# A Study To Assess

## The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Acne Among Adolescent Students Of Caset Experimental Higher Secondary School, Srinagar, Kashmir

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# A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING ACNE AMONG ADOLESCENT STUDENTS OF CASET EXPERIMENTAL HIGHER SECONDARY SCHOOL, SRINAGAR, KASHMIR

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# Chapter 1

# Introduction

## 1.1 Introduction:

### 1.1.1 Background of the Study:

The transition period from childhood to adulthood is a key factor in determining the future health of the individual. The journey from childhood to adolescence is very challenging. Adolescence is a phase of rapid growth and development during which physical, sexual and emotional changes occur; so adolescent period is the very important period in the life of an individual. Health and development are closely interlinked in adolescents. The physical development (sexual and body changes) that occurs during adolescence takes place along with important psychological and social changes that mark this period as a critical stage towards becoming an adult.[1]

According to World Health Organization (WHO), the adolescent is defined as a person between the ages of 10 – 19 years. There are about 1.2 billion adolescents worldwide and one in every six people in the world is an adolescent. In India, there are 243 million adolescents comprising 21% of India's total population. They are future of the nation, forming a major demographic and economic force. For a long time, there was no organized system to govern and monitor the social needs of adolescents. The committee on the Gopal Krishnan 4 rights of the Child (CRC, WHO) published guidelines in 2013 on the rights of children and adolescents, and issued guidelines on obligation of the states to recognize the special health and developmental needs, rights of the adolescents and young people. This has been further mentioned in WHO report in 2014 titled "Health for the world's adolescents".[2]

Adolescence is characterized by biological, psychological, psychosexual, and social maturation. Due to fluctuations in hormonal levels, there are manifestations of several skin diseases among them. Acne is the most commonly diagnosed skin lesion among adolescent students aged 10-19 years.[3]

Skin is the largest & most visible organ of the body. It constitutes about 15% to 20% of the body's weight. It protects us from invasion of organisms, helps to regulate body temperature, manufactures vitamins and forms our external appearance.

The skin has three primary layers (i.e., *epidermis*, or outer layer; the *dermis*, or inner layer; and the *hypodermis*, or subcutaneous layer) as well as epidermal appendages (i.e., eccrine glands, apocrine glands, sebaceous glands, hair follicles, and nails) [4].

The skin plays a vital role in person's physical health and is always integral to self-esteem. Adequate skin care can prevent dermatological diseases such as acne vulgaris, contact dermatitis, eczema etc and can enhance the beauty of a person.[4]

Acne, commonly known as acne vulgaris, is defined as polymorphic eruption due to inflammation of pilosebaceouss units of skin. Acne is a common skin disorder of the oil glands when overactive sebaceous (oil) glands secrete too much oil (sebum) in the skin which leads to the plugged pores and outbreaks of lesions called Pimples/zits. This is characterized by the recurring formation of blackheads, white heads and pimples. Acne lesion occurs primarily on the face and sometimes on the back, shoulders, chest and arms. There are different types of acne. The most common type is acne vulgaris that develops during the adolescent period. Puberty causes hormone levels to raise, especially testosterone in both adolescent males as well as females. These changing hormones cause skin glands to start making more oil (sebum). Oil releases from the pores to protect the skin and keep it moist. Acne develops when the oil mixes with dead cells and blocks the skin pores. The bacteria can grow in this mixture and when this mixture leaks into nearby tissues, it causes swelling, redness and pus. A common name for these raised bumps is pimples.[5, 6]

Acne is the most common chronic inflammatory skin disease of the hair follicle affecting 20% of young people worldwide and is universally present in almost all adolescents students (about 95% are affected), and continues till adult age.[7, 8] A recently published systematic review on epidemiology of acne indicated that about 64% and 43% of individuals are affected with this condition as they advance into the 20s and 30s, respectively. According to the Global Burden of Disease (GBD) study, acne was the 8$^{th}$ most prevalent skin disorder among young adults in 2010 [9]. Despite its high burden and negative health consequences, it is mostly under recognized by global health planners, particularly in poor-resource settings.

**Yahya H.2009** conducted a cross-sectional study in a secondary school in Kaduna, Nigeria. The study was entitled as "Acne in Nigerian adolescents--prevalence, severity, beliefs, perceptions, and practices." 539 randomly selected students aged 11-19 years in a secondary school in Kaduna, Nigeria were administered a questionnaire to assess self-report of acne, its severity and impact; beliefs and perceptions about causes, and treatments used. 418 students were later examined to detect and grade acne severity. The findings of the study revealed that 274 (50.8%) were adolescent boys while 265 (49.2%) were adolescent girls. The mean age for respondents was 16 years. 320 adolescent students (59.4%) self-reported acne. Total 418 adolescent students were examined. 379 study subjects had acne giving a prevalence of 90.7%. The prevalence of acne increased with age (76.7% at age 10-13 years; 88.2% at age 14-16 years; 97.1% at age 17-19 years). 353 out of 379 (93.1%) had mild acne while 26 out of 379 (6.9%) had moderate acne. The severity of acne was similar in boys and girls. 47.7% of students reported feeling "very sad/unhappy" about their acne and more than 70% of adolescent students who self-reported acne, said that acne did not interfere in relationship with family members, friends or school performance.[10]

**Adityan B, Thappa DM (2009)** conducted a descriptive correlational study on "Profile of acne vulgaris in South India." The aim of the study was "To study the profile of acne vulgaris, its seasonal variation, relationship with smoking and possible correlation between acne vulgaris and markers of androgenicity in adolescents." All the study subjects with acne who consented to participate in the study were included. The parameters evaluated included age, gender, age of onset, duration of lesions, site of

lesions, grade, relation with menstrual cycle, markers of androgenicity, number of acne lesions such as comedones, papules pustules and nodules, number and site of post-acne scarring, post-acne hyperpigmentation, seasonal variation and history of smoking.

A total of 309 study subjects with acne were included in the study. The frequency of acne in this study was 1.068%. The mean age of the study group was 19.78 years. The most common age group involved was 16 to 20 years (59.8%). The mean age of onset was 15.97 years. Face was involved in all the study subjects, followed by back (28.2%), chest (20.1%), neck (9.4%) and arms (10%). In the older age groups, women were more likely to report having acne than men. The closed comedones were mostly present than open comedones. A total of 186 patients (60.2%) had grade 1 acne, 85 (27.5%) had grade 2 acne, 8 (2.6%) had grade 3 acne and 30 (9.7%) had grade 4 acne. There was a higher incidence of scarring (39.5%) and post-acne hyperpigmentation (24.6%) among the study subjects. In females, 57.7% had premenstrual flare and 12.4% had cutaneous markers of androgenicity. There was no association between severity of acne and other markers of androgenicity. The seasonal variation was observed only in 80 study subjects (25.9%); 71 study subjects (23%) exacerbated in summer and 9 study subjects (2.9%) in winter. Smokers had more severe grade of acne as compared to nonsmokers.[11]

Acne is a stressful skin condition that effects self-confidence and can lead to possible scarring. Aside from scarring, it has psychological effects like reduced self-esteem, depression or suicide. Acne usually appears during adolescence, when adolescents are socially insecure. They may drop out of schools, social activities; avoid facing people and social gatherings, because they feel Acne has disfigured them. Acne also reduces adolescent's professional and social growth.[12]

**Reljic V, Maksimovic N, Jankovic J, Mijovic B, Peric J, Jankovic S (2014)** conducted a cross-sectional study among adolescent students from Serbia, Belgrade and Uzice. The aim of this study was to determine the self-reported prevalence of acne and its main characteristics in adolescent students, and to assess their quality of life (QoL). The sample size was 440 adolescent students from Serbia (281 from Belgrade and 159 from Uzice). The participation in the study was voluntary and anonymous. Two questionnaires were administered: a short demographic questionnaire, and Children's Dermatology Life Quality Index (CDLQI). The internal consistency was assessed using the Cronbach's alpha while item-total score correlations were assessed using Spearman's correlation analysis. Findings of the study revealed that (84.3%) of the study subjects were females and only 15.7% were males. A total of 228 (51.8%) study subjects self-reported their acne with significantly higher prevalence in Uzice (73.6%) than in Belgrade (39.5%). The mean CDLQI score was 3.55 with similar quality of life impairment in adolescents from the two cities. The mean Cronbach's alpha was 0.83. There was a statistically significant positive correlation between the mean overall CDLQI score and CDLQI subscale scores that ranged from 0.401 to 0.841.[13]

Although the etiology of acne was difficult to describe, findings from previous studies revealed that strong genetic predisposition is associated with Acne pathogenesis and a strong correlation has been found between disease severity and pubertal maturity.

Other probable risk factors outlined in prior studies were socioeconomic conditions, dietary factors (chocolate, dairy products, and high glycemic index diet), topical greasy preparations that block skin pores, humid climate, smoking, obesity, stress, popping up pimples, and bacterial infections. In recent years, evidence has emerged that western diet with high glycemic load might trigger the pathogenesis of acne.[7]

Given the fact that acne appears on the face (mostly visible) and affects appearance (inflammation leading to scarring and hyper pigmentation). Adolescent students with acne suffer more with psychological distress and emotional problems as compared to acne-free adolescent students14. The self-perceived attractiveness varies significantly among acne-sufferers; it affects the quality of life, interpersonal relationships, self-confidence as well as self-esteem. Moreover, teasing by friends aggravates these sufferings and in some cases subjects are compelled into social isolation. In order to avoid social embarrassment, they often wear heavy makeup, grow their hair longer to cover their face, and are needlessly exploited at beauty parlors. Previous studies suggested that apart from cosmetic burden, adolescents with acne are more prone to social anxiety, poor self-image, depression, and suicidal tendency as compared to their acne-free counterparts. The extent of psychological co-morbidities, namely anxiety, depression, and body image perception, are probably underestimated in acne. Severity of acne increases with emotional stress in a linear fashion and significantly affects their social, vocational, and academic performances.[14, 15] Puberty brings about dramatic physical and emotional changes that may be frightening to an unaware adolescent. It can also cause tension, confusion and on the other hand it may give a sense of happiness. All of these feelings are perfectly normal. This is the time when adolescents need guidance and supportive relationship from the family members and peers to develop a "healthy personality". Therefore it is necessary to create an awareness regarding hormonal and skin changes among adolescents. **"Proper education and intervention is better than allowing the danger to occur"**.[16]

The structured teaching programme provides an opportunity for the investigator to create awareness among the adolescent students regarding acne. It helps in bringing out the positive changes in the knowledge of adolescent girls and boys regarding acne and improves their self-esteem by taking precautionary measures in their day to day life.12Simple remedies will always help to get rid of acne vulgaris and its complications like scarring, damage to skin etc. It includes keeping the face clean, drinking plenty of water, increasing the intake of citrus fruits, increasing intake of vegetables, avoiding spicy and oily foods, avoiding use of oily cosmetics, excessive hair oil, squeezing, popping of pimples and avoiding acne lesion by touching with hands.17

### 1.1.2 Need for the Study:

Adolescence is a period of "Storm and Stress" and "Strain and Strife". Adolescents are aged between 10-19 years and they account for more than 1/5th of world's population (i.e. 1-2 billion). In India, this age group forms 21.4% of total population. Therefore, it can be considered as one huge portion of the total population which needs attention.12 Adolescent period should be given due attention which makes them more confident and healthy adults. They are the citizens of tomorrow on whom the future of the nation depends.[18]

Adolescents lack knowledge regarding hormonal and physical changes leading to depression, mental stress and seeking of advice from incompetent. Moreover, the routine health services do not provide adequate care for the adolescent health problem which further exacerbates the condition.

Understanding their awareness about related issues will help us in giving need based education. Along with the skin changes many psychological and psychosexual changes also take place in the adolescence.

Adolescents need to be aware of these changes and should be able to cope with not only physical changes but also with the psychological and psychosexual transformations. In order to make them competent to adapt positively to such changes, knowledge regarding hormonal and pubertal changes is essential. Adolescent girls and boys know very less about acne. This is because many families do not pass proper information to their children regarding acne, as acne is considered merely as a hormonal change associated with adolescence and is often neglected or given little attention. When adolescents are not informed about the changes that take place at puberty, it is traumatic for them to undergo these changes and may develop unfavorable attitudes towards these changes. Acne affects almost all adolescents, but its peak prevalence is among adolescents aged 18 years. The unfortunate irony is that adolescents are more conscious about their looks during the adolescent years than at any other time in their life. Acne can be traumatic for them. Acne is not just extremely unpleasant pimples; it is something that can hurt the skin and the spirit.[12]

In India, the prevalence data from dermatology clinic of a teaching hospital in Varanasi reported acne in 50.6% of boys and 38.13% of girls in the age group 12-17 years. Adolescents with acne are prone to develop low self-esteem, low self-confidence and social dysfunction which may lead to anxiety, depression, obsessive compulsiveness and sometimes suicidal ideas. Acne affects the functional abilities of individuals and patients have negative impact on personal relationships, sports activities and employment opportunities in adolescents as well as adults.[20]

**Al Robaee AA, (2009)** conducted a study on prevalence, knowledge, beliefs & psychosocial impact of acne in adolescent students in Central Saudi Arabia. The findings of the study revealed that 59.2% of subjects had acne. Only 23% of the subjects had adequate knowledge regarding acne. 60% of subjects had false beliefs regarding acne and 73.8% of subjects had effect on their self-image as well as suffered from acne related stress. Education is important to clear the misconceptions of adolescents regarding acne and also to motivate the adolescent students to seek medical advice.[21]

**Krowchuk DP, Stancin T, Keskinen R, Walker R, Bass J, Anglin TM (2009)** conducted a study regarding "Psychosocial effects of acne on adolescents". 39 study subjects were evaluated. The study subjects completed a self-assessment questionnaire, the Piers Harris self-concept scale and underwent an objective assessment of acne severity. The findings of the study revealed that 48% of study subjects were dissatisfied with their facial appearance and this in turn was correlated with feelings of embarrassment and social inhibition.[22]

**Uslu G, Sendur N, Uslu M, Savk E, Karaman G, Eskin M (2008)** conducted a cross sectional study on acne prevalence, perception and effects on psychological health among adolescents in Aydin, Turkey. The sample size was 600 high school adolescent students. A structured questionnaire, general health questionnaire and Rosenberg Self Esteem Scale was used for data collection and evaluation. The study subjects consisted of 303 girls and 260 boys between 13-19 years of age.

Findings of the study revealed that prevalence of acne was 63.6% with 29.2% non-inflammatory and 34.4% inflammatory acne. Acne was more prevalent and severe in boys than in girls. Severity of acne was found to be associated with anxiety, depression and low self-esteem. The study concluded that despite the high prevalence of acne, there is still much deficiency of knowledge and wrong beliefs about acne. This indicates that there is an urgent need for educating the adolescents about etiopathogenesis, potential complications and importance of effective treatment of acne. Effective treatment may make significant contributions for the mental health of adolescents as well as adult population.[23]

**Halvorsen JA, Stern RS, Dalgard F, Thoresen M, Bjertness E, Lien L (2011)** conducted a cross-sectional questionnaire based study among adolescents to explore the relationship of suicidal ideation, mental health problems, and social impairment with acne. A total of 4,744 study subjects were invited and 3,775 (80%) participated. In all, 14% reported having substantial acne. The findings of the study revealed that among those with a lot of acne, suicidal ideation was twice as frequently reported among girls (25.5 vs. 11.9%) and three times more frequently reported among boys (22.6 vs. 6.3%). The suicidal ideation remained significantly associated with substantial acne.

The mental health problems, as assessed by the strengths and difficulties questionnaire (2.25, 1.69-3.00), low attachment to friends (1.52, 1.21-1.91), not thriving at school (1.41, 1.12-1.78) were all associated with substantial acne.[24]

The growth of one's intellect from concrete to abstract thinking makes adolescence an intense time of self-discovery. In their quest to define themselves and their relationship to the world, adolescents begin to ask themselves four basic abstract questions:

- **Who am I?** (Pertaining to his or her sexuality and social roles)
- **Am I normal?** (Do I fit in with a certain crowd?)
- **Am I competent?** (Am I good at something that is valued by peers and parents?)
- **Am I lovable and loving?** (Can someone besides Mom and Dad love me?)

Adults who work with adolescents need to recognize that these questions are quite central to the concerns of adolescents and should give them a chance to explore their own beliefs and find their own answer to this questions.[25]

The National Population Policy (2000) has recognized adolescents as an underserved vulnerable group that needs to be served specially by providing related health information and service.

Nowadays because of the busy schedule some parents forget their responsibility to transfer health information to their children. They cannot understand the challenge and pain of their children during this period and put the responsibility of informing their children on the shoulders of teachers who may ignore it as well and return it back to the parents. In such a situation adolescents will go to classmates, siblings, street talks, and mass media to get the information they need. This will lead to wrong or incomplete information and misconceptions regarding acne, its causes and management. Therefore, these adolescents put their physical, psychological, and social health at risk.

Acne is not just a skin disease but is a wide spread health issue and a socially frustrating condition. So it is important to take all necessary measures and examine carefully both psychosocial and clinical effects of the disease process on adolescents. Moreover, adolescents have poor knowledge about acne, its causes, risk factors, treatment and have many misconceptions. So they need to know regarding the causes and prevention of acne so that they are able to cope with this and have a good physical as well as psychological health.

The researcher had found that, when there are pimples on face of adolescent students, it has a negative impact on the self-esteem of the adolescents and one tiny pimple feels like the size of a volcano. From my personnel experience, adolescents having acne are unable to face the mirrors and feel themselves like vampires.

They have inferiority complex, avoid social interaction and social gatherings. They also have a low self-esteem and poor confidence. This negative psychosocial effect has a crippling impact, discouraging adolescents in pursuing life's opportunities-socially in the job market or at school/college.

These painful situations were motivational factors for the researcher to undertake this study and to prepare a structured teaching programme on knowledge regarding Acne among adolescent students.

## 1.2 Problem Statement:

"A study to assess the effectiveness of structured teaching programme on knowledge regarding acne among adolescent students of Caset Experimental higher secondary school, Srinagar, Kashmir.''

- **Objectives:**

a. To assess the pre-test knowledge score of adolescent students regarding acne.
b. To assess the post-test knowledge score of adolescent students regarding acne.
c. To compare the pre-test & post-test knowledge score of adolescent students regarding acne.
d. To find the association of pre-test knowledge score of adolescent students regarding Acne with their selected demographic variables i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information.

## 1.3 Research Hypothesis:

H1: There is significant increase in mean post-test knowledge score as compared to mean pre-test knowledge score of adolescent students regarding acne at 0.05 level of significance. H2:

There is significant association of the pre-test knowledge score regarding acne among adolescent students with their selected demographic variables i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information at 0.05 level of significance.

## 1.4 Operational Definiions:

- **Structured Teaching Programme:** In this study it refers to the educational material prepared by the investigator for the adolescent students regarding information of acne.
- **Knowledge:** In this study, it refers to the written responses to the items in the questionnaire, from the adolescent students regarding acne.
- **Acne:** In this study it refers to the common skin problem of the adolescents, characterized by pimples and blackheads.
- **Adolescent:** In this study, adolescent students refer to boys and girls who are in the age group of 17 -19 years and studying in 11th & 12th classes at Caset Experimental higher secondary school, Srinagar, Kashmir.

## 1.5 Assumptions:

### 1.5.1 Investigator Assumes that:

a. Adolescent students have some knowledge regarding acne.
b. Structured teaching programme will improve the knowledge of adolescent students regarding acne.

### 1.5.2 Delimitations:

### The Study Is Delimited To Adolescent Students, Who Are:

a. In the age group of 17 to 19 years.
b. Studying at Caset Experimental Higher Secondary School Srinagar Kashmir.

### 1.5.3 Variables:

- Dependent variable: Knowledge of adolescent students regarding acne.
- Independent variable: Structured teaching programme regarding acne.
- Demographic variables: Gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information.

## 1.6 Conceptual Framework:

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. It is a frame work which provides the investigator the guidelines to proceed in attaining the objective of the study based on the theory.

It is a scientific representation of steps, activities and outcome of the study.[26] The Conceptual framework of the present study is based on Imogene King's Goal Attainment Model or Theory.

It was first introduced by Imogene King in the early 1960's. Theory describes a dynamic, interpersonal relationship in which a person grows and develops to attain certain life goals.

This model is aimed at assessing the effectiveness of structured teaching programme on knowledge regarding acne among adolescent students at Caset Experimental Higher Secondary School Srinagar, Kashmir.

King's theory offers insight into nurse's interactions with individuals and groups within the environment.

It highlights the importance of client's participation in decision that influences care and focuses on both the process of nurse-client interaction and the outcomes of care. Conceptual framework is a schematic representation. It provides.

- A theoretical framework of the research problem statement that has scientific base and which lays emphasis on the selection, arrangement and clarification of its concepts.
- A certain frame of reference for clinical practice, research and education.
- A direction to research for relevant question on phenomenon and points out a solution to practical problem.

King Theory describes human being as social being who are rational and sensible. Person has ability to perceive, think, feel, choose, and set goals, select means to achieve goals and to make decision.

Person has three fundamental needs: need for health information, need for care that seek to prevent illness and need for care when client is unable to help them. Utilizing the capacity of clients, nurse researcher takes the opportunity to provide information.

The nurse researcher examines whether the information has resulted in gain of knowledge or not with the help of feedback[27].

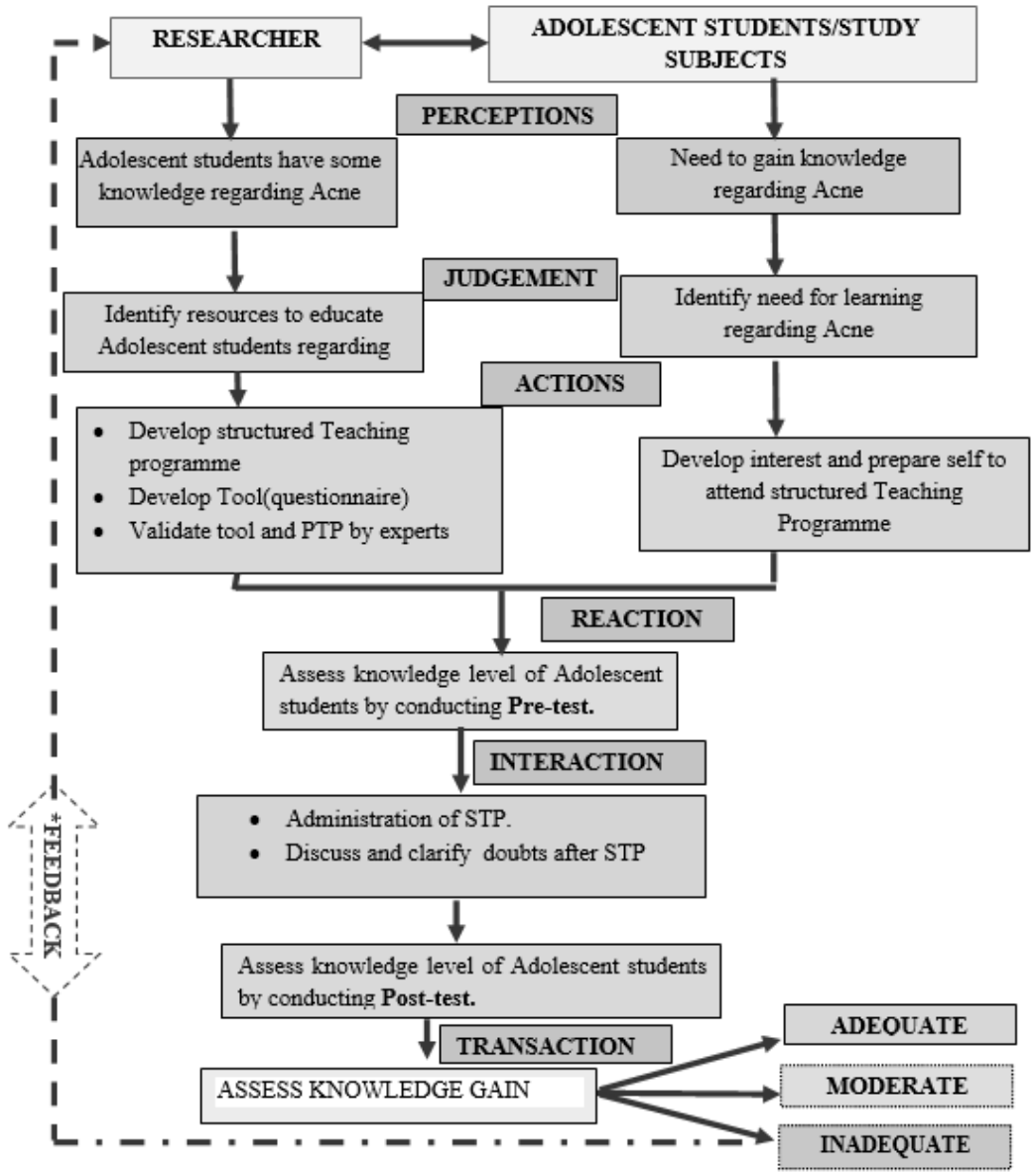
### 1.6.1 The Conceptual Frame Work For The Present Study Is Divided Into Following Phases.

- Perception
- Judgment
- Actions
- Reaction
- Interaction
- Transaction.

- **Perception:** Each person's interpretation/understanding of reality. The perceptions, goals, needs of subjects and researcher influence interaction process.

  In this study researcher perceives that study subjects might have some knowledge regarding acne. Study subjects perceive that they have inadequate knowledge regarding acne and develop desire to gain knowledge.

- **Judgment:** The conclusion or result of person's decisions made on their perceptions. In this study, researcher identifies means to educate the study subjects and study subjects identify need for learning. Researcher's judgement is that the selected intervention will increase the knowledge of study subjects and study subjects judge that attending structured teaching programme will help them.
- **Actions:** Sequence of expected behaviors involving mental and physical actions. In this study researcher's actions are to develop self-structured questionnaire (Tool), self-structured teaching programme (STP), validation of tool and STP by experts. Actions of study subjects are developing interest and preparing self to attend structured teaching programme.
- **Reactions:** Role performed by person as perceived. In this study, reactions includes, researcher taking consent from study subjects and conducting pre-test to assess existing knowledge level of study subjects regarding acne.
- **Interaction:** Goal directed process of communication represented by verbal and non-verbal behaviors between person and person. In this study interaction occurs between study subjects and researcher. During this phase the structured teaching programme is administered and doubts are cleared.
- **Transaction:** It is record of proceedings of acquired knowledge due to administration of structured teaching programme. Researcher evaluates the knowledge which study subjects acquire by conducting post-test.
- When the researcher with special knowledge communicates appropriate information to study subjects, mutual goal attainment will occur.
- **Feedback*:** It refers to the mechanism by which some of the perceived goals of a system are returned back to the system. If there is inadequate knowledge among study subjects regarding acne after the implementation of structured teaching programme, then the researcher would redirect all phases. However in this study feedback was not included.[27]




## 1.7 Summary:

This chapter has briefly dealt with the existing problem and need for undertaking present study ,statement of problem, objectives of study, hypothesis, operational definitions ,selected variables, assumptions, delimitations and conceptual framework of the study.

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# Chapter 2

# Review of Literature

## 2.1 Introduction:

## Review of Literature:

Review of literature is one of the most important steps in research process. It is an account of what is already known about a particular phenomenon. The main purpose of literature review is to convey to the readers about the work already done and the knowledge and ideas that have been already established on a particular topic of research.[26]

A literature review is a description and analysis of the literature relevant to a particular field or topic. It gives an overview of what has been said, who the key writers are, what are the prevailing theories and hypothesis, what questions are being asked, and what methods and methodologies are appropriate and useful. As such it is not in itself primary research, rather, it reports on findings of others.[27]

Review of literature is a key in research process. According to Nancy Burns, the review of literature is research report and it is summary of current knowledge about a particular problem and includes, what is known and not known about the problem. The review literature provides base for conducting a study.[28]

## 2.2 Review of Literature Has Been Categorized Under the Following Headings:

a. Studies related to incidence and prevalence of acne.
b. Studies related to causes, risk factors & preventive measures of acne.
c. Studies related to management of acne.
d. Studies related to knowledge regarding acne.
e. Studies related to effectiveness of structured teaching programmes regarding acne.

### 2.2.1 Studies Related To Incidence And Prevalence Of Acne:

**Zamanian A, Mahjub H (2014)** conducted a study to determine the pattern of skin diseases among adolescents in Karachi, Pakistan. Detailed history, clinical examination, and laboratory investigations were used to collect data from 1733 study subjects. Findings of the study revealed that acne was present in majority (57.4%) of the study subjects followed by other skin infections and infestations like eczema, urticaria, and scabies.[29]

**Toraub K, Jeewon R (2013)** conducted a cross-sectional study on "socio-demographic factors and their association to prevalence of skin diseases among adolescents in different

districts of Mauritius, east Africa. The sample size was 500 adolescents. A structured questionnaire was used as a tool for data collerction. Fifteen skin diseases were identified during this survey. The findings of the study revealed that 60% of the study subjects aged 15-19 years were affected by acne and 50% of study subjects aged 20 years were more affected by skin fungal infection. Acne was the most common skin disease identified in adolescents.[30]

**Mohammad TN, Bahareh M, Noorbala M (2013)** conducted a cross-sectional study to assess the prevalence of acne and its impact on quality of life in high school aged adolescents in Yazd, Iran. High schools were selected using stratified cluster random sampling through two regions of Yazd. The acne severity was graded using Global Acne Grading System. The adolescent students with acne were then given self-reported Cardiff Acne Disability Index questionnaire. Findings of the study revealed that overall prevalence of acne was 85.9%. The disease was more common among adolescent females than adolescent males (90% vs. 81.4%). However, severe forms of acne were more common among adolescent males.[31]

**Mbuagbaw J, Abongwa C, Ozoh G, Blackett K (2009)** conducted a cross sectional study to determine the prevalence of acne among secondary school students in Yaoundé, Cameroon. Two secondary schools in the city of Yaoundé were selected by random sampling. 585 adolescent students aged between 10 and 21 years were interviewed using a questionnaire and then examined. There were 319 (54.5%) adolescent girls and 265 (45.5%) adolescent boys. Findings of the study revealed that prevalence of acne was 62% in adolescent boys and 58% in adolescent girls. The overall prevalence of acne was 58.9%.[32]

**Chi Ky, Lynn Hyt, Lei Hx, Henry Hlc (2008)** conducted a survey among 522 randomly selected adolescent students aged 15-20 years. The survey was entitled as "A community-based epidemiological study of acne vulgaris in Hong Kong Adolescents". Structured questionnaire was used as tool for data collection. The findings of the study revealed that the prevalence of self-reported facial acne in the age group 15–20 years was 91.3%. Acne was more common in adolescent boys (53.6%) than in adolescent girls (46.4%).[33]

**Tan H, Tan Aw, Barkham T, Yan Xy, Zhu M (2007)** conducted a cross sectional study to determine the epidemiology of acne in adolescent students in Singapore. The sample was 1045 adolescent students aged 13-19 years. These students were selected from four secondary schools, one institute of technical education and one junior college. A questionnaire was used for data collection. The study subjects were also examined for presence and severity of acne. Grading of acne was done on the bases of lesion count. Findings of the study revealed that 88% of the study subjects had acne. 113 study subjects had self-reported acne and 806 study subjects were examined by the dermatologist. 51.4% of study subjects were having mild acne, 40% had moderate acne and 8.6% had severe acne.[34]

**Mahadevi P, Bendigeri J (2015)** conducted a cross sectional study entitled as "Clinico-epidemiological study of acne vulgaris in Southern India". This sample size was

120 adolescent students and was conducted at Mahadevappa Rampure College, Gulbarga. Study subjects aged above 10 years and both males as well as females were included in the study. Findings of the study revealed that acne was present in 71% of the study subjects. 80 (66.7%) study subjects had lesions only on the face, 18 (15%) study subjects had lesions on face, back and chest. Among 120 study subjects studied 32 (26.7%) had scars, of which 12 (10%) study subjects had ice pick scars.[35]

**Chythra R, Raghavendra R (2008)** conducted a cross sectional study to determine the prevalence of skin problems among 122 students selected from two schools located in Southern India. School records were used as tool for data collection. Findings of the study revealed that out of the 122 children, 77 (63%) were adolescent boys and 45 (37%) were adolescent females. 53.2% of the study subjects had skin problems. Acne was the commonest skin disorder present 23.1% of the study subjects followed by scabies in 20%, dermatitis in 12.3%, fungal infections in 7.7% and miscellaneous in 36.9%.[36]

**Yuwnate Ah, Chandane Rd, Giri Kr, Yunati Ms, Sirsam Ss (2013)** conducted a study among adolescent girls and boys in Wardha District, India. The study was entitled as "A multicentre pharmaco-epidemiological study of dermatological disorders in Wardha district". The sample size was 12210 adolescents. The findings of the study revealed that Acne (14.8%) was the most common disorder followed by Tinea infection (13.6%) , Eczema (13.2%), scabies (12.4%) and Pyoderma (11.6%), Acute urticaria (6.6%), Melasma (5.8%), Psoriasis (3.8%), Polymorphous light eruption (3.6%), Phyto-photodermatitis (2.6%), Leprosy (2%) and other disorders (10%).[37].

**Yaseen U, Hassan I (2013)** conducted a cross sectional study to determine the prevalence of various skin disorders in school going children of Kashmir valley of North India. A total of 5000 adolescent students aged 6-19 years were selected through the systematic random sampling technique from different educational institutes of North, Central and South Kashmir. A specially designed questionnaire was framed and used for data collection. Findings of the study revealed that overall prevalence of acne in Kashmir was 19.2%. 63.5% of total students with acne were in the age group of 15-17 years. Acne vulgaris was found more commonly in adolescent males (69.6%) than in adolescent females (30.4%). Post acne scarring was seen in 1.2% of the study subjects.[38]

### 2.2.2 Studies Related To Causes, Risk Factors & Preventive Measures Of Acne:

**Mohib A, Zafar A, Syed H (2017)** conducted a cross-sectional study at Karachi, Pakistan among 298 adolescent students. The study was entitled as "comparison study on frequency, severity and risk factors of acne among male and female adolescent students". A questionnaire was designed which included an acne grading scale and was used by the participants to grade their acne.

The questionnaire consisted of 34 items which included items about various risk factors. 148 participants had acne, so the overall prevalence was 49.7%. 48.8% of the females had acne whereas 51.6% of the males had acne. 48.6% of the study subjects with acne had oily skin, 29.1% had combination skin, 9.5% had dry skin, and 11.5% had normal skin

whereas the rest (1.4%) did not know their skin type. In those with oily skin, 57.4% were females and 42.6% were males. 31% of the females with acne reported that their acne got worse with emotional stress compared to 14.7% males who had a similar response, the difference between the two was significant (p=0.01). 33% females and 25.3% males reported that their acne got worse in humid weather. 60% of the study subjects reported a family history of acne. The study concluded that acne is significantly associated with family history, stress and humid weather.[39]

**Caperton C, Block S, Viera M, Jonette Keri, Berman B (2014)** conducted a double-blind; placebo-controlled study to assess the effect of chocolate on acne exacerbation in adolescent males between the ages of 14 and 20 with a history of acne vulgaris. The study was conducted among 14 study subjects in South Florida. Global Acne Assessment Scale was used to grade acne. The findings of the study revealed that there was a significant increase in the acniform lesions with the consumption of chocolates. The study concluded that in acne-prone male adolescents, the consumption of chocolate correlates to increase in the exacerbation of acne.[40]

**Noor Hi, Zahara Am, Noor Za (2012)** conducted a case control study among 88 adolescents (comprising 44 cases and 44 controls) to identify the relationship of high glycemic load diet, milk and ice cream consumption with acne vulgaris in Malaysia. Comprehensive acne severity scale (CASS) was used to determine acne severity. A questionnaire comprising items regarding the respondent's family history and dietary patterns was used for data collection. Study subjects were asked to record their food intake in a three day food diary. Anthropometric measurements including body weight, height and body fat percentage were taken. Acne severity was assessed by a dermatologist. Findings of the study revealed that case group had a higher glycemic load ($175 \pm 35$) than the control group ($122 \pm 28$). Consumption of milk $\geq$ once a week increased the risk of acne vulgaris occurrence by 4 times. Consumption of ice cream $\geq$ once a week also increased the risk of having acne by 4 times compared to those who did not take ice cream. The study concluded that high glycemic load diet, milk and ice cream consumption are positively associated with acne severity.[41]

**Danby FW (2010)** conducted an experimental study to evaluate the effect of nutrition on Acne among 20 study subjects in Manchester, USA. The results of the study revealed that the natural function of milk is to stimulate growth; it contains anabolic steroids as well as true growth hormones and other growth factors. The presence of 5α-pregnanedione, 5α-androstanedione, and other precursors of 5α-dihydrotestosterone add to the potency of milk as a stimulant of acne. In addition, foods with significant sugar content and other carbohydrates yielding high glycemic loads affect serum insulin and insulin-like growth factor-1 levels, both of which promote increased production of available androgens and the subsequent development of acne.[42]

**Marcason W (2010)** conducted an experimental study on "Milk consumption and acne--is there a link?" among 46 randomly selected adolescents with acne in Chicago, USA. The study subjects were randomly divided into two groups experimental and control group. The study subjects in the experimental group were asked to consume milk whereas milk consumption was withheld for control group for a period of 12 weeks. Results of the

study revealed that milk consumption was associated with exacerbation of acne symptoms. The study concluded that milk consumption may worsen the acne symptoms.[43]

**Ghodsi Sz, Orawa H, Zouboulis Cc (2009)** conducted a cross-sectional, community-based study to determine the prevalence and severity of acne vulgaris in adolescents and factors influencing the acne severity risk in Tehran, Iran. Sample size was 1,002 adolescents and a questionnaire was used for the data collection. Findings of the study revealed that the overall prevalence of acne was 93.3 with 94.4% for adolescent boys and 92.0% for adolescent girls. There was a significant association of acne severity with family history. The study concluded that family history of acne is a risk factor for developing acne in next generations.[44]

**Gil Y, Mark T, Aerlyn G, Mark C, Chee L, Yiong H Et. Al (2007)** conducted a cross sectional study to assess the psychological stress, sebum production and acne vulgaris among 160 adolescent students selected from Choa Chu Kang Secondary School in Singapore. A self-administered questionnaire, which included information on health status, medical history, smoking history, acne history, previous treatments for acne, and the nature of treatment, was used for data collection. The extent of psychological stress was assessed using the Perceived Stress Scale. Sebum measurements were performed using a sebumeter (Sebumeter SM810) which provides a direct measure of sebum secretion. Findings of the study revealed that the prevalence of self-reported acne in the study subjects was high (95% in adolescent males and 92% in adolescent females). In this study it was observed that there was a positive correlation between acne severity and sebum production with stress. The study concluded that stress was a major risk factor in the development of acne severity.[45]

**Kaymak Y, Adisen E, Iiter N, Bideci A, Gurler D, Celik B (2007)** conducted an experimental study to examine associations among daily diet glycemic index, glycemic loads, serum insulin levels, and acne among 49 adolescents (experimental group) with acne and 42 healthy study subjects (control group) at University of Gazi, Ankara, Turkey. A voluntary self-completed questionnaire was administered and study subjects were asked how frequently they consumed the specified amount of food. Overall glycemic index and dietary glycemic load were calculated. Findings of the study revealed that dietary glycemic index, glycemic load, and insulin levels do not have a role in pathogenesis of acne.[46]

**Wu Tq, Mei Sq, Zhang Jx, Gong Lf, Wu Fj, Wu WH Et Al (2007)** conducted a descriptive study to assess the prevalence and risk factors of acne vulgaris in the Zhou Hai district of Guangdong Province, China. A sample size of 3163 students 10 to 18 years old was selected from 7 schools. Information was collected using self-administrated questionnaires and physician examinations. The prevalence of acne vulgaris was calculated from the collected data. Potential risk factors including age, gender, diet, skin type, sleeping habits, and facial make-up use were analyzed using stepwise logistic regression. Findings of the study revealed that acne was prevalent in 53.5% of the study subjects and significant risk factors of acne included age, skin type (oily, mixed, or neutral skin in comparison with dry skin), insufficient sleep, and cosmetic make-up use. Acne vulgaris was prevalent among Chinese adolescents 10 to 18 year old.[47]

**Munawar S, Afzal M, Altaf M, Rizvi F, Chaudry Ma (2007)** conducted a case-control study to determine the effect of different factors like age, skin type, diet, cosmetics, family history and pornographic material on acne in Lahore, Pakistan. The sample size was 120 adolescents including 60 cases of acne and 60 controls (people without any skin disease). The data was collected by administering a structured close-ended questionnaire. Univariate and multivariate logistic regression was used to see the effect of different factors on acne. Age was below 20 years in 68 percent of cases and 38 percent of controls. Logistic regression analysis showed that age (p=0.001), siblings history (p=0.007), skin type (p=0.000), cola drinks (p=0.048), cosmetic used (p=0.004) and frequency of application of cosmetics (p=0.010) had significant effect on acne. The study concluded that carbonated drinks, positive sibling's history, cosmetic treatment and frequent use of cosmetics have a significant relationship with acne. It is more common in oily skin than dry and normal skin.[48]

### 2.2.3 Studies Related To Management Of Acne:

**Lee Jw, Yoo Kh, Park Ky, Han Ty, Li K, Seo Sj Et Al (2011)** conducted a randomized, controlled comparative study to evaluate the clinical efficacy and tolerability of low-dose and intermittent isotretinoin regimens and to compare them directly with conventional iso-tretinoin treatment in Korea. Sample size was 60 adolescents with moderate acne. Study subjects were randomized to receive either isotretinoin at 0•5-0•7 mg/ kg daily (group A), iso-tretinoin at 0•25-0•4 mg/ kg daily (group B) or isotretinoin at 0•5-0•7 mg /kg daily for 1 week out of every 4 weeks (group C). The total period of drug administration was 6 weeks in group C, and 24 weeks in groups A and B. Evaluation of results was done using global acne grading system (GAGS) scores and lesion counts (inflammatory and non-inflammatory). Findings of the study revealed that conventional low dose iso-tretinoin treatment has greater efficacy, tolerability and satisfaction than the intermittent oral iso-tretinoin in the treatment of acne.[49]

**Ozolins M, Eady EA, Avery A, Cunliffe WJ, Neill OC, Simpson NB, Et Al (2005)** conducted a study to determine the relative efficacy and cost-effectiveness of five of the most commonly used antimicrobial preparations for treating mild to moderate facial acne among 649 adolescents aged 12--20 years in University of Nottingham, UK. Study participants were randomised into one of five groups: Group A received 500 mg oral oxytetracycline (non-proprietary) twice daily (BD) + topical vehicle control (BD). Group B received 100 mg oral minocin MR (minocycline) once daily (OD) + topical vehicle control (BD). Group C received topical benzamycin (3% erythromycin + 5% benzoyl peroxide) (BD). + Oral placebo (BD).

Group D recieved topical stiemycin (2% erythromycin) (OD) + topical panoxyl aquagel (5% benzoyl peroxide) (OD) + oral placebo (OD) and group E received topical panoxyl aquagel (5% benzoyl peroxide) (BD) + oral placebo (OD). Findings of the study revealed that the best response rates were seen with two of the topical regimens (erythromycin plus benzoyl peroxide administered separately (OD). or in a combined proprietary formulation (BD.), compared with benzoyl peroxide alone, oxytetracycline (500 mg BD.) and minocycline (100 mg OD.), although differences were small.[50]

**Smith Rn, Mann Nj, Braue A, Makelainen H, Varigos Ga (2007)** conducted an experimental study to determine whether low-glycemic-load diet improves acne lesion counts in adolescent boys and girls among 43 study subjects at School of Applied Sciences, RMIT University, Melbourne, Australia. The experimental treatment was a low-glycemic-load diet composed of 25% energy from protein and 45% from low-glycemic-index carbohydrates. In contrast, the control situation emphasized carbohydrate-dense foods without reference to the glycemic index. Acne lesion counts and severity were assessed during monthly visits, and insulin sensitivity (using the homeostasis model assessment) was measured at baseline and 12 weeks. Findings of the study revealed that at 12 week total lesion counts had decreased more (P=0.03) in the low-glycemic-load group (-23.5 +/- 3.9) than in the control group (-12.0 +/- 3.5). The study concluded that improvement in acne and insulin sensitivity after a low-glycemic-load diet suggests that nutrition-related lifestyle factors may play a role in the pathogenesis of acne.[51]

Michelle JH, Ross SB (2004) conducted an experimental study to evaluate the effectiveness of nicotinamide and zinc supplementation on acne among 198 adolescents suffering from acne at the Pittsburgh University, UK. The supplement used in the study contained nicotinamide 750 mg, zinc 25 mg, copper 1.5 mg, and folic acid 500 mg. The results were impressive. After 4 weeks 79% of the study subjects reported that their appearance was moderately or much better. The results continued to improve during the 8 week study. 26% of the study subjects also received an oral antibiotic in addition to the nicotinamide and zinc supplementation. Interestingly, the addition of oral antibiotic didn't bring any additional benefits. The study concluded that Nic/Zn tablets appear to be an effective oral therapy for the treatment of acne.[52]

**Agarwal US, Besarwal RK, Bhola K (2011)** conducted a randomized, controlled comparative study in Jaipur, Rajasthan, India to compare the efficacy and tolerability of oral isotretinoin in daily, alternate, pulse and low-dose regimens in acne of all types and also to assess whether it can be used for mild and moderate acne. 120 study subjects with acne were randomized into four different treatment regimens each consisting of 30 study subjects. Group A was prescribed isotretinoin 1 mg/kg/day, group B 1 mg/kg alternate day, group C 1 mg/kg/day for one week/four weeks and group D 20 mg every alternate day for 16 weeks.

Study subjects were further followed for eight weeks to see any relapse. Side-effects were also recorded. Results of the study revealed that the study subjects in group A performed better initially at eight weeks, at the end of therapy at 16 weeks results were comparable in group A , B and D. Study subjects with severe acne did better in group A than in group B, C and D. Study subjects with mild acne had almost similar results in all the groups while study subjects with moderate acne did better in group A, B and D. Frequency and severity of treatment-related side-effects were significantly higher in treatment group A as compared to group B, C and D.

The study concluded that for severe acne either conventional high doses of isotretinoin may be used or a conventional high dose for initial eight weeks and later maintain on low doses can also be prescribed. Use of isotretinoin should be considered in the treatment of mild to moderate acne also.[53]

### 2.2.4 Studies Related To Knowledge Regarding Acne:

**Nouf S, Muawad Ha, Hesham H, Khloud Ka, Athari Yd, Rawan Ag (2017)** conducted a descriptive study to assess knowledge regarding acne among adolescents in Saudi Arabia. The sample size was 193. There were 78 (40.4%) adolescent boys and 115 (62.2%) adolescent girls. Tool used was semi structured knowledge questionnaire. The results of the study revealed that 46.2% of the study subjects had poor knowledge regarding acne. More than half of the study population had wrong beliefs regarding acne. The study concluded that awareness programs on acne are needed to increase the awareness and to prevent the malpractices done by adolescent students having acne.[54]

**Allayali Az, Asseri Bn, Nodali Ni, Alhunaki Rnm, Algoblan Sfg (2017)** conducted a cross sectional study to assess the knowledge and psychosocial Impact of acne among medical students in Saudi Arabia. Data was collected from 555 medical students, both males and females. A standard multiple-choice questionnaire containing 45 questions about knowledge and awareness of causes, side effects, psychosocial impact, and treatment of acne was used in the study. Out of 555 study subjects, 49.5% were adolescent males and 50.5% adolescent females. More than half of the participants (66.7%) were 18 and 20 years old. The results revealed that 55% of study subjects had acne. When the students were asked about factors that could cause acne, 91.4% identified hormones as the causative factor. Other factors believed to cause the condition included an increase in stress level (86.1%), dust and heat (84.9%), make up and cosmetics (69.2%), and lack of care skin and diet (66.8%). Only about a quarter of students thought that exposure to petroleum works and some types of medicines (rifampicin, lithium, B12, anti-epilepsy drugs) cause acne (25.4% and 26.3%, respectively). Gender were significantly related to the level of knowledge score, with the majority of male students (62.5%) having poor knowledge about acne while 50.9% of the female students had good knowledge.[55]

**Konrad T, Aneta S, Agnieszka O (2012)** conducted a descriptive study to evaluate knowledge about acne among a selected population of adolescent students of Tricity schools. The study was conducted among 900 adolescents, from 12 randomly selected Tricity schools, aged 15-19 years (mean age: 17.47±1.04 years). The group included 401 adolescent females and 493 adolescent males. The tool used was knowledge questionnaire. The results of the study revealed that 89.19% of the study subjects had inadequate knowledge, and 10.81% of the study subjects had moderate knowledge regarding acne and none of the study subjects had adequate knowledge regarding acne.[56]

**Smithard A, Glazebrook C, Williams Hc. (2008)** conducted a descriptive questionnaire based study to assess knowledge about acne and psychological morbidity in mid-adolescence among 317adolescent students aged 14-16 years from a selected school in Nottingham. Results of the study revealed that knowledge about the causes of acne was low (mean 45%), and was unrelated to acne status. There was a need to improve the knowledge of adolescent students regarding acne through school educational programme.[57]

**Hoqail IA (2008)** conducted a cross-sectional study to assess the knowledge of the youth towards acne among 700 adolescent students from all geographic areas in Riyadh,

Kingdom of Saudi Arabia. Tool used was self-administered knowledge questionnaire. Results of the study revealed that three quarters (76%) of the study subjects considered that psychological conditions contribute to occurrence of acne, 72.1% believe that diet is one of etiologic factor. Only 15.9% reported that acne is an infectious disease. 62% of study subjects believed that acne is not a serious problem, while 56.7% consider it as both a cosmetic and health problem. The study concluded that misconceptions and false beliefs on acne are widespread among the youth. Health education program on acne is needed to improve their understanding of the condition.[58]

## National Studies:

**Manjunath H, Asha B, Shruti K, Prakash K (2017)** conducted a cross-sectional study to assess knowledge regarding acne among adolescents in Karnataka. Sample size was 100 study subjects. There was equal distribution of study subjects with respect to gender. Majority of them belonged to 15-19 years age group. Findings of the study revealed that 72% had good knowledge. More than half of the study subjects had wrong belief that eating oily foods, chocolates, spicy food caused acne but more than 40% of the study subjects had good knowledge about the causes and aggravating factors like it worsens by squeezing/picking/rubbing (83%), commonly found in oily skin (67%), has seasonal occurrence (54%), associated with premenstrual flare (42%), aggravated with use of cosmetics (41%).[59]

**Ganga P, Harish B (2014)** conducted a descriptive study to assess the knowledge regarding acne among 100 students of Kumudini Homes higher secondary school, Pokhara, Nepal. Tool used for data collection was demographic proforma and knowledge questionnaire regarding acne vulgaris. Findings of the study revealed that majority of the subjects 71.7% had inadequate knowledge and 28.3% had moderately adequate knowledge and none had adequate knowledge regarding Acne. The findings of the study concluded that the students were surrounded by the myths & misconceptions on acne. This indicated that educational programmes should be conducted in schools to provide necessary information to adolescent students.60

## 2.2.5 Studies Related To Effectiveness Of Teaching Programmes Regarding Acne:

**Ohenewaa L, James D, Richard J (2010)** conducted a revised study entitled as "Improving acne vulgaris knowledge in adolescents: computer-based tutorial versus handouts" among 103 adolescents in New Haven. Findings of the study revealed that the mean post-test knowledge score of the study subjects in the computerised group (18.2±1.8) was significantly higher than that of the mean pre-test knowledge score (13.5±2.8). While as mean post-test knowledge score of the study subjects in the handout (17.4±2.9) was also significantly higher than that of the mean pre-test knowledge score (12.7±3.0). The study concluded that both computerised presentations and handouts were effective in educating the adolescents regarding acne.[61]

**Phoebe E, Hilary F, James D, Valentine N, Richard J (2008)** conducted a comparative study to assess the effectiveness of written handouts with audio-visual

computerized presentations in educating adolescents regarding Acne. The study was conducted in New Haven. Sample size was 80 adolescents and structured knowledge questionnaire was used to collect the data.

Findings of the study revealed that the mean post-test knowledge score of the study subjects in the computerised group (77.14±35.84) was significantly higher than that of the mean pre-test knowledge score (55.08±17.79). While as mean post-test knowledge score of the study subjects in the handout (75.39±32.58) was also significantly higher than that of the mean pre-test knowledge score (53.33±14.53). The study concluded that both computerised presentations and handouts were effective in educating the adolescents regarding acne.62

**Shetty, Kumar A, George, Alex (2016)** conducted a pre-experimental study to assess the effectiveness of planned teaching program on knowledge regarding acne among 150 adolescents in selected high school of Udupi District Mangalore. Findings of the study revealed that in the pretest majority 73% had poor knowledge, 22% had average knowledge and 5% had good knowledge regarding acne. While as in posttest majority of the study subjects 94% had good knowledge, 5% had average knowledge and only 1% of study subjects had poor knowledge regarding acne. This indicated that planned teaching programme was effective in increasing the knowledge of adolescents.[63]

**Anusha, Radhika M, Indira S (2015)** conducted a pre-experimental study to assess the effectiveness of structured teaching program on knowledge regarding acne among adolescent girls in KNR Government High School at Nellore District Andhra Pradesh. Findings revealed that in pretest majority of the subjects 71.7% had inadequate knowledge and 28.3% had moderate knowledge and none had adequate knowledge regarding acne while as in posttest majority of the study subjects 97% had adequate knowledge indicating that structured teaching programme was effective in increasing the knowledge of adolescent girls regarding acne.[64]

**Suja B, Aruna S, Susila C, Jayasri N (2015)** conducted a pre experimental study to assess the effectiveness of planned teaching programme on knowledge of adolescent regarding acne in selected rural school in Tamil Nadu, among 60 female adolescents aging 14-17years who were selected by non-probability convenient sampling technique and data was collected by structured knowledge questionnaire. Findings revealed that posttest mean knowledge score (73.75+1.74) was greater than Pretest mean knowledge score (38.39 +2.31) indicating the effectiveness of structured teaching programme.[65]

**Kumar D (2012)** conducted a pre-experimental study to assess the effectiveness of structured teaching program on knowledge regarding prevention of Acne among 60 adolescent students of a selected school at Bangalore. Structured knowledge questionnaire was used to assess the knowledge. Findings of the study revealed that in the pretest majority 73% had inadequate knowledge, 22% had moderate knowledge and 5% had adequate knowledge regarding Acne and its prevention. While as in post- test majority 86% had adequate knowledge, 14% had moderate knowledge and none had inadequate knowledge regarding Acne, indicating that the structured teaching programme was effective.[66]

**Mary S J (2010)** conducted a comparative study to assess the effectiveness of video assisted teaching upon knowledge on Acne among 50 adolescent students from a selected school in Gulbarga. Non probability convenient sampling technique was used to select the sample and structured knowledge questionnaire was used to assess the knowledge. Findings of the study revealed that in pre-test maximum number of study subjects (86.3%) had inadequate knowledge, (5.6%) had moderate knowledge while as 8.1% of the study subjects had adequate knowledge regarding. In the post test maximum number of the study subjects (96%) had adequate knowledge, 2.4% had moderate knowledge while as only 1.6% of the study subjects had inadequate knowledge. The study concluded that video assisted teaching programme was effective in increasing the knowledge of adolescent students.[67]

**Josep A (2010)** conducted a study to assess the effectiveness of structured teaching program on knowledge regarding Acne and its prevention among 50 adolescent boys and girls of St. Philomena's College, Mysore. Convenient sampling technique was used to select the sample and self-structured knowledge questionnaire was used to assess the knowledge. Findings of the study revealed that in pretest majority of the study subjects 70% had poor knowledge, 26.3% had average knowledge while as 3.7% of the study subjects had good knowledge regarding acne. In posttest majority 85% of study subjects had good knowledge, 13.8% had average knowledge and only 1.2% had poor knowledge regarding Acne. The study concluded that structured teaching programme was effective in improving the knowledge of the study subjects.[68]

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# Chapter 3

# Design of the Study

Research methodology is a way to solve the problems. It is a systematic procedure in which the researcher starts from initial identification of the problem to final conclusions.

Research methodology organizes all the components of a study in a way that is most likely to lead a valid answer to the question that has been posed. It also refers to the techniques used to plan a study, gather and analyze information in a systematic way.[69]

This chapter deals with the description of research methodology adopted by the investigator to study and analyze the effectiveness of structured teaching programme on knowledge regarding acne among adolescent students. The steps in the methodology include.

Research approach, research design, setting of the study, population, sample and sampling technique, data collection tool and technique ,development and description of the tool and intervention, pilot study, method of data collection and plan for data analysis.

## 3.1 Research Approach:

Research approach is an umbrella that covers the basic procedure for conducting research. Research approach helps the researcher to determine what data is to be collected and how to analyze it.

It also suggests possible conclusions to be drawn from the data. The selection of research approach depends upon the purpose of the study.

In view of the nature of the problem under study and to accomplish the objectives of the study, quantitative research approach was found to be appropriate to assess the effectiveness of structured teaching programme on knowledge regarding acne among adolescent students of Caset Experimental higher secondary school, Srinagar Kashmir.

Quantitative research is a formal, objective, systematic process in which numerical data is used to obtain information about the world. In quantitative research study, variables are pre-selected and defined by the investigator. The data is collected and analyzed statistically.[70]

## 3.2 Research Design:

Research design is also known as the blue print that researcher selects to carry out his/her research study. A research design is the master plan specifying the methods and

procedures for the data collection and analyzing the needed information in a research study[3].

Research design helps the researcher in selection of subjects, manipulation of variables, procedure of data collection and type of statistical analysis to be used to interpret the data.[69]

**Pre-Experimental One Group Pre-Test Post-Test Research Design** was selected for the present study. The primary objective of the study was to find the effectiveness of structured teaching programme on knowledge regarding Acne among adolescent students.

In the present study a structured questionnaire was administered to adolescent students of Caset experimental higher secondary school Srinagar on day 1 as a pretest measure and intervention was given in the form of structured teaching programme on knowledge regarding acne.

Post-test was conducted on day 7 using same questionnaire.

**The Design Chosen For The Study Is Presented In The Figure 3.2 As Follows:**

| **Group**<br>**Adolescent students** | **Pre -test**<br>**DAY 1** | **Intervention**<br>**DAY 1** | **Post-test**<br>**DAY 7** |
|---|---|---|---|
| N=60 | O1 | X | O2 |

**Figure 3.2: Schematic Representation of Research Design**

**Key:**

**$0_1$: Pre Test:** Assessment of knowledge score regarding Acne among adolescent students on day 1 with the help self-structured knowledge questionnaire.

**X: Intervention:** Administration of Structured Teaching Programme on knowledge regarding Acne among adolescent students on day.

The copy warned the Little Blind Text, that where it came from it would have been rewritten a thousand times and everything that was left from its origin would be the word.

**$O_2$: Posttest:** Assessment of knowledge regarding Acne among adolescent students on day 7 using same structured knowledge questionnaire.

**N:** Total sample size (60)

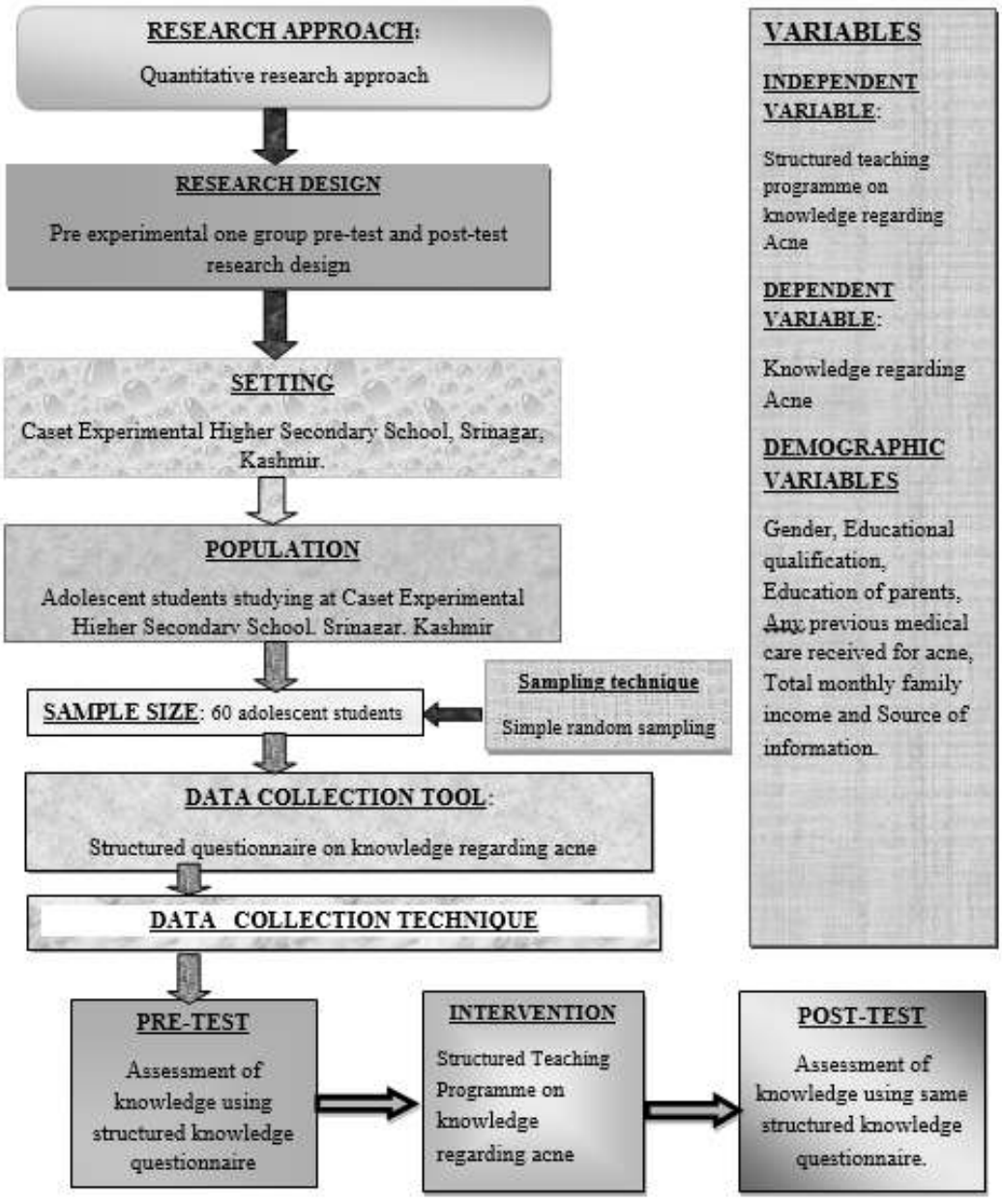


**Fig: 3.3: Schematic Diagram Of Research Methodology**

## 3.3 Variables under Study:

In quantitative studies, concepts are usually called as variables. Variable is an attribute of a person that varies and it takes different values[28].

Three types of attributes were identified in the study. They are independent, dependent variables and demographic variables.

## Independent Variables:

It is the stimulus or activity that is manipulated or varied by the researcher to create effect on the dependent variable [70]. In the present study the independent variable was the structured teaching programme regarding acne.

## Dependent Variable:

It is the outcome or response due to the effect of the independent variable, which researcher wants to predict or explain[70]. The dependent variable of the present study was knowledge regarding acne.

## Demographic Variables:

Demographic variables selected for this study were gender, educational qualification, and education of parents, any previous medical care received for acne, total monthly family income and source of information.

## Research Setting:

The setting is the location where a study is conducted[71]. The present study was conducted at Caset experimental higher secondary school Srinagar. The criteria for selecting this setting were feasibility and availability of sample.

## Study Population:

A population is the entire aggregation of cases in which a researcher is interested. Population is a set of people or entities to which the results of a research are to be generalized[70]. In the present study the target population consisted of adolescent students who were studying in $11^{th}$ and $12^{th}$ classes at Caset experimental higher secondary school, Srinagar, during the period of data collection i.e. 14-03-2018 to 21-04-2018.

## 3.4 Sample and Sampling Technique:

***Sample:*** Sample refers to a portion of the population which represents the entire population[71]. For the present study sample consisted of 60 adolescent students studying at Caset experimental higher secondary school, Srinagar Kashmir.

***Sampling Technique:*** It is defined as the process of selecting representative segments of the population with which to conduct the study[71]. In the present study simple random sampling was used for selection of sample. Lottery method was adopted, by enumerating the roll numbers of all the students of the accessible population to develop the sampling frame.

After the sampling frame was developed, slips of paper containing roll number of each student in the population was placed in a box and the sample was selected by drawing out

as many slips of paper as desired by the researcher. 30 slips were drawn from class 11th and 30 from class 12th. Sampling technique of the present study is shown in figure 3.4.

### Criteria for Selecting Of Sample:

### Inclusion Criteria: Adolescent Students Who Were:

- Between 17-19 years of age.
- Studying in class 11th and 12th.
- Available on the day of data collection.
- Willing to participate in the study.

### Exclusion Criteria: Adolescent Students Who Were:

- Less than 17 and more than 19 years of age.
- Studying in classes other than 11th and 12th.
- Not available on the day of data collection.
- Not willing to participate in the study.

## 3.5 Data Collection Tool/Instrument:

**Tool/Instrument:** An instrument is a device or technique that a researcher uses to collect data[70]. The most important and crucial aspect of any investigation is the collection of appropriate information, which provides necessary data for the study.

The most widely used and simplest instrument for the data collection is the structured questionnaire. As the study was aimed to assess the effectiveness of structured teaching programme on knowledge regarding acne among adolescent students therefore structured knowledge questionnaire was used to collect the data.

### Development of Tool (Structured Knowledge Questionnaire):

### The Following Steps Were Involved In The Development Of Tool:

- Consideration of objectives.
- Extensive review of literature
- Preparation of blue print of the tool.
- Discussion with the guide and experts from both medical and nursing field.
- Content validation of the tool.
- Reliability testing of the tool.
- Modifications were incorporated based on suggestions of experts.

**Description of the Tool:**

**The Tool Consisted of A Structured Knowledge Questionnaire. It Was Divided Into, Following Two Sections:**

**Section A:** Related to demographic data: - It consists of 6 items i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income and source of information.

**Section B:** Related to structured knowledge questionnaire- It is subdivided into following parts.

- **Part I:** Items related to structure and functions of skin comprising 17 items
- **Part II:** Items related to introduction, definition, risk factors and causes of Acne comprising 9 items.
- **Part III:** Items related to types, signs and symptoms, pathophysiology and grading of Acne comprising 13 items.
- **Part IV:** Items related to treatment, complications and preventive measures of Acne comprising 11 items.
  All items were in the form of statements with four options each with only one correct answer.

**Table 3.1: Tabular Form of Tool**

| Part | Areas | Sub Areas/Categories | Items | Sub-Items |
|---|---|---|---|---|
| I | Demographic variables | Gender | 1 | 2 |
| | | Academic qualification | 1 | 2 |
| | | Education of parents | 2 | 4 |
| | | Any previous medical care for Acne | 1 | 2 |
| | | Total Monthly Family Income | 1 | 3 |
| | | Source of information | 1 | 3 |
| II | Knowledge regarding Acne | Structure and functions of skin | 17 | 4 |
| | | Introduction, definition, risk factors and causes of Acne | 09 | 4 |
| | | Types, signs and symptoms, | 13 | 4 |

| Part | Areas | Sub Areas/Categories | Items | Sub-Items |
|---|---|---|---|---|
| | | pathophysiology and grading of Acne | | |
| | | Treatment, complications and preventive measures of Acne | 11 | 4 |

## Scoring Criteria:

Scoring key was prepared for **section A** by coding demographic variables (**ANNEXURE XIX**). For **section B** a score of 1 was assigned for each correct response and a score of 0 was given for each incorrect response as indicated in master sheet **(ANNEXURE XX).** For each area of knowledge, the scores of the items were summed-up and the total score was divided by the number of the items (50), giving a mean score for each item. The mean score was converted into a percent score by multiplying it with 100. According to the scores obtained the following criterion was developed for interpreting the scores, as used by Ganga P, Harish B (2014).[60]

**Table 3.2: Criteria Scoring For Knowledge Levels**

| KNOWLEDGE LEVEL | SCORE |
|---|---|
| Inadequate | 0-20 |
| Moderate | 21-30 |
| Adequate | 31-50 |

Maximum score =50

Minimum score=0

## Development of the Intervention (Structured Teaching Programme):

The structured teaching programme refers to systematically organized instructions. Structured teaching programme on acne was developed according to topic under study, the planned specific objectives, review of related literature, internet sources and opinion of guide and experts. Structured teaching programme is effective to familiarize and aware the adolescent students regarding acne.

## The Steps Involved in Development of Planned Teaching Programme Were:

- Preparation of the first draft of structured teaching programme.
- Content validation of the structured teaching programme.

- Preparation of final draft of structured teaching programme after necessary modification.
  Literature explored for the development of intervention includes Ross and Wilson, Gray's anatomy, Brunner and Suddarth, Harrison, Davidson, API, Ernst Epstein, Fitzpatrick**.**

## Description of Intervention (Structured Teaching Programme):

An intensive review of literature was done in order to select and develop the appropriate intervention for the study. Informal discussion was held with the guide. The intervention was selected on the basis of.

- Theoretical sources
- Previous studies and related literature.
- Objectives of the study
- Internet sources and thorough discussion with the guide. Valuable suggestions were followed and incorporated.

The intervention (structured teaching programme) comprised various sub headings, covering all the aspects of structured questionnaire **(Annexure XVI).** The intervention was subdivided into following sections.

- Structure and functions of the skin.
- Introduction, definition, risk factors and types of acne.
- Signs and symptoms, pathophysiology and grading of acne.
- Treatment, complications and preventive measures of acne.
- It was supplemented by posters, charts and pictures.

## Content Validity of Tool and Intervention:

**Validity:** It refers to the degree to which an instrument measures what it is supposed to measure.[70]

Content validity refers to the degree to which the items in an instrument adequately represent the universe of content.[70]. The tool **(Annexure XIV)** along with objectives, blueprint, and answer key **(Annexure XV)** was submitted to panel of experts to establish content validity. These includes: 6 nursing experts from MMINSR SKIMS, who had specialization in various areas like obstetrics and gynecology, community health, pediatric nursing, medical and surgical nursing and mental health nursing and 1 gynecologist from Government Maternity hospital, SKIMS, Srinagar, 1 pediatrician from GB Pant hospital Srinagar, 1 pediatrician from SKIMS Srinagar and 2 Dermatologists from JVC Medical College Srinagar.

Consent for the tool validation was obtained by sending a requisition letter **(Annexure IV)** and an acceptance form to each expert **(Annexure V)**. Experts were requested to give their opinions and suggestions regarding each item in the tool in terms of agree, and

disagree **(Annexure VI)**. They were also requested to give their remarks for each item. Some items were added, deleted and some were modified as per their recommendations.

For validating the content of intervention, the draft of the structured teaching programme was given to panel of experts to establish content validity. Experts were requested to give their opinions and suggestions about the content of the structured teaching programme. They were given criteria checklist and asked to put a tick mark against the given responses according to their opinion **(Annexure VII)**. The suggestions were incorporated into the final draft of the structured teaching programme.

## 3.6 Reliability of Tool (Test-Retest Method):

Reliability of the research instruments is defined as the extent to which the instrument yields the same results in repeated measures. It is concerned with consistency, accuracy, precision, stability, equivalence and homogeneity.[70]

The tool after the validation was tested for its reliability. Reliability was found by using test- retest method. The tool was administered on two different occasions to 5% of the sample i.e. 3 adolescent students of same selected school. Scores obtained at two different occasions (test retest method) was compared and calculated by using Karl Pearson's correlation reliability coefficient.

## Karl Pearson's Correlation Coefficient:

$$\gamma = \frac{\sum_1^n (X - \bar{X})(y - \bar{Y})}{\sqrt{\sum_1^n (X - \bar{X}) 2 (Y - \bar{Y})\ 2}} = 0.95$$

The reliability computed was '$\gamma$' = 0.95, which means that the tool has excellent reliability.

## Tool Try-Out/ Pre-Testing of Tool:

The tool try out was carried out from 26/02/2018 to 28/02/2018. The tool after validation was administered to 5% of the total sample size i.e.; 3 adolescent students of Caset Experimental school Srinagar. It was found that tool was understandable to adolescent students; it had no ambiguity except few questions which were modified. The investigator found that the language of tool was simple, understandable and practicable. The tool consisted of 50 items. Based on the pre-testing suggestions given by the experts, modification and rearrangement of few items was done.

## Pilot Study:

Pilot study is a small scale preliminary try out of the method to be used in actual major study.[70] The main objectives of the pilot study was to acquaint the researcher, become familiar with the use of tool and identify the problems that may be faced by the researcher in conducting main study.

## The Purpose of The Pilot Study Is:

- To find out the feasibility of conducting the final study
- To evaluate the tool constructed.
- To finalize the plan for analysis.

Pilot study was conducted from 01- 03-2018 to 10-03-2018 to assess the feasibility of study. Six (10% of sample) adolescent students were selected by simple random sampling technique using lottery method in Caset Experimental Higher Secondary School Srinagar. The purpose of the study was explained to each subject and a written consent was obtained from them. A structured questionnaire was used to assess the level of knowledge regarding acne, and it took about 45 minutes to complete the pre-test. After a small break of 15 minutes, Intervention (structured teaching programme) was administered on the same day i.e. 05-03-2017 and it took 60 minutes. Post-test was conducted on 10-03-2017 by using the same questionnaire, and it took 40 minutes to complete. The collected data was analyzed by descriptive and inferential statistics. The mean pre interventional knowledge score was 18.43, median 27.25, standard deviation 3.46 and range 18. The mean post interventional knowledge score was 49.70 median 37.66, Standard deviation 2.05, range 6. The mean difference between pre and post interventional knowledge score was 31.[27].

After conducting the Pilot Study, it was found that the study was feasible. The concerned authority and the sample were cooperative, the questionnaire and structured teaching programme were relevant. No major problems were faced by researcher during pilot study. The investigator decided to follow the same research design during data collection of main study.

## Ethical Consideration:

The researcher has taken permission from the parent institution (Sher-i-Kashmir Institute of Medical Science and Madre-e-Meharban Institute of Nursing Science and Research) to conduct research study and ethical clearance was obtained and study was found ethically exempted (Annexure II).

## 3.7 Data Collection Procedure:

Data collection is the gathering of information needed to address a research problem. For the purpose of data collection, permission was obtained from the principal, MMINSR, SKIMS, Soura to conduct the research study (Annexure I). Prior to the conduction of the study, administrative permission was obtained from the principal of Caset experimental higher secondary school, Srinagar (Annexure III). The main data collection period started from 14-03-2018 to 21-04-2018.Simple random sampling technique was used to select accessible population, and lottery method was adopted to select sample from accessible population. Prior to data collection the investigator introduced herself and explained the purpose of the study (Annexure X) and informed consent was obtained from the study subjects (Annexure XII). The study subjects were assured the anonymity and confidentiality of the information provided by them. (Annexure XI).

**Steps Used for Data Collection:**

**After The Administrative Approval from the Parent Institution:**

- The investigator first approached principal Caset Experimental Higher Secondary School, Srinagar.
- After taking the proper permission, the investigator visited the school on the given date and time and was introduced to the students by the principal and class co-coordinator. The purpose of the study was explained to the students.
- By simple random sampling (lottery method) the study subjects were selected. Study subjects were divided into two groups, group a ($11^{th}$ class students) and group B ($12^{th}$ class students) each group having 30 students.
- Pretest was conducted in group A comprising 30 study subjects on 17-03-2018, at 12.00 pm to 12:50 pm by using structured knowledge questionnaire, to assess the level of preexisting knowledge regarding acne. Time allotted for each item was 1 minute. The average time taken was 45 minutes.
- Pre-test was followed by the administration of intervention (structured teaching programme) on the same day (17-03-2018 at 1:30-2:30 pm) after 40 minutes of break in same class room with the help of lecture cum discussion, posters, charts and pictures. Time taken was one hour.
- Post-test was conducted on the day $7^{th}$ of intervention (in same class room on 24-03-2018 at 01:00 to 01:50 pm) by using the same tool which was used in pre-test to assess the knowledge regarding acne.
- On 29-03-2018 the investigator again approached to Caset Experimental Higher Secondary School, Srinagar.
- Pretest was conducted in group B ($12^{th}$ class students) comprising 30 study subjects on 29-03-2017, at 12.00 pm to 12:50 pm by using structured knowledge questionnaire, to assess the level of preexisting knowledge regarding acne. Time allotted for each item was 1 minute. The average time taken was 45 minutes.
- Pre-test was followed by the administration of intervention (structured teaching programme) on the same day (29-03-2018 at 1:30-2:30 pm) after 40 minutes of break in same class room with the help of lecture cum discussion, posters, charts and pictures. Time taken was one hour.
- Post-test was conducted on the day $7^{th}$ of intervention (in same class room on 05-04-2018 at 01:00 to 01:50 pm), using the same tool which was used in pre-test to assess the knowledge regarding acne.
- Data collected was analyzed and tabulated by using both inferential and descriptive statistics.

**Table 3. 3: Data Collection Schedule N=60**

| Date | Day | Name of school | Group | Subjects taken | Action taken | Time |
|---|---|---|---|---|---|---|
| 17-03- | $1^{ST}$ | Caset Experimental | Group A. ($11^{th}$ | 30 | Pre-test with Questionnaire | 12:00- |

| Date | Day | Name of school | Group | Subjects taken | Action taken | Time |
|---|---|---|---|---|---|---|
| 2018 | | Higher Secondary School, Srinagar | class students) | | **Break**<br><br>12.50pm to1.30pm (40 minutes) | 12:50pm |
| | 1ST | Caset Experimental Higher Secondary School Srinagar | Group A. (11th class students) | 30 | Intervention given after 40 minutes | 1;30-2;30pm |
| 24-03-2018 | 7TH | | | 30 | Post-test conducted | 01:00-01:50pm |
| 29-03-2018 | 1ST | Caset Experimental Higher Secondary School, Srinagar | Group B. (12th standard students) | 30 | Pre-test taken<br>**Break**<br><br>12.50pm to 1.30pm (40 minutes) | 12:00-12:50 pm |
| | 1ST | Caset Experimental Higher Secondary School Srinagar | Group B. (12th standard students) | 30 | Intervention given after 40 minutes | 1;30-2;30pm |
| 05-04-2018 | 7TH | | | 30 | Post-test taken | 01:00-01:50pm |

## Plan for Data Analysis:

The data obtained was planned to be analyzed by both descriptive and inferential statistics on the basis of the objectives of the study. To compute the data a master plan data sheet was prepared by the investigator.

Following plan for data analysis was developed.

Organization of data in master sheet **(Annexure XX, XXI)**

## Descriptive Statistics:

a. Frequency and percentage were be used to analyze the demographic variables and is presented in tables and figures.
b. The knowledge level of adolescent students regarding acne before and after administering structured teaching programme was be analyzed in terms of frequency, percentage, mean, median, and standard deviation and is presented in tables and figures.

## Inferential Statistics:

a. Comparison of pre-test and post-test mean knowledge score was calculated by paired' test.
b. Chi square test was used to find the association of pre-test knowledge score of adolescent students with their selected demographic variables.

## 3.7 Summary:

A quantitative research approach, with pre-experimental one group pre-test post-test research design was used in the study. This chapter deals with the research design, variables, setting, population, sample sampling technique, description of tool and structured teaching program, validity and reliability of the tool, pilot study, method of data collection and plan for data analysis. The analysis and interpretation of the results have been presented in the chapter [4].

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# Chapter 4

# Analysis and Interpretation

**Pilot and Beck (2004),** described analysis as a "process of organizing and synthesizing data so as to answer research questions and test hypothesis.[70]

**Interpretation** refers to the process of making sense of the results of a study and examining their implications." The purpose of analysis is to reduce the data to an interpretable form so that the relations of research problems can be studied and tested.[72]

This chapter deals with analysis and interpretation of data collected from 60 adolescent students on knowledge regarding acne. The data collected was organized, analyzed and interpreted by using descriptive and inferential statistics.

### The Data Analysis Was Done on The Basis of Following Objectives:

**a.** To assess the pre-test knowledge score of adolescent students regarding acne.
**b.** To assess the post-test knowledge score of adolescent students regarding acne.
**c.** To compare the pre-test & post-test knowledge score of adolescent students regarding acne.
**d.** To find the association of pre-test knowledge score of adolescent students regarding acne with their selected demographic variables i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information.

### On The Basis of The Research Statement, Following Hypotheses Were Formulated:

**$H_1$:** There is significant increase in mean post-test knowledge score as compared to mean pre-test knowledge score of adolescent students regarding acne at 0.05 level of significance.

**$H_2$:** There is significant association of the pre-test knowledge score of adolescent students regarding acne with their selected demographic variables i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information at 0.05 level of significance.

The data collected were fed to an IBM computer and analyzed using the statistical Package for the Social Sciences (SPSS), version 20.0, SYSTAT and Microsoft excel. Significance of the obtained results was judged at the 5% level or at a p-value of $<0.05$. The findings were organized and presented in the form of tables and figures.

## Following Statistical Tests Were Used To Analyze The Data:

**Descriptive:** Frequency and percentage, mean, median, mode, standard deviation, range, and minimum, maximum.

**Inferential:** Chi-square test and Paired t-test.

- Paired t-test was used to assess the effectiveness of structured teaching programme.
- Chi square test was used to find the association of gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information with pre-test knowledge score of adolescent students.

## 4.1 Organization of Study Findings:

## The Essential Summary of This Chapter Is Under The Following Sections:

### Section I:

Description of demographic variables of study subjects.

### Section II:

Knowledge score of study subjects before and after administration of structured teaching programme regarding acne.

### Section III:

- Comparison of pre-test and post-test knowledge score of study subjects regarding acne
- Comparison of frequency and percentage distribution of correct responses of items in pre- test and post- test of study subjects.

**Section1V:** Analysis and interpretation of data to find out an association of pretest knowledge score of study subjects regarding acne with their selected demographic variables.

## SECTION 4.1

## Description of Demographic Variables of Study Subjects:

This section describes the characteristics of the study subjects in terms of demographic variables which include gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income, and source of information. Each demographic variable was divided into various categories;

**Table 4.4: Frequency and Percentage Distribution of Study Subjects According To Gender N=60**

| Gender | Frequency (f) | Percentage (%) |
|---|---|---|
| **MALE** | 29 | 48 |
| **FEMALE** | 31 | 52 |
| **Total** | 60 | 100 |

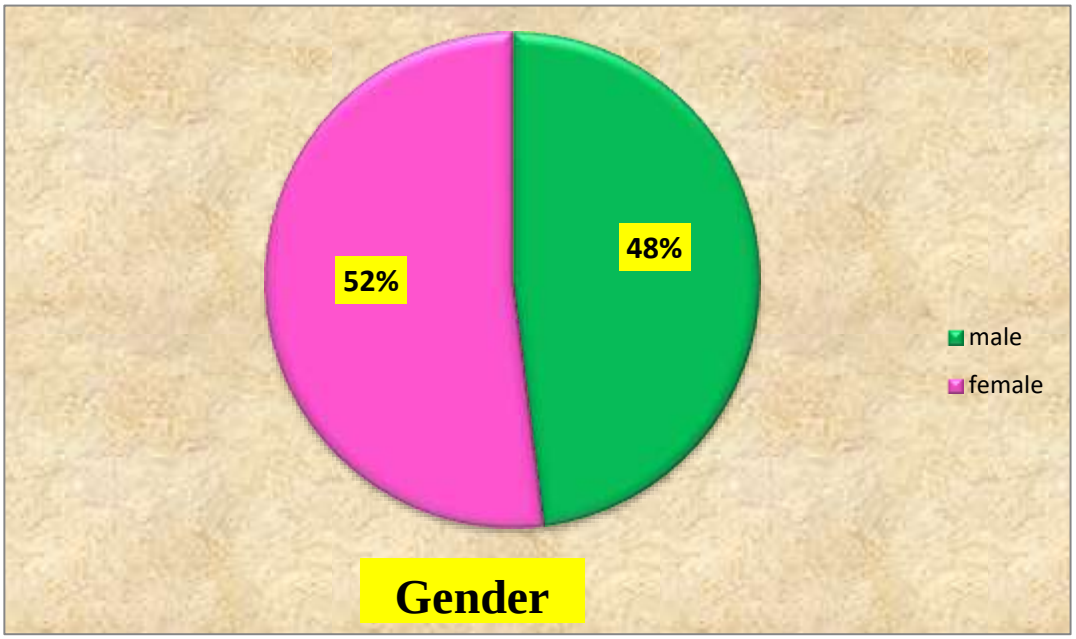


**Figure 4.5: Pie Diagram Showing Percentage Distribution of Subjects According To Their Gender.**

The data presented in the table 4 & figures 5 revealed that majority of the study subjects **(52%)** were females and **48%** were males.

**Table 4.5: Frequency and percentage distribution of study subjects according to their academic qualification**

| Academic qualification | Frequency (f) | Percentage (%) |
|---|---|---|
| **11th** | 30 | 50 |
| **12th** | 30 | 50 |
| **Total** | 60 | 100 |

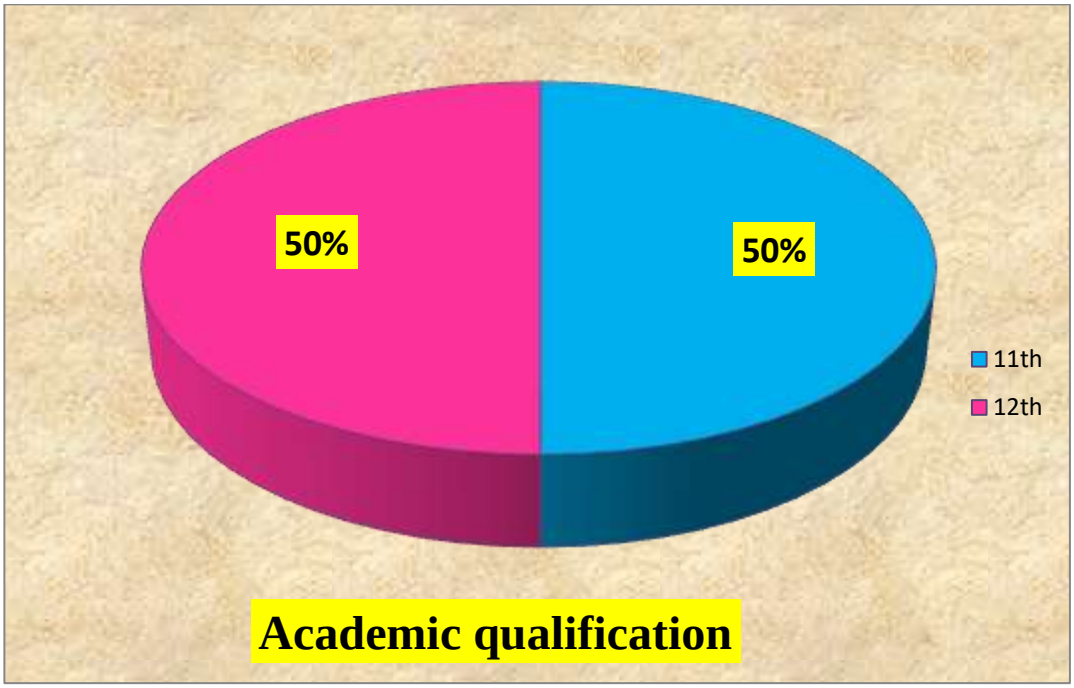


**Figure 4.6: Pie diagram showing percentage distribution of study subjects according to their academic qualification**

The data presented in the table 5 & figure 6 revealed that the percentage of both 11th and 12th class students was equal .i.e. **50%**

**Table 4.6: Frequency and Percentage Distribution of Study Subjects According To Their Education of Mother:**

| Education of mother | Frequency (f) | Percentage (%) |
|---|---|---|
| **Illiterate** | 0 | 0 |
| **High school** | 4 | 7 |
| **Higher secondary** | 22 | 36 |
| **Graduate and above** | 34 | 57 |
| **Total** | 60 | 100 |
| | | |

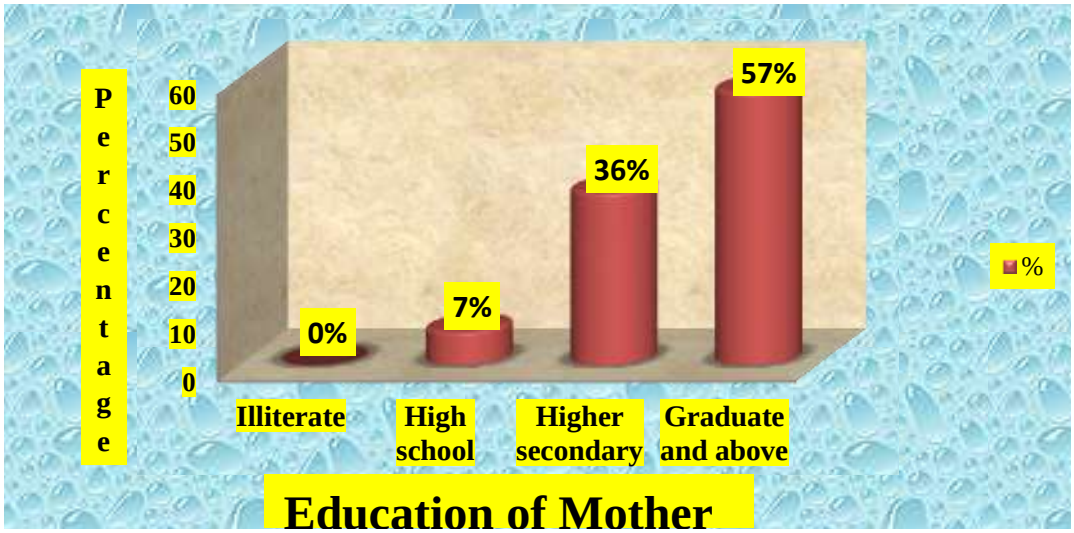


**Figure 4.7: Cylindrical Diagram Showing Percentage Distribution of Study Subjects According To the Education of Mother**

The data presented in the table 6 & figure 7 revealed that mothers of majority of the study subjects **(57%)** were having qualification of graduate and above and mothers of **36%** of study subjects were having qualification of higher secondary while as only **(7%)**belonged to high school group and **none** was illeterate.

**Table 7: Frequency and Percentage Distribution of Study Subjects According To Their Education of Father N=60**

| Education of father | Frequency (f) | Percentage (%) |
|---|---|---|
| **Illiterate** | 0 | 0 |
| **High school** | 9 | 15 |
| **Higher secondary** | 26 | 43 |
| **Graduate and above** | 25 | 42 |
| **Total** | 50 | 100 |

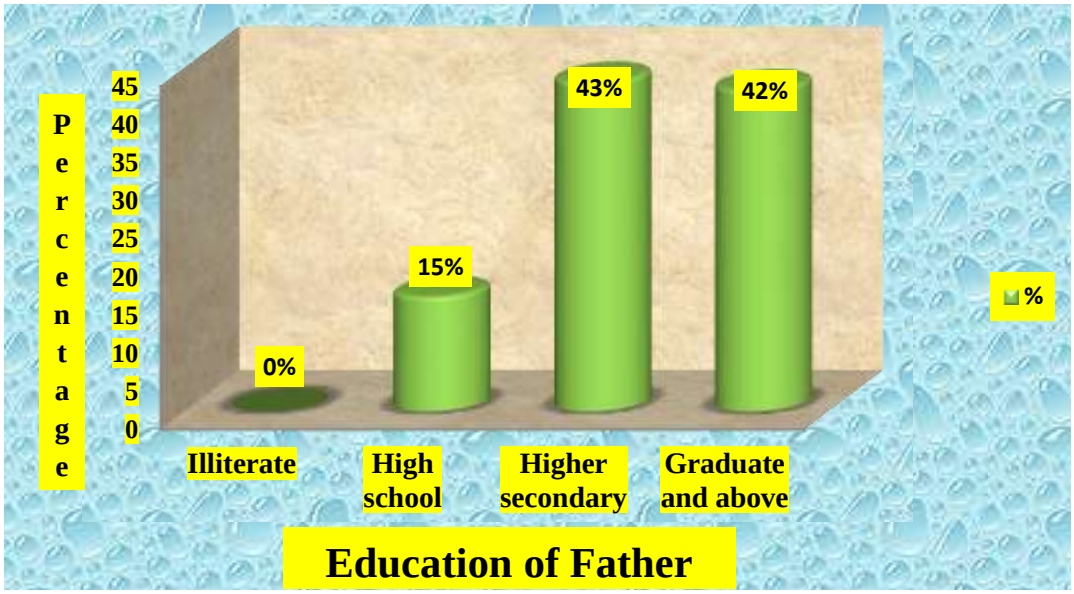


**Figure 4.8: Cylindrical Diagram Showing Percentage Distribution of Study Subjects According To Their Education Of Father**

The data presented in the table 7 & figure 8 revealed that fathers of majority of the study subjects i.e. **43%** were having qualification of higher secondary followed by **42%** with graduation and above. Only **15%** were having high school qualification and **none** was illiterate.

**Table 4.8: Frequency and Percentage Distribution of Study Subjects According To Any Previous Medical Care Received For Acne. N=60**

| Any previous medical care received for acne | Frequency (f) | Percentage (%) |
|---|---|---|
| **Yes** | 10 | 16 |
| **No** | 50 | 84 |
| **Total** | 60 | 100 |

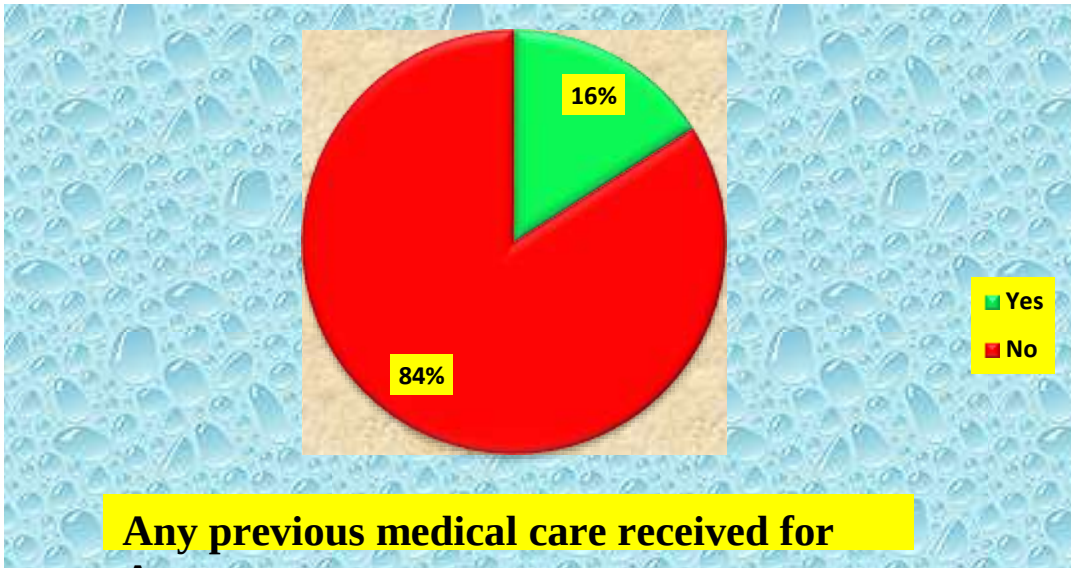


**Figure 4.9: Pie Diagram Showing Percentage Distribution Of Study Subjects According To Any Previous Medical Care Received For Acne**

The data presented in the table 8 & figure 9 revealed that majority of the study subjects **(84%)** had not received any previous medical care for acne while **16%** had received previous medical care for acne.

**Table 4.9: Frequency and Percentage Distribution of Study Subjects According To Their Total Monthly Family Income N=60**

| Total monthly family income | Frequency (f) | Percentage (%) |
|---|---|---|
| **Rs 10000 – 20000** | 11 | 18 |
| **Rs 20000 – 30000** | 23 | 38 |
| **Above Rs 30000** | 26 | 44 |
| **Total** | 60 | 100 |

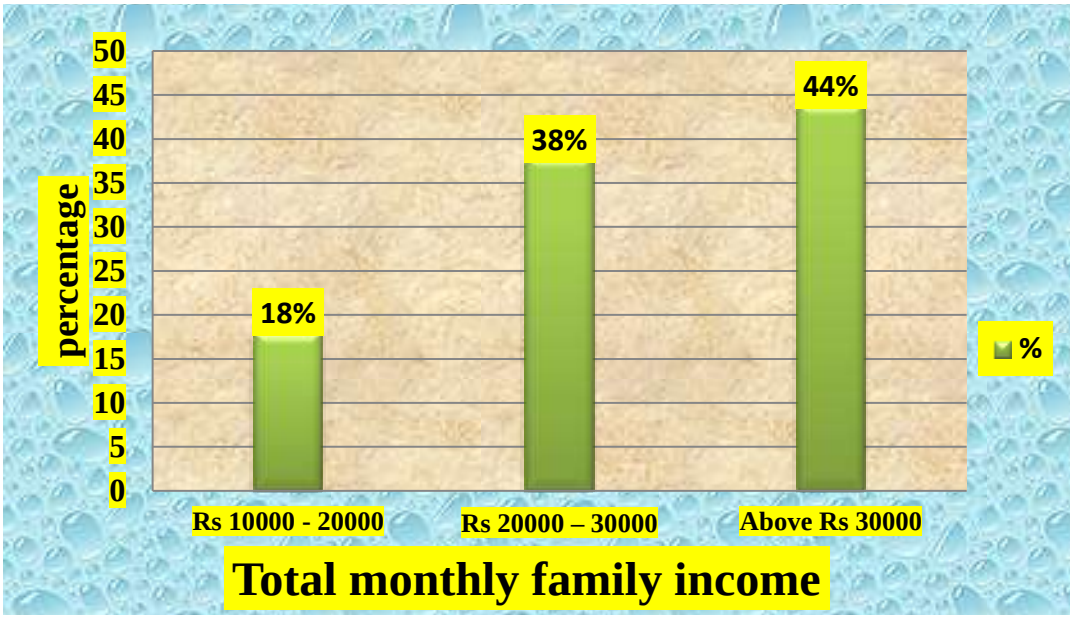


**Figure 4.10: Bar Diagram Showing Percentage Distribution of The Study Subjects According To The Total Monthly Family Income**

The data presented in the table 9 & figure 10 revealed that majority of the study subjects **(44%)** belonged to families with a total monthly income above Rs 30,000and **38%** belonged to families having total monthly income of RS 20000-30000. While as only **(18%)** belonged to families with total monthly income of Rs 10000-20000

**Table 10: Frequency and Percentage Distribution of Study Subjects According To Source of Information N-60**

| Source of information | Frequency (f) | Percentage (%) |
|---|---|---|
| **Friends** | 09 | 15 |
| **Mass media** | 46 | 77 |
| **Doctor** | 05 | 08 |
| **Total** | 60 | 100 |

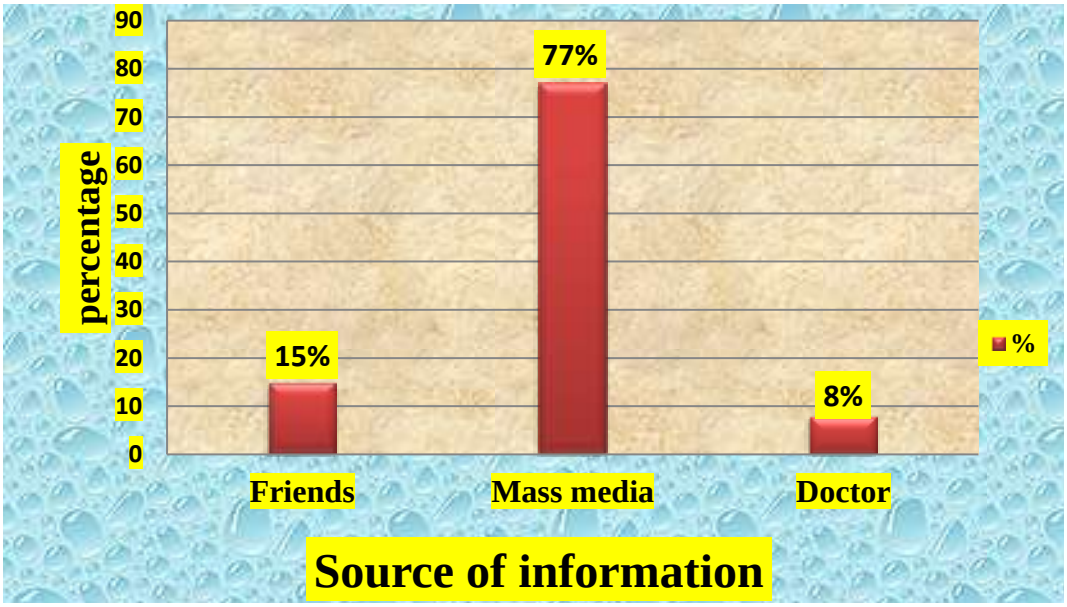


**Figure 4.11: Bar Diagram Showing Percentage Distribution Of The Study Subjects According To The Source Of Information.**

The data presented in the table 10 & figure 11 revealed that majority of the study subjects **(77%)** had mass media as source of information, **15 %** had friends and only **8%** had doctor as source of information.

## SECTION II: Description of Knowledge Score of Study Subjects before and After Administration of Structured Teaching Programme Regarding Acne.

This section includes findings related to the pre-test and post-test knowledge score of study subjects regarding acne

**Table 4.11: Frequency and Percentage Distribution of Study Subjects According To Pre-Test Knowledge Score N=60**

| Pre – test Knowledge Score | Pre – test Knowledge level | Frequency (f) | Percentage (%) |
|---|---|---|---|
| (0-20) | In Adequate | 20 | 33 % |
| (21-30) | Moderate | 40 | 66 % |
| (31-50) | Adequate | 0 | 0 % |

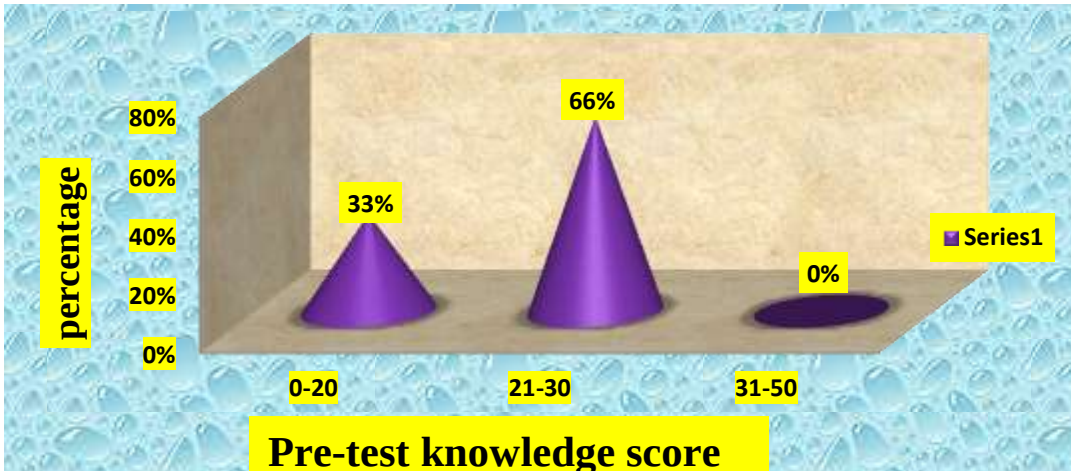


**Figure 4.12: Cone Diagram Presenting Percentage Distribution of Study Subjects According To Their Level of Pre-Test Knowledge**

Table 11 and fig.12 revealed that in pre-test, majority of the study subjects **(66%)** had **moderate knowledge, 33%** had inadequate knowledge and none of the study subjects had **adequate** knowledge.

**Post – Test Knowledge Level:**

**Table 12: Frequency and Percentage Distribution of Study Subjects According To Post-Test Knowledge Score N=60**

| Post-test Knowledge score | Post -test Knowledge level | Frequency (f) | Percentage (%) |
|---|---|---|---|
| (0-20) | In Adequate | 0 | 0 % |
| (21-30) | Moderate | 2 | 03% |
| (31-50) | Adequate | 58 | 97 % |

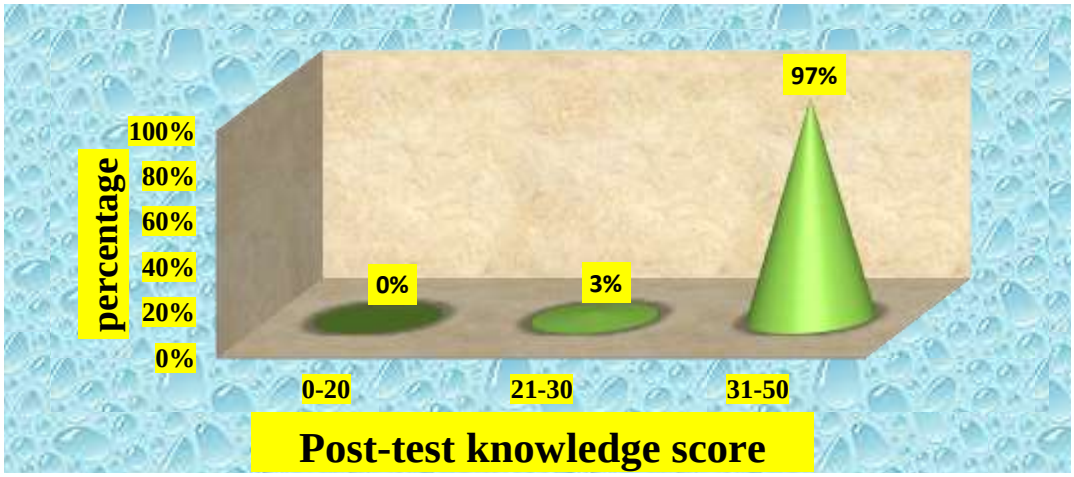


**Figure 4.13: Cone Diagram Presenting Percentage Distribution of Study Subjects According To Their Post-Test Knowledge Level**

Table 12 and fig.13 revealed that in post-test, majority of the study subjects **(97%)** had **adequate knowledge, 3%** had **moderate** knowledge and none of the study subjects had **inadequate** knowledge.

**Section III:**

**Comparison Of Pre-Test and Post-Test Knowledge Score of Subjects Regarding Acne To Assess The Effectiveness Of Structured Teaching Programme.**

**Table 4.13: Comparison of Study Subjects According To Pre-Test and Post-Test Knowledge Score N=60**

| LEVEL OF KNOWLEDGE | PRE-TEST | | POST-TEST | |
|---|---|---|---|---|
| | Frequency | %Age | Frequency | %Age |
| **Inadequate knowledge (0-20)** | 20 | 33% | 0 | 0% |
| **Moderate knowledge (21-30)** | **40** | **67%** | 2 | 3% |
| **Adequate knowledge (31-50)** | 0 | 0% | **58** | **97%** |
| **TOATAL** | 60 | 100% | 60 | 100 |

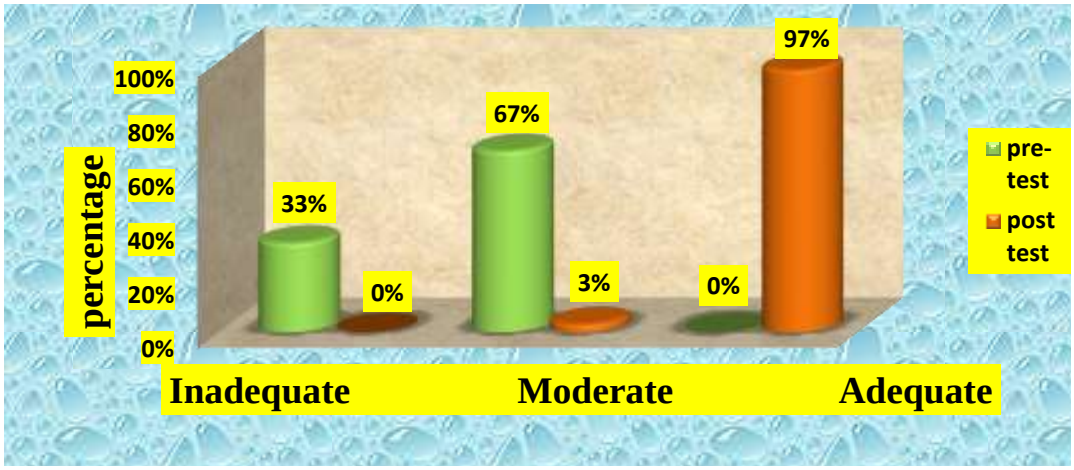


**Figure 4.14: Cylindrical Bar Diagram Showing Distribution Of Study Subjects In Terms Of Pre-Test And Post-Test Score Of Knowledge Regarding Acne**

The data presented in the table 13 and figure 14 revealed that in pre-test, **67%** of the study subjects **had moderate knowledge, 33%** had **inadequate knowledge** and **none** of the study subjects had **adequate knowledge.**

Whereas in post-test, **97% of subjects had adequate knowledge and 3% had moderate and none** of the study subjects **had inadequate knowledge** regarding acne.

This indicates that most of the study subjects gained adequate knowledge after administration of structured teaching programme.

**TABLE 4.14: Comparison between Pre-test and Post-test knowledge score and significance of difference between the Mean Pre-test and Post-test knowledge score N=60**

| Knowledge assessment | Mean | Median | S.D. | Range | Min | Max | Mean difference | Paired 't' test | p value |
|---|---|---|---|---|---|---|---|---|---|
| Pre-test | 21.81 | 21.00 | 2.06 | 7 | 17 | 24 | 20.22 | -31.521 | < **.00001*** |
| Post-test | 42.033 | 41 | 4.63 | 16 | 34 | 50 | | | |

*Significant at 0.05 level of significance

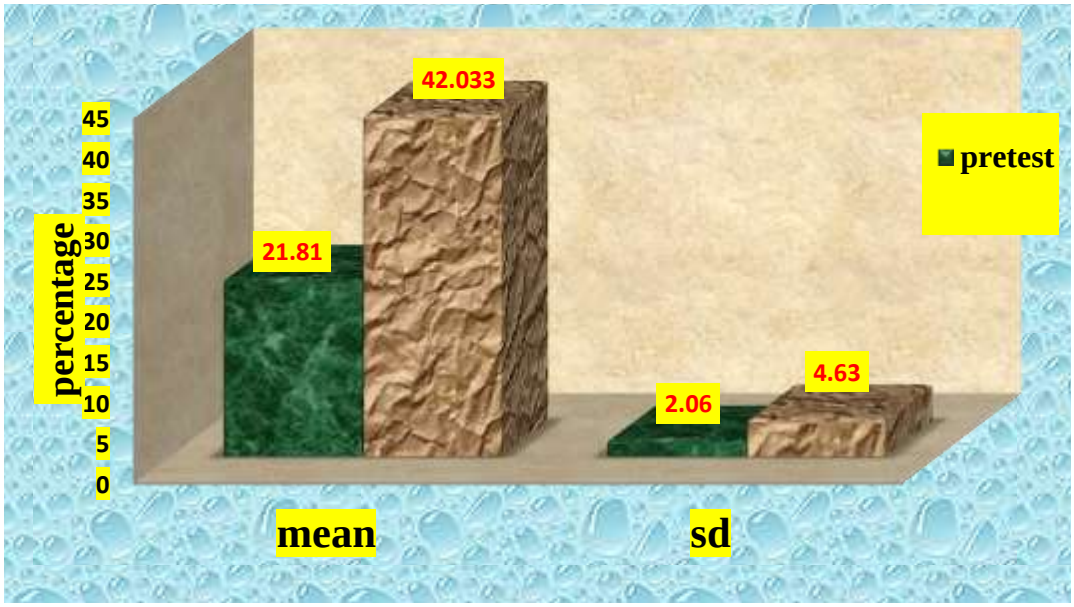


**Figure 15: Bar diagram representing comparison between Pre-test and Post-test knowledge score and the significance of difference between the Mean Pre–test and Post–test knowledge score of study subjects.**

The table 14 and fig.15 revealed the comparison between Pre-test and Post-test knowledge score of study subjects regarding Acne. The obtained 'P' value was found to be significant.

Hence the researcher rejects the null hypothesis **($H_0$)**, and research hypothesis **($H_1$)** is accepted which states that, "The mean post-test knowledge score of adolescent students regarding acne is higher than the mean pre-test knowledge score", as measured by knowledge questionnaire at 0.05 level of significance after implementation of STP which indicates that intervention was effective.

**Table 4.15: Area Wise Distribution of Correct Responses of the Subjects in the Pre-Interventional and Post Intervention**

| Sr. No | Areas of knowledge | Mean ± SD | | Mean Difference | p value |
|---|---|---|---|---|---|
| 1. | Structure and functions of skin comprising 17 items | Pre-test | 24.88±14.34 | 24.7 | 0.001* |
| | | Post test | 49.68±7.67 | | |

| Sr. No | Areas of knowledge | Mean ± SD | | Mean Difference | p value |
|---|---|---|---|---|---|
| **2.** | Introduction, definition, risk factors and causes of Acne comprising 9 items. | Pre-test | 27.55±15.28 | 24.12 | 0.001* |
| | | Post test | 51.67±8.45 | | |
| **3.** | Types, signs and symptoms, pathophysiology and grading of Acne comprising 13 items | Pre-test | 24.61±13.79 | 21.08 | 0.001* |
| | | Post test | 45.69±6.39 | | |
| **4.** | Treatment, complications and preventive measures of Acne comprising 11 items. | Pre-test | 26.27±14.59 | 28.18 | 0.001* |
| | | Post-test | 54.45±5.42 | | |

It is evident from table 15 that for each area of the STP, the mean ±sd of correct responses of the study subjects in the post-interventional assessment was higher than the mean ±sd of correct responses in the pre interventional assessment. This indicates that the structured teaching program was effective in improving the knowledge of the study subjects regarding acne.

## Section IV: Association of Demographic Variables with Pre-Test Knowldeg Score

This section deals with the analysis and interpretation of the association between Pre-test knowledge score regarding acne among adolescent students of Caset Experimental higher secondary school with the their selected demographic variables like gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information . Each demographic variable was sub-categorized into the following.

**Gender:** On the basis of gender, the study subjects were categorized into Male, Female

**Academic Qualification:** On the basis of academic qualification, the study subjects were categorized into $11^{th}$ $12^{th}$.

## Education of Parents:

- **Education of Mother:** On the basis of education of mother, study subjects were divided into, illiterate, high school, higher secondary and graduate and above
- **Education of Father:** On the basis of education of father, study subjects were divided into, illiterate, high school, higher secondary and graduate and above
- **Total Monthly Family Income:** On the basis of total monthly family income study subjects were divided into Rs 10000 – 20000, Rs 20000 – 30000 and Above Rs 30000
- **Any Previous Medical Care Received for Acne:** On the basis of any previous medical care received for Acne study subjects were divided into Yes and No
- **Source of Information:** On the basis of source of information study subjects were divided into friends, mass media and doctor
- Association was tested by using Chi-square test ($\chi^2$). To test the significance of association of demoghraphic variables with pre-test knowledge score, following null hypotheses were formulated.
- **$H_1$:** There is significant increase in mean post-test knowledge score as compared to mean pre-test knowledge score of adolescent students regarding acne at 0.05 level of significance.
- **$H_2$:** There is significant association of the pre-test knowledge score regarding Acne among adolescent students with their selected demographic variable i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information at 0.05 level of significance.

**TABLE 4.16: Association of pre-test knowledge score of study subjects regarding acne with their selected demographic variables. N=60**

| Variables | Sub items | Adequate | Moderate | inadequate | Chi Test | P Value | df | Result |
|---|---|---|---|---|---|---|---|---|
| **Gender** | Male | 7 | 4 | 12 | **2.52** | **0.238** | **4** | **S*** |
| | Female | 13 | 16 | 8 | | | | |
| **Academic qualification** | 11th | 8 | 15 | 6 | **1.06** | **0.42** | **2** | **S*** |
| | 12th | 2 | 27 | 2 | | | | |
| **Education of parents** | Illeterate | 0 | 0 | 0 | **2.527** | **0.60** | **4** | **S*** |
| | High school | 0 | 2 | 10 | | | | |
| | Hr. sec | 7 | 3 | 2 | | | | |
| | Grad & above | 8 | 22 | 8 | | | | |

| Variables | Sub items | Adequate | Moderate | inadequate | Chi Test | P Value | df | Result |
|---|---|---|---|---|---|---|---|---|
| **Any previous medical care received for acne** | Yes | 0 | 3 | 7 | 5.493 | 0.482 | 4 | NS |
| | No | 1 | 30 | 19 | | | | |
| **Total monthly family income** | Rs10,000-20,000 | 8 | 2 | 7 | 1.83 | 0.61 | 4 | NS |
| | Rs 20,000-30,000 | 04 | 4 | 1 | | | | |
| | Above rs30,000 | 10 | 18 | 6 | | | | |
| **Source of informa-tion** | Friends | 6 | 18 | 7 | **7.430** | **0.024** | **2** | **S*** |
| | Mass media | 4 | 8 | 4 | | | | |
| | Doctor | 8 | 2 | 3 | | | | |

S* = Significant

NS = Not Significant

The data presented in table 16 revealed that there was significant association of pre-test knowledge score of study subjects with their selected demographic variables like gender, academic qualification, education of parents and source of information.

Hence, the researcher accepts the research hypothesis **($H_2$)** which states that there is significant association between pre-test knowledge score of adolescent students with their selected demographic variables such as gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income and source of information at the significant level of 0.05.

However no significant association was found between pre-test knowledge score of study subjects with their selected demographic variables like, any previous medical care received for acne and total monthly family income.

Hence, the researcher rejects the research hypothesis **($H_2$)** and accepts null hypothesis **($H_{02}$)** which states that there is no significant association of pre-test knowledge score of adolescent students with their selected demographic variables such as gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income and source of information at the significant level of 0.05.

It is thus interpreted that the demographic variables like any previous medical care received for acne and total monthly family income had no association with the pre-test knowledge score of the study subjects. Although Pre-test knowledge score of study subjects should have association with any previous medical care received for acne but the study subjects who had received previous medical care for acne where less in number.

## 4.2 Summary:

This chapter has dealt with the analysis and interpretation of data collected from 60 study subjects in selected higher secondary school of Srinagar. Descriptive and inferential statistics was used for analysis. Chi square test was used to test association of pre-test knowledge score with selected demographic variables.

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# 5. Discussion

## Discussion:

This chapter deals with detailed discussion of the findings of the study interpreted from statistical analysis. The findings are discussed in relation to objectives. Significant findings of the study are written in relation to other previous studies. The studies conducted by other researchers also showed the similar findings. All the supporting studies have revealed that any structured teaching programme regarding acne was effective in enhancing the knowledge of adolescent students. The present study was intended to assess the effectiveness of structured teaching programme on knowledge regarding acne among adolescent students at Caset Experimental Higher Secondary School Srinagar, Kashmir. Data was collected by using a structured knowledge questionnaire from 60 study subjects.

## Objectives of the Study:

**a.** To assess the pre-test knowledge score of adolescent students regarding acne.
**b.** To assess the post-test knowledge score of adolescent students regarding acne.
**c.** To compare the pre-test & post-test knowledge score of adolescent students regarding acne.
**d.** To find the association of pre-test knowledge score of adolescent students regarding acne with their selected demographic variables i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information.

## Research Hypothesis:

- **$H_1$:** There is significant increase in mean post-test knowledge score as compared to mean pre-test knowledge score of adolescent students regarding acne at 0.05 level of significance.
- **$H_2$:** There is significant association of the pre-test levels of knowledge regarding acne among adolescent students with their selected demographic variables i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information at 0.05 level of significance.

## Discussion about Demographic Variables of Study Subjects:

- The findings of the study showed that 52% of the study subjects were females and 48% of study subjects were males.
- 50% of the study subjects belonged to $11^{th}$ class and 50% of the study subjects belonged to $12^{th}$ class.
- As per the educational status of mother the findings of the study showed that mothers of majority of the study subjects **(57%)** were having qualification of graduate and

above and mothers of **36%** of study subjects were having qualification of higher secondary while as only **(7%)**belonged to high school group and **none** was illeterate.

- As per the educational status of father the findings of the study showed that fathers of majority of the study subjects i.e. **43%** were having qualification of higher secondary followed by **42%** with graduation and above. Only **15%** were having high school qualification and **none** was illiterate.
- Majority of the study subjects **(84%)** did not had received any previous medical care for acne while **16%** had received previous medical care for acne.
- Majority of the study subjects **(44%)** belonged to families with a total monthly income above Rs 30,000and **38%** belonged to families having total monthly income of RS 20000-30000. While as only **(18%)** belonged to families with total monthly income of Rs 10000-20000.
- Majority of the study subjects **(77%)** had mass media as source of information, **15 %** had friends and only **8%** had doctor as source of information.

## Knowledge of the Study Subjects Regarding Acne before Administration of Structured Teaching Programme:

### Objective 5.1: To Assess the Pre-Test Knowledge Score of Adolescent Students Regarding Acne

The findings of the study revealed that in pre-test maximum number of the study subjects **(66%)** had **moderate knowledge** and **33%** of study subjects had inadequate knowledge. None of the study subjects was found to have adequate knowledge regarding acne. The findings were supported by a study conducted by **Kumar D (2012)** to assess the effectiveness of structured teaching program on knowledge regarding acne among adolescent students at a selected school of Bangalore (N=60). Findings of the study revealed that in the pretest majority of the study subjects **(73%)** had moderate knowledge, **(22%)** had inadequate knowledge and **(5%)** had adequate knowledge regarding Acne and its prevention indicating need for education.[66]

The findings were further supported by a descriptive study conducted by **Ganga P, Harish B (2014)** to assess the knowledge regarding acne among Nepali school students. Findings of the study revealed that majority of the study subjects **(71.7%)** had inadequate knowledge and **(28.3%)** had moderately adequate knowledge and **none** of the study subjects had adequate knowledge regarding acne.[60]

## Knowledge of the Study Subjects Regarding Acne after Administration of Structured Teaching Programme:

### Objective 5.2: To Assess the Post-Test Knowledge Score of Adolescent Students Regarding Acne.

The findings of the study showed that in post-test majority of the study subjects (**97%)** % had adequate knowledge and least number of study subjects **(3%)** had moderate knowledge regarding acne. None of the study subjects was found to have inadequate knowledge regarding acne.

The findings were supported by a study conducted by **Joseph A (2010)** to determine the effectiveness of structured teaching program on knowledge regarding acne, its prevention and management among adolescent boys and girls studying at St. Philomena's college, Mysore. (N=50). Findings of the study revealed that in posttest majority of the study subjects **(85%)** had good knowledge, **(13.8%)** had average knowledge and only **(1.2%)** had poor knowledge regarding acne.[68]

The findings were further supported by a descriptive study conducted by **Kumar D (2012)** to assess the effectiveness of structured teaching program on knowledge regarding acne among adolescent students at a selected school of Bangalore. Findings of the study revealed that in post- test majority of the study subjects, (**86%)** had adequate knowledge, **(14%)** had moderate knowledge and none had inadequate knowledge regarding acne, indicating that the structured teaching programme was effective.[66]

## Comparison of Pre Test and Post Test Knowledge Score of Study Subjects Regarding Acne:

**Objective 5.3: To Compare The Pre-Test & Post-Test Knowledge Score Of Adolescent Students Regarding Acne.**

The findings of the study showed that the mean post-test knowledge score (42.033±4.63) of the study subjects regarding acne is significantly higher than the mean pre-test knowledge score (21.81±2.06) at 0.05 level of significance. This indicated that structured teaching programme was effective in enhancing the knowledge of adolescent students regarding acne. The findings were supported by a study conducted by **Kumar D (2012)** where he has found that mean posttest knowledge score **24.05+3.036** of the study subjects was significantly greater than mean pre-test knowledge score **16.96+3.816,** which indicated the effectiveness of intervention (structured teaching program).[66]

The findings were also supported by a study conducted by **Mary S J (2010)** to assess the effectiveness of video assisted teaching program on knowledge regarding acne among adolescents in a selected school in Gulbarga.(N=50). Findings of the study revealed that mean posttest knowledge score **29.80** of the study subjects was significantly greater than mean pre-test knowledge score **20.10,** which indicated the effectiveness of the structured teaching programme.[67]

## Association of Pre-Test Knowledge Score with Selected Demographic Variables:

**Objective 4: To Find The Association Of Pre-Test Knowledge Score Of Adolescent Students Regarding Acne With Their Selected Demographic Variables I.E. Gender, Academic Qualification, Education Of Parents, Any Previous Medical Care Received For Acne, Total Monthly Family Income & Source Of Information.**

The findings of the present study revealed that there was a significant association between Pre-test knowledge score with their selected demographic variables like gender, academic qualification, and education of parents and source of information.

However no significant association was found between pre-test knowledge score of study subjects with their selected demographic variables like any previous medical care received for acne and total monthly family income.

The findings were supported by a study conducted by **Kumar D (2012)** where the findings revealed that there was a significant association between Pre-test knowledge score and the selected demographic variables like **gender**, and **source of information.**[66]

The findings are also supported by a study conducted by **Ganga P, Harish B (2014)** who revealed that there was significant association between pretest knowledge score and selected demographic variable like **academic qualification**.[60]

## Summary:

This chapter dealt with the significant findings of the study in relation to other previous studies. The studies conducted by other researchers also showed the similarities and contradicting findings like that of present study. All the supporting studies have revealed that any structured teaching program regarding acne was effective in enhancing the knowledge of study subjects regarding acne.

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# 6. Summary & Conclusion

## Summary, Findings, Conclusion, Nursing Implications, Limitations and Recommendations:

### Summary:

This chapter gives a brief Summary of the dissertation, identifying the main methods used and discusses their implications. The present study was aimed "to assess the effectiveness of structured teaching programme on knowledge regarding acne among adolescent students of Caset Experimental higher secondary school, Srinagar, Kashmir.''

### Objectives of the Study:

a. To assess the pre-test knowledge score of adolescent students regarding acne.
b. To assess the post-test knowledge score of adolescent students regarding acne.
c. To compare the pre-test & post-test knowledge score of adolescent students regarding acne.
d. To find the association of pre-test knowledge score of adolescent students regarding acne with their selected demographic variables i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information.

### Research Hypothesis:

- **$H_1$:** There is significant increase in mean post-test knowledge score as compared to mean pre-test knowledge score of adolescent students regarding acne at 0.05 level of significance.
- **$H_2$:** There is significant association of the pre-test knowledge score regarding acne among adolescent students with their selected demographic variable i.e. gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information at 0.05 level of significance.

**The Literature Review** included a Medline search for published and unpublished research studies, a manual search of recent relevant literature, and a citation review of relevant primary and review articles, contact with primary investigators and clinical observation of case studies. The conceptual frame work used in the study was based on the Imogene King's Goal Attainment Theory or model.

This model aims at assessing the knowledge level of adolescent students (action), developing the self-structured questionnaire (reaction) followed by administration of structured teaching programme (interaction) to measure the gain in level of knowledge level after exposure to the structured teaching programme (transaction) at Caset Experimental Higher Secondary School Srinagar. Gain in knowledge is measured by comparing the mean post-test knowledge score with mean pre-test knowledge score.

Permission was obtained from the concerned authority for conducting the study. A pre experimental study design was used to assess the effectiveness of structured teaching programme. Simple random sampling technique was used to collect data from 60 study subjects who fulfilled the inclusion criteria. Data was collected using demographic proforma and structured knowledge questionnaire consisting of 50 items. The tool and structured teaching programme were validated by 13 experts. Reliability co-efficient of knowledge was found to be **0.95** revealing that tool was feasible for main study. Pilot study was conducted from 01- 03-2018 to 10-03-2018 on 6 study subjects and study was found feasible. Final study was conducted among 60 randomly selected study subjects from 14-03-2018 to 21-04-2018. Following the pretest, structured teaching programme was implemented on the same day and posttest was taken on 7$^{th}$ day after administration of structured teaching programme.

## Major Findings of the Study:

## Findings Related To The Demographic Variables:

- The findings of the study showed that 52% of the study subjects were females and 48% of study subjects were males.
- 50% of the study subjects belonged to 11$^{th}$ class and 50% of the study subjects belonged to 12$^{th}$ class.
- As per the educational status of mother the findings of the study showed that mothers of majority of the study subjects **(57%)** were having qualification of graduate and above and mothers of **36%** of study subjects were having qualification of higher secondary while as only **(7%)**belonged to high school group and **none** was illeterate.
- As per the educational status of father the findings of the study showed that fathers of majority of the study subjects i.e. **43%** were having qualification of higher secondary followed by **42%** with graduation and above. Only **15%** were having high school qualification and **none** was illiterate.
- Majority of the study subjects **(84%)** had not received any previous medical care for acne while **16%** had received previous medical care for acne.
- Majority of the study subjects **(44%)** belonged to families with a total monthly income above Rs 30,000and **38%** belonged to families having total monthly income of RS 20000-30000. While as only **(18%)** belonged to families with total monthly income of Rs 10000-20000.
- Majority of the study subjects **(77%)** had mass media as source of information, **15 %** had friends and only **8%** had doctor as source of information.

## Findings Related To Assessment Of Knowledge Score Before And After Administration Of Structured Teaching Programme Regarding Acne:

### Pre-Test:

- Majority of the study subjects **(66%)** had **moderate knowledge, 33%** had inadequate knowledge and none of the study subjects was found to have **adequate** knowledge regarding acne.

**Post-Test:**

- Majority of the study subjects **(97%)** had **adequate knowledge** and least number of study subjects **3%** had **moderate knowledge** regarding acne. None of the study subjects had **inadequate knowledge** regarding acne.

## Findings Related To Comparison of Pre-Test and Post-Test Knowledge Score of Study Subjects Regarding Acne:

The mean ± SD post-test knowledge score **(42.033±4.63)** of the study subjects regarding acne was significantly higher than that of the mean ± SD pre-test knowledge score **(21.81±2.06)** at 0.05 level of significance. This indicated that structured teaching programme was effective in enhancing the knowledge of adolescent students regarding acne.

**Findings related to association of pre-test knowledge score of study subjects with their selected demographic variables i.e.** gender, academic qualification, education of parents, any previous medical care received for acne, total monthly family income & source of information.

A significant association was found between Pre-test knowledge score of study subjects with their selected demographic variables like gender, academic qualification, education of parents and source of information.

However no significant association was found between pre-test knowledge score of study subjects with their selected demographic variables like, any previous medical care received for acne and total monthly family income.

## Conclusions:

## The Following Conclusions Were Drawn on The Basis Of The Findings Of The Study:

- Pre-test findings showed that the adolescent students had inadequate knowledge regarding acne so there was need to educate them.
- The structured teaching programme was found effective in improving the level of knowledge regarding acne that was evident from post-test knowledge score.
- Significant association was found between the pre-test knowledge score of adolescent students with their selected demographic variables such as gender, academic qualification, education of parents and source of information.
- No significant association was found between the pre-test knowledge score of adolescent students with their selected demographic variables such as any previous medical care received for acne and total monthly family income. Although Pre-test knowledge score of study subjects should have association with any previous medical care received for acne but the study subjects who had received previous medical care for acne where less in number.

- This indicates that an effective structured teaching programme must be instituted in school / college with a view to make the adolescent students knowledgeable about different physical, hormonal as well as skin changes, which helps to promote a positive attitude, and healthy practices of life.

## Implications:

## Implications to Nursing Practice:

- Nurses as competent health professionals have responsibility to promote health information and practice among adolescent girls and boys in the society.
- It is necessary to have guidance services in the school, consisting of school health nurse, teachers and parents, so that they can provide guidance to the adolescents from their pre-adolescent period itself.
- Generally, the adolescents are shy and resistant to speak about changes related to adolescence to their parents or family members. So there is a need to conduct an awareness programme involving school teachers to guide them (adolescents) and keep them in a right track.
- Also most of the parents have a poor attitude towards the skin changes of adolescents. They consider Acne as a mere hormonal change of adolescence and do not pay much attention towards treatment and associated complications of acne. Nurses can play a vital and major role in changing the attitude of parents regarding these aspects. She as a health promoter can make the parents aware about the various psychological and social problems associated with acne and means of overcoming them.
- Nursing service department can have a health education cell with a bunch of adequately prepared nurses. Nursing personnel should be given in service education regarding the importance of psychological and social problems faced by adolescents having acne. Carefully prepared health education programme as part of mass education will be useful in creating, awareness among general public. Nurses have a crucial role in educating the public through such programmes.

## Implications to Nursing Education:

- As teachers are the key personnel in imparting knowledge to students there is a need to have a special training programme for the general line teachers regarding various physical and emotional changes associated with adolescence, so that they are equipped with adequate knowledge to guide their students. This helps in proper dissemination of information.
- There is a need of coordination between nursing education and general education. Basic education of nursing need to include the aspects of education of adolescents, with a special focus on teaching about adolescence and the accompanying change. Periodic school health programmes should be conducted and involve active participation of nurses. The primary task is to help the nurse to master at basic level be able to disseminate necessary information to the students.
- Nursing students can be instructed to conduct the health education programme during their school health visits.

- Nurses need to develop skills in generating new and effective teaching tools and techniques in preparing health teaching materials related to acne at the level of students understanding. Improved and newer techniques will be used for motivating the student's participation.

## Implications to Nursing Administration:

- Nursing personnel need to be prepared to take leadership role in educating school teachers as well as parents regarding the physical, psychological and social problems faced by adolescents with acne
- They need to inculcate interest in educating the school teachers and parents during their school visits and family visits and disseminate information on areas of adolescence and associated problems.
- Nurses need to take up responsibility to publish more informative booklets and other planned teaching programmes for teachers, parents and general public as well.

## Implications to Nursing Research:

- Compared to other aspects of health there is a need for extended and intensive nursing research on the areas of psychological and social problems faced by adolescent students having acne using better methods of teaching and effective teaching materials.

- At the same time awareness about the importance of conducting research in the area of psychological and social problems faced by adolescent students having acne can be created among the nurses who are working in the clinical areas. It will help the future generation to become healthy.

## Limitations:

a. Sample was only selected from Caset Experimental Higher Secondary School Srinagar and small number of sample limits the generalization of the findings.
b. Use of structured knowledge questionnaire restricts the amount of information that could be collected from the respondents.
c. Long-term follow-up could not be carried out due to time constrains.
d. Only single domain i.e. knowledge was considered in the present study.
e. Study was limited to literate adolescents only.

## Recommendations:

## Based On The Findings Of The Study, The Following Recommendations Were Made:

a. A similar study may be replicated using a large sample and different demographic variables, thereby findings can be generalized.

b. A Study can be conducted to find out the attitude of parents, teachers and students regarding Acne.
c. A longitudinal study may be conducted to assess the psychological problems faced by adolescents with Acne.
d. A follow-up study can be done to determine the effectiveness of planned teaching program
e. A study can be conducted on the effectiveness of Self Instructional Module (SIM) regarding acne
f. A comparative study can be conducted among the urban and rural adolescent student's knowledge regarding acne.
g. A comparative study can be done with different groups of students from different schools.
h. A comparative study can be conducted among the junior secondary school students and senior secondary school student's knowledge regarding acne.
i. A similar study can be replicated in different settings other than school like dermatology clinics and community.

## Summary:

This chapter dealt with summary of the research study, its major findings, and conclusions along with implications, limitations and recommendations.

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