regarding dental hygiene with their selected demographic variables (Gender, type of family, educational status of parents, monthly family income).

The analysis and interpretation of the data of this study was based on the data collected through structured questionnaire regarding dental hygiene.The results were computed by using descriptive and inferential statistics based on objectives and hypotheses of the study**.**

Descriptive statistics:

I. Frequency and percentage distribution is used to describe the demographic variable.

II. Mean and standard deviation is used to assess the knowledge regarding Dental hygiene among Middle school children.

III. Inferential statistics

I. Paired-'t' test has been used to assess the effectiveness of structured teaching programme.
II. The Chi square was used to find the association of pre-test knowledge scores with their selected demographic variables.

ORGANIZATION AND PRESENTATION OF DATA:

The collected data was edited, tabulated, analysed, interpreted and findings obtained were presented in the form of tables and diagrams which were represented under the following sections.

Section 1: Description of demographic characteristics of middle school children

Section 2: Assessment of knowledge of School children regarding Dental hygiene

2.1 Comparison of pre-test and post test mean knowledge scores of School children regarding Dental hygiene.

2.2 Distribution of pre-test and post test knowledge scores of School children regarding Dental hygiene.

2.3. Comparison of pre-test and post test knowledge scores of School children regarding Dental hygiene

2.4 Distribution of Area wise enhancement of mean difference of knowledge scores regarding items on Anatomy of teeth, Dental hygiene and Cleanliness and Common Dental problems and Diet.

Section 3: Association of pre test knowledge scores of Middle school children with their selected demographic variables such as Gender, Type of family, Educational status of parents and Monthly family income.

Section1:- Description of demographic characteristics of School children.

Table 4:- Frequency & Percentage Distribution of subjects as per their Gender.

N=50

Variable	Category	Frequency	Percentage
Gender	Males	34	68.0%
	Females	16	32.0%

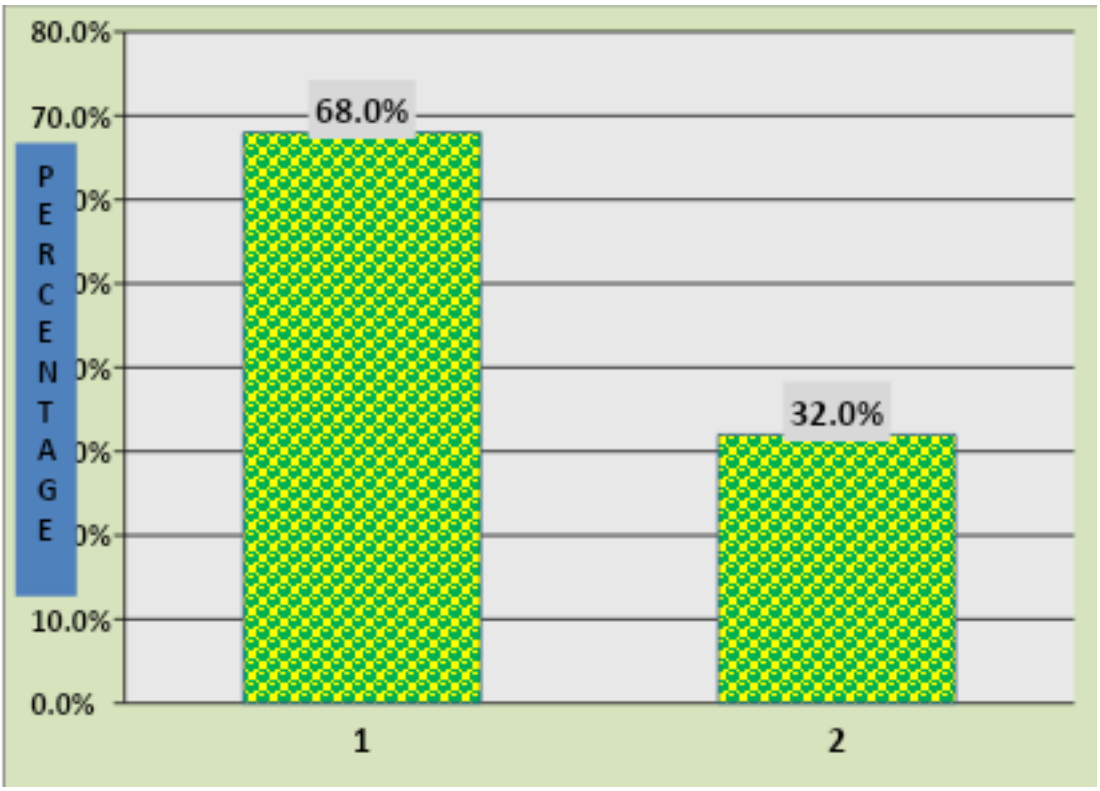


Figure-4:- Bar diagram showing percentage distribution of subjects as per the gender.

As shown in table 4 & Fig 4 above, majority of subjects 34(68.0%) were males and 16(32.0%) were females.

Table-5:- Frequency and percentage distribution of subjects as per their type of family.

N= 50

Variable	Category	Frequency	Percentage
Type of family	Joint	29	58.0%
	Nuclear	21	42.0%

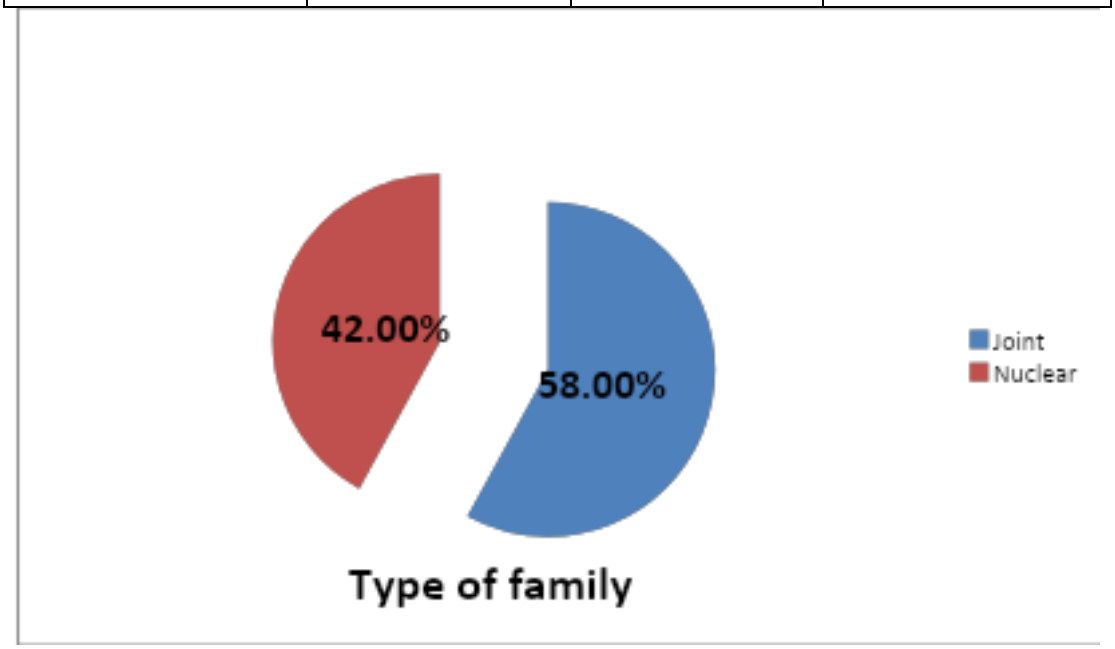


Figure No: 5 Pie diagram showing distribution of subjects as per their type of family.

The table 5 and figure 5 shows that out of 50 Samples, 29(58.0%) Subjects belonged to joint families and 21(42.0%) Subjects were from nuclear families.

Table-6:- Frequency and percentage distribution of subjects as per their Educational status of parents.

N=50

Variable	Category	Frequency	Percentage
Educational Status of Parents	Illiterate	7	14.0%
	Secondary	13	26.0%
	Graduate and above	23	46.0%
	Professional	7	14.0%

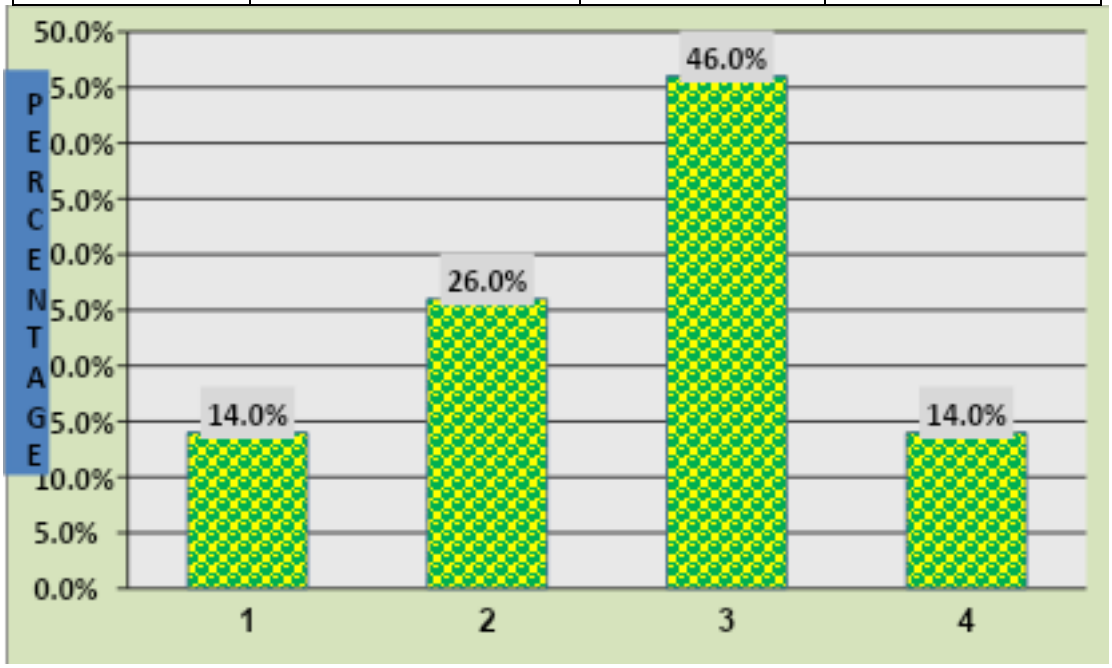


Figure-6:- Bar diagram showing distribution of subjects as per their Educational status of parents.

Table 6 and figure 6 above shows that out of 50 samples, 14(16.7%) parents were illiterate, 13 (26.0%) parents had secondary qualification, 23(46.0%) parents had graduates and 7(14.0%) had professional qualification.

Table-7:- Frequency and percentage distribution of subjects as per their Monthly family income.

N=50

Variable	Category	Frequency	Percentage
Monthly Family Income	Less than 5000	6	12.0%
	5000-10000	10	20.0%
	10000-30000	21	42.0%
	Above 30000	13	26.0%

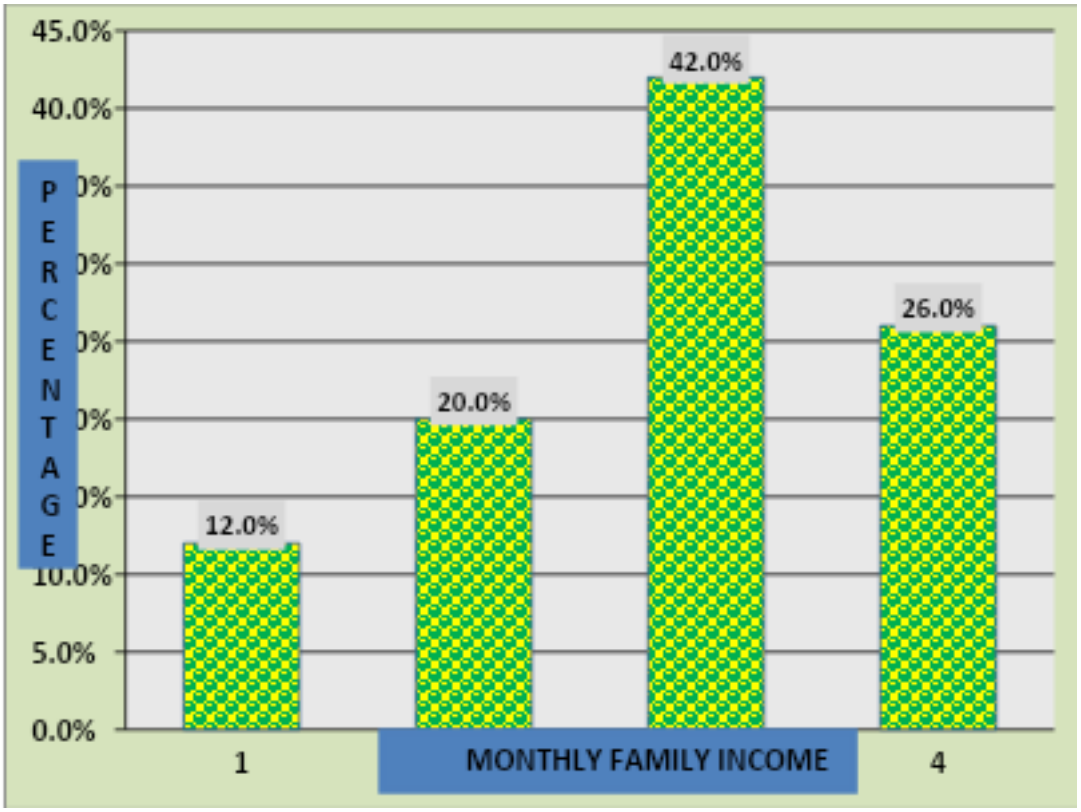


Figure -7:- Bar diagram showing distribution of subjects as per their monthly family income.

The data presented in table 7 and figure 7 shows that 6(12.0%) had monthly family income less than 5000, 10(20.0%) had family income between 5000 and 10000, 21(42.0%) had family income between 10000 and 30000 and 13(26.0%) had family income above 30000.

Section 2. Analysis and interpretation of knowledge of Middle school children regarding Dental hygiene.

Table 8:- Mean, Median, Standard deviation and Range of pre-test and post-test knowledge scores among subjects.

N=50

Group	Mean	Standard deviation	median	Maximum	Minimum	Range
Pretest	22.58	3.78	23	29	12	17
Post-test	31.14	3.812	32	37	21	16

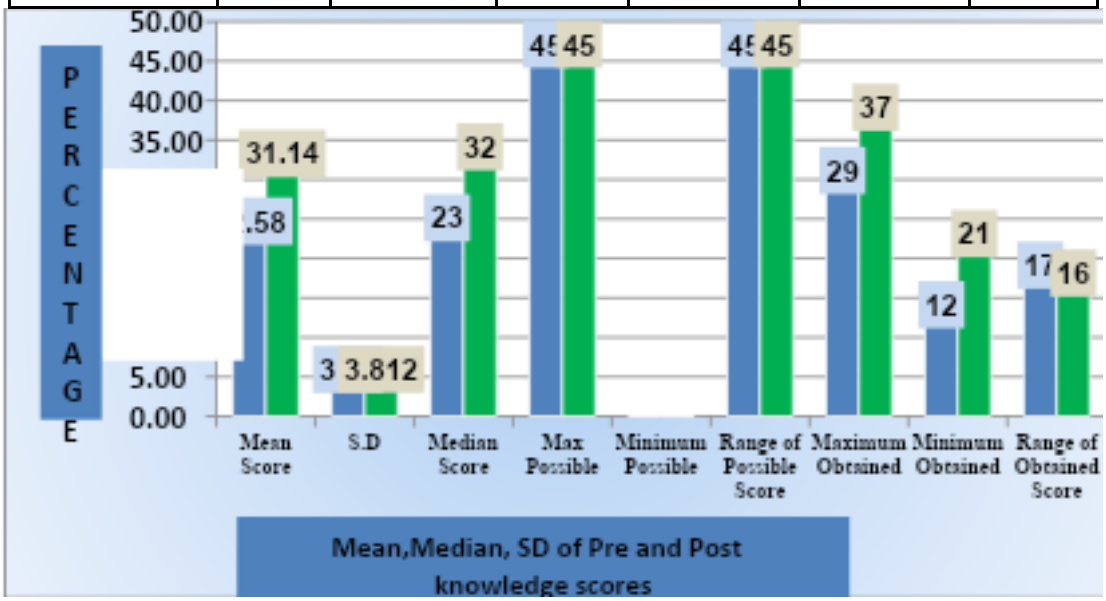


Figure8. Bar diagram showing Mean, Median, Standard deviation, Range of Pre-test and Post-test Scores.

Figure-8 and table -8 above depicts that overall pre-test mean score was 22.58, standard deviation was 3.78 , median was 23 & range was 17, also post-test mean score was 31.14 ,standard deviation was 3.812 , median was 32 and range was16.

Table-9:- Comparison of pre-test and post-test mean knowledge scores of subjects regarding dental hygiene.

N=50

Group (Middle school children)	Mean / standard deviation	Mean difference	P value
Pre-test score	22.58±3.78	8.56	<0.001
Post test score	31.14±3.812		

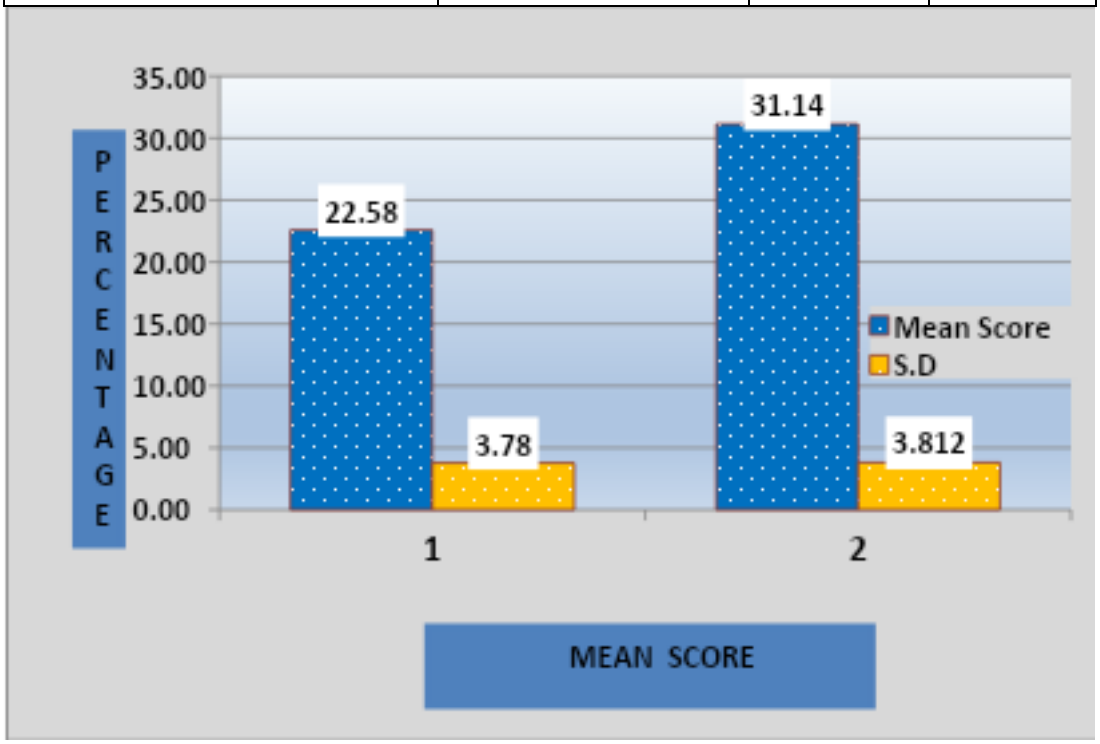


Figure 9:- Bar diagram showing pre-test and post-test mean scores.

Figure 9 and table 9 depicts that overall pre score mean (%age) was 22.58 and overall post score mean (%age) was 31.14% % with mean difference of 8.56 and p value ≤ 0.001 which was lower than the tabulated value of p=0.005.Hence the null hypothesis was rejected and research hypothesis H1 was accepted which states that there is significant difference between the mean pre-test and post-test knowledge scores of school children regarding dental hygiene at 95% confidence interval or 0.05 % level of significance. This indicates that the teaching programme was effective.

Table -10:- Distribution of pre-test level of knowledge of subjects regarding dental hygiene

N= 50

Level of knowledge	Percentage Score	Level of respondents	
		No(F)	%age
Poor	<50%	3	6%
Satisfactory	50-7o%	47	94%
Good	> 70%	0	0%

Maximum=45, Minimum=0

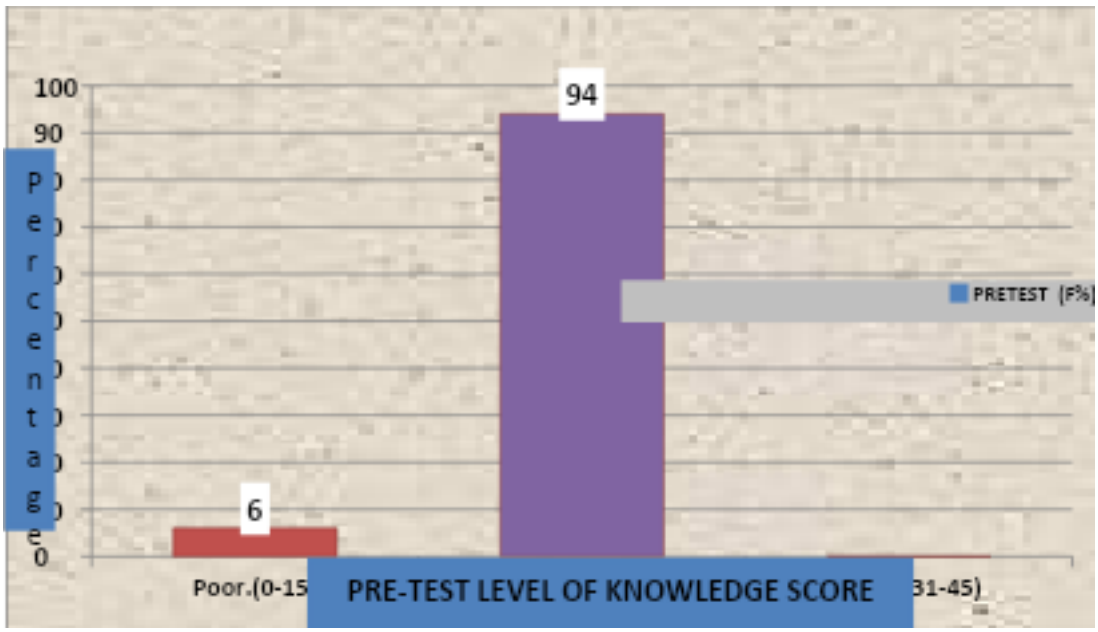


Figure 10:- Distribution of pre-test level of knowledge of subjects regarding dental hygiene.

Table 10 and figure 10 shows that in pre-test 3(6%) of subjects had poor knowledge, 47(94%) of subjects had satisfactory knowledge, while as none of the subjects had good knowledge.

Table 11:- Distribution of post test level of knowledge regarding dental hygiene among middle school children.

N=50

Level of knowledge	**Percentage Score**	**Level of respondents**	
		No(F)	%age
Poor	<50%	0	0%
Satisfactory	50-70%	19	38%
Good	> 70%	31	62%

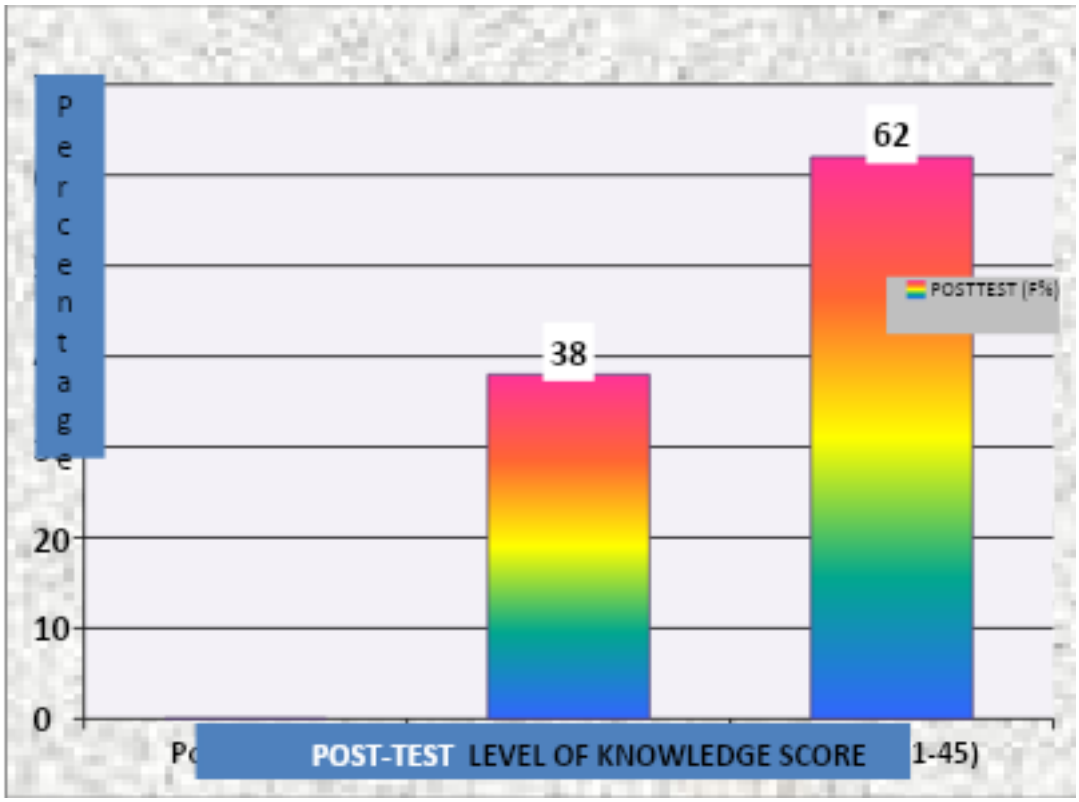


Figure 11 and Table 11 shows that in post-test 31(62%) had good knowledge and 19(38%) had satisfactory knowledge regarding dental hygiene among school children.

Table 12:- Comparison of pre-test and post-test level of knowledge on dental hygiene among school children.

N=50

Level of knowledge	Percentage Score	Pre-test	Post-test
		% age	%age
Poor	< 50%	6%	0%
Satisfactory	50-70%	94%	38%
Good	< 70%	0%	62%

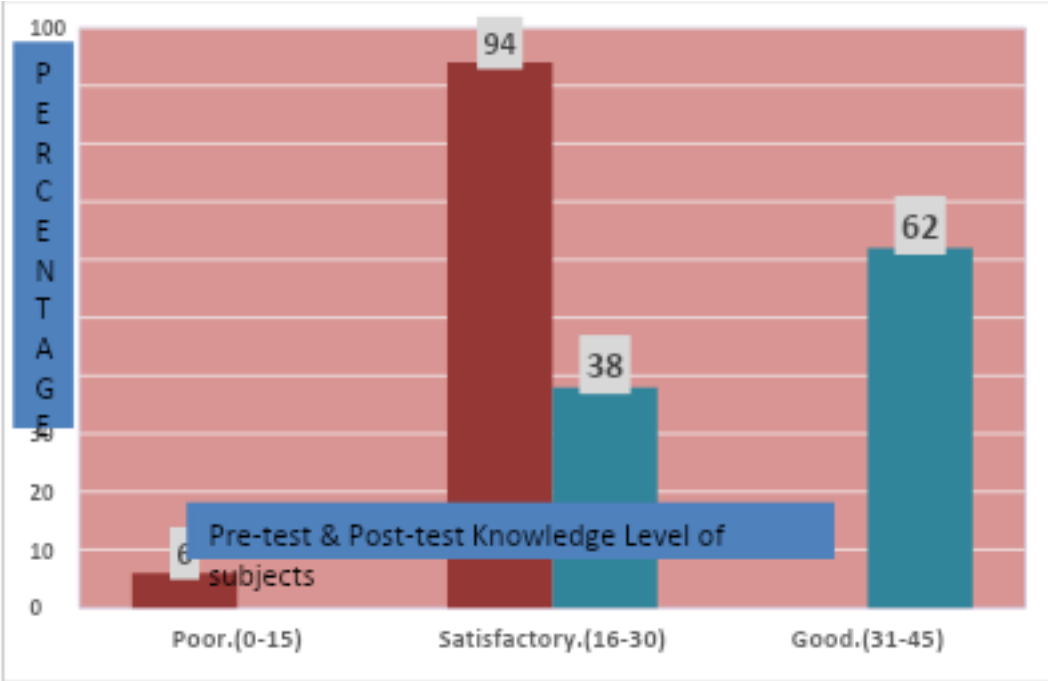


Table 12 and figure 12 shows in the pretest-test, 3(6%) had poor Knowledge 47(94%) had satisfactory Knowledge and 0(0%) had good Knowledge But in posttest test 0(0%) had poor Knowledge 19(38%) had satisfactory and 31(62%) had good Knowledge regarding dental hygiene.

Figure 13:- Area- wise distribution, enhancement of mean percentage knowledge scores.

N=50

Descriptive Statistics	Knowledge regarding Anatomy of Oral Cavity		Knowledge regarding dental hygiene, cleanliness of teeth		Knowledge regarding Dental problems, Dental treatment and diet	
	Pre	Post	Pre	Post	Pre	Post
Mean Score	4.44	6.70	8.90	14.06	9.24	10.38
S.D	0.61	0.974	1.71	2.132	2.67	2.702
Median Score	4.5	7	9	14	10	11
Max Possible	8	8	20	20	17	17
Mean Percentage	55.50	83.80	44.50	70.30	54.40	61.10
Mean Difference	2.260		5.160		1.140	
Mean Difference %	28.300		25.800		6.700	
Paired T Test	15.277 *Sig		19.213 *Sig		5.151 *Sig	
P value	0.0000		0.0000		0.0000	
Table Value at 0.05 do 59	2.01		2.01		2.01	
Result	Significant		Significant		Significant	

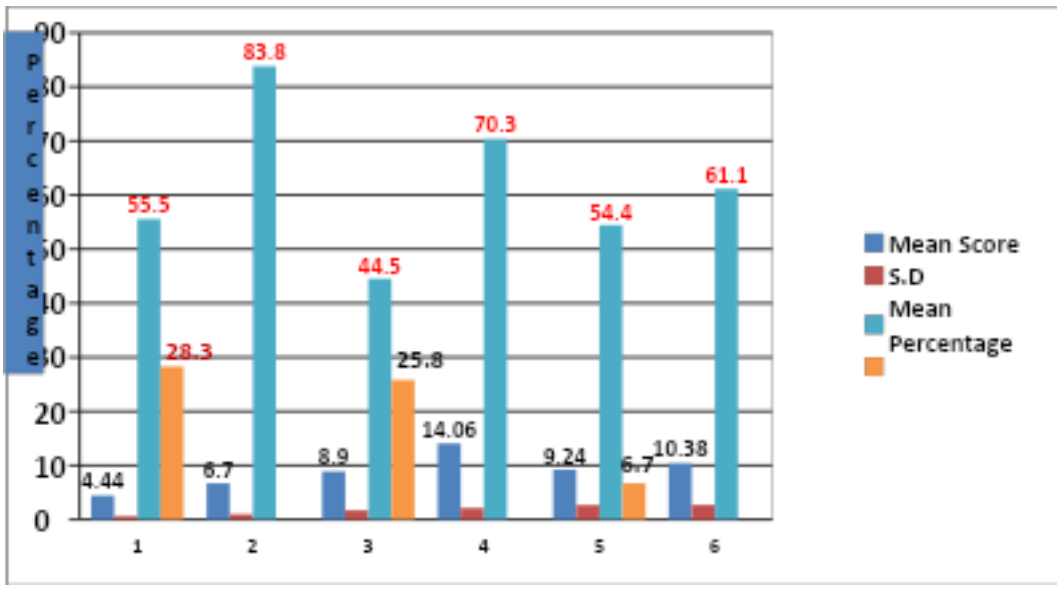


Figure13. Bar diagram shows comparison of pre-test and post-test knowledge score about various aspects of questionnaire.

The data in table 13 and figure 13 reveal that the pre-test score mean percentage of knowledge regarding anatomy of teeth, knowledge regarding dental hygiene and cleanliness and knowledge regarding dental problems, treatment and diet is 4.44,8.90, and 9.24 respectively and post-test score of respective aspects is 6.70,14.06 and 10.38 respectively and anatomy of teeth mean enhanced by 28.3% , dental hygiene by 25.8% and dental treatment by 6.7% respectively.

Section 3. Analysis and interpretation of data to find out an association between pre-test knowledge scores of subjects with selected demographic variables.

Table -14:- Association of pre-test knowledge scores of subjects with their selected demographic variables. The chi-square test was used to determine the association **between the score levels and selected demographic variables**

N=50

Association Of Pretest Test Knowledge Scores With Selected Socio-Demographic Variables.									
Variables	Categories	Good	Satisfactory	Poor	Chi Test	P Value	Df	Table Value	Result
Gender	Male		31	3	1.502	0.220	1	3.841	NS*
	Female		16	0					
Type of Family	Joint		26	3	2.311	0.128	1	3.841	NS*
	Nuclear		21	0					
Educational Status of Parents	Illiterate		4	3	19.605	0.000	3	7.815	S*
	Secondary		13	0					
	Graduate and above		23	0					
	Professional		7	0					
Monthly Family Income	Less than 5000		3	3	23.404	0.000	3	7.815	S*
	5000-10000		10	0					
	10000-30000		21	0					
	Above 30000		13	0					

S*=significant N.S*= Non significant

Table 14, depicts that there is only significant association between educational status of parents and monthly family income .Hence null hypothesis (Ho) is rejected and Research hypothesis (H_2) is accepted for educational status of parents and Monthly family income, which states that there is significant association between pre-test knowledge score of school children with educational status of parents and monthly family income at 0.05% level of significance. However no significance is found with gender and type of family.

Summary of the chapter.

This chapter deals with the analysis and interpretation of the data collected from 50 subjects regarding dental hygiene among middle school children. An effort has been made to analyze the demographic variables of middle school children with the purpose to evaluate the effectiveness of structured teaching programme regarding dental hygiene among school children.

Discussion

This chapter presents the major findings of the study and reviews them in relation to findings from the results of the previous studies. The findings of the study were discussed as per the objectives and hypotheses. The present study was aimed to assess the effectiveness of structured teaching programme on knowledge regarding dental hygiene among school children in Govt. Middle school razwan, Zone Narbal Dist. Budgam.

Purposive sampling technique was used to select study subjects. The data was collected from 50 Middle school children in Govt. Middle school razwan, Zone Narbal Dist. Budgam Kashmir and was analyzed keeping in view the objectives of the study.

OBJECTIVES:

5) To assess the pre-existing knowledge score of middle school children regarding dental hygiene before implementation of structured teaching programme (pre-test).
6) To assess the knowledge score of middle school children, after implementation of structured teaching programme (post-test).
7) To determine the effectiveness of structured teaching programme regarding dental hygiene among middle school children by comparing pre-test and post-test knowledge scores of middle school children.
8) To determine association of pre-test knowledge score of middle school children regarding dental hygiene with their selected demographic variables (Gender, type of family, educational status of parents, monthly family income)

HYPOTHESIS:-

H_I-The mean post test knowledge of middle school children regarding dental hygiene is significantly higher than the pre-test knowledge after implementation of structured teaching programme at 0.05 level of significance.
H_2- There is significant association between pre-test knowledge level of middle school children with their selected demographic variables at 0.05 level of significance.

Major findings of the study:
Findings of the study subjects were organized as follows:
Section I: - Description of demographic variables of study subjects.

This section deals with frequency and percentage distribution with respect to their Gender, Type of family, Educational status of parents and Monthly family income.

- <u>According to Gender</u>: - Majority34 (68.0%) of School children were males and 16(32.0%) were Females.
- <u>According to Type of family:-</u>Majority 29 (58.0%) of the school children belonged to joint families and only 21 (42.0%) belonged to nuclear families.
- <u>According to Educational status of parents:</u> - Majority 23(26.0%) of parents were graduate, 13(26.0%) of parents had secondary education, 7(14.0%) of parents had professional qualification and 7(14.0%) of parents were illiterate.

- According to Monthly family income**: -** Majority 21(42.0%) of the subjects had Monthly family income between 10000-30000, 13(26.0%) of subjects had Monthly family income above 30000, 10(20.0%) of subjects had Monthly family income between 5000-10000 and 6(12.0%) of subjects had Monthly family income less than 5000.

Section II:

Section II. (a): Description of pre-test and post –test Knowledge scores of study subjects regarding dental hygiene.

Objective 1.

To assess the pre-existing knowledge score of middle school children regarding dental hygiene before implementation of structured teaching programme (pre-test).

In pre-test 0% had good knowledge, 3(6%) had poor knowledge and 47(94%) had satisfactory knowledge regarding dental hygiene among school children. The pre-test mean score was 22.58, median score was 23.0 and standard deviation was 3.78.The results of study reveal that majority of the school children had satisfactory knowledge. So they need to be educated regarding dental hygiene.

The findings of the present study were supported by a descriptive study conducted by Togoo RA ,Yaseen SM ,Zakirulla M, Nasim VS, Zamzami MA(2012) on oral hygiene knowledge and practices among school children in a rural area of southern Saudi arabia. The results of the study showed that more than half (58.4%) of the children brushed their teeth using tooth brush and paste, 32.1% using miswak, 7.2% using toothpicks and 2.3% using dental floss as a primary cleaning aid. About two-third (64.3%) children were brushing their teeth once daily with 32.6% were brushing teeth under parent supervision. Most children (62.26%) thought that high sugar diet causes dental decay while as more than half (58.45%) thought soft drinks affect dental health. Around 57.14% were aware of gum diseases and 51.14% were aware that gum diseases can be prevented if oral hygiene practices are followed. Nearly half (52.1%) of the children had made visit to dentist when in pain though a majority (79.4%) answered that regular dental checkup is essential. Fear (67.28%) was cited as the main reason for not visiting the dentist.[78]

Objective 2:

To assess the knowledge score of middle school children, after implementation of structured teaching programme (post-test).

The finding reveal that in post-test majority of the school children 31(62%) had good knowledge, 19(38%) had satisfactory knowledge regarding dental hygiene. In post-test mean score was 31.14, median score was 32 and standard deviation was 3.812.

The findings of the present study are supported by a study conducted by Pranali S and Shinde (2017) to determine the effectiveness of planned teaching programme on knowledge and practice regarding Oral hygiene among primary school children at selected schools of Kolhapur. The result showed that , out of 50 primary school children, in pre-test majority of the participants 48(80%) had average knowledge and 11(18.34%) participants had poor knowledge and only 01(1.66%) participants had good knowledge ,whereas in post-test 46(76.67%) participants had good knowledge, 14 (23.33%) participants had average knowledge and none of the participants had poor knowledge. In practice, majority of participants 53(88.33%) showed fair practice and 07(11.66%) participants had showed poor practice and none of the participants had good practice .whereas in post-test 44 (73.34%) participants revealed good practice and 16(26.66%) participants had fair practice and none of the participants had poor practice .The calculated paired t value (tcal=15.66) was greater

than tabulated value (ttab=200) .This indicates that gain in knowledge score was statistically significant at p< 0.05 level. The planned teaching programme on oral hygiene was effective in increasing the knowledge.[79]

Section II : (b) Comparison of pre-test and post-test knowledge scores of study subjects regarding dental hygiene.

Objective: - 3

To determine the effectiveness of structured teaching programme regarding dental hygiene among middle school children by comparing pre-test and post-test knowledge scores of middle school children.

The results of the study reveal that overall pre-score mean percentage is 22.58 %and overall post-score mean percentage is 31.14% and p value ≤0.001 which is lower than the tabulated value of p=0.005.Hence the null hypothesis is rejected and Research hypothesis H1 is accepted which states that there is significant difference between mean pre-test and post-test knowledge scores of school children regarding dental hygiene .

The findings of the present study are supported by a study done by Sreeluke R, Priti P (2017) to assess effectiveness of planned health education programme among mothers regarding dental hygiene in children of urban slums. The findings of study revealed that majority 37(61.67%) of the subjects had an average knowledge score and 23(38.33%) subjects had poor knowledge, whereas in post-test 38(63.33%) subjects had good knowledge score, 22(36.67%) had an average knowledge score and none of the subjects had poor knowledge.[81]

Section 111: Association of pre-test knowledge score with selected demographic variables (Gender, Type of family, Educational status of parents and monthly family income)

Objective: - 4

To determine association of pre-test knowledge score of middle school children regarding dental hygiene with selected demographic variables (Gender, type of family, educational status of parents, monthly family income).

The association of demographic variable with pre-test score of knowledge by using Chi square revealed that there is statistically significant association with variables such as Educational status of Parents and Monthly family income , showed that there was statistically association at p< 0.05 level and no association was found with variables as Gender and type of family.

The findings of the present study are supported by a study conducted by Sudha P, Basis S, Anegundi RT (2005) on prevalence of dental caries among 5-13 year school children of Mangalore city. A total of 524 school children belonging to low socio-economic status from 8 government school and high socio-economic status from 8 aided schools were selected for examination. The sample was selected by cluster sampling which consisted of 193, 160, 171 children in the 5-7, 8-10, 11-13 years of age group respectively. The study revealed that caries prevalence in 5-7 years is 94.3%, 8-10 years is 82.5% and 11-13 years is 82.5%. The study also revealed that prevalence of caries in low socio-economic group is higher i.e., 96.2% than the high socio-economic group i.e., 77.1%. The increased prevalence of caries highlights the need for dental health programme through systematic public and school health education programme.[63]

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