

“A Study To Assess The Quality Of Life Among School Going Children With Bronchial Asthma In Selected Hospitals, Kolkata.”

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Abstract

The investigator conducted a non-experimental descriptive study to assess the quality of life among school going children with bronchial asthma in selected hospitals, Kolkata. Data were collected by using interview technique from 100 children suffering from bronchial asthma who were selected by purposive sampling technique. Roy's adaptation model served as a conceptual framework for the present study. The study findings revealed that 63% of the children were in the age group of 7 to 9 years, 64% were boys and 74% of them were studying in between class II to IV. 69% of the child belongs to urban areas and 44% were single child. 77% of the children suffering from the bronchial asthma for more than 12 months and 81% were having family history of bronchial asthma. Maximum numbers of the children were on inhalers. Quality of Life was moderately impaired by 59%, 73% and 74 % respectively in all the three domains. The study findings also revealed that mean, mean%, median and standard deviation

for all the three domains of quality of life score tend to be higher that indicates more the higher score more affected quality of life of children suffering from bronchial asthma. There was positive and significant relationship among inter-domain of quality of life of children suffering from bronchial asthma ($p < 0.05$). There was significant association of quality of life with selected socio-demographic variables like education of the participants, type of family, number of siblings, history of hospitalization, family history of bronchial asthma at 0.05 level of significance. These study findings can be implicated in community health nursing, nursing practice and nursing research.

Furthermore, these studies are required to find out the reasons to control of bronchial asthma among those who are adherent.

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I. Introduction

“The quality of life is more important than life itself”----- Alexis Carrel

“The quality, not the longevity of one's life is what is important”-----Martin Luther King.

“The child is father of the Man”----William Wordsworth.

Today's society is complex and ever changing. As children grow they must not learn to cope with current demands but also to prepare for many unexpected events they would face in their tomorrows. Changes brought by new techniques and technologies will continue to have an impact on society as a whole.¹

Background of the study

Childhood is the age span ranging from birth to adolescence. Many disorders affect the young buds either from birth or on the developmental period. One such acquired disorder is Asthma. The most common chronic disease among children and causes very high degree of morbidity under 17 years of age.²

Definition of term “Quality of Life” is different to everyone. The term quality of life is used to evaluate the general well-being of individuals and societies. The term is used in a wide range of contexts, including the fields of International Development, healthcare and politics. Quality of life should not be confused with the concept of standard of living which is based primarily on income. Instead, standard indicators of the quality of life including not only wealth and employment, but also the built environment, physical and mental health, education, recreation and leisure time, and social belonging³.

“Asthma” is a Greek word which means „breathless“ or „to breathe with open mouth.“ The Global Strategy for Asthma Management and Prevention Guidelines define asthma as „a chronic inflammatory disorder of the airways associated with increased airway hyper-responsiveness, recurrent episodes of wheezing, breathlessness, chest tightness, and coughing, particularly at night/early morning“. Asthma is often called Reactive Airway disease. There is a marked variability in the global prevalence rates. It is reported to involve

from about 1% to over 20% individuals in different populations. An overall global asthma burden of about 300 million patients had been estimated previously. Prevalence rates from India and several other Asian countries have been reported to lie between 2% to 5% in most countries. The Indian estimates, based on the average, 2.05% prevalence of current asthma was 21 million for all age groups. There is a huge economic burden of asthma on both the individual and the society. The estimated total annual cost of about Rs. 32 billion for patients with chronic asthma with additional cost of about Rs. 5 billion for acute asthma (for the year 2011) is an enormous burden for the healthcare infrastructure of a developing country⁴.

As per WHO guidelines updated in year of 2016, internationally between 100-150 million people around the globe roughly equivalent of the population of the Russian Federation suffer from asthma and this number is rising. Worldwide, deaths from this condition have reached over, 180,000 annually. Around 8% of the Swiss population suffers from asthma. Generally estimated 4 million West European as a whole has doubled in 10 years according to UCB institute of Allergy, in Belgium. In U.S., the number of asthmatics has kept by over 60% since the early 1980 and deaths have doubled 5000/year. Among 3 million asthmatics in Japan, 7% have severe and 30% have moderate asthma. As per WHO, In India, rough estimates indicate a prevalence of asthma between 10% and 15% in 5-11 year old children⁵.

According to WHO, updated April 2017, Asthma is a major non communicable disease characterized by recurrent attacks of breathlessness and wheezing, which vary in severity and frequency from person to person. Symptoms may occur several times in a day or week in affected individuals, and for some people become worse during physical activity or at night. During an asthma attack, the lining of the bronchial tubes swell, causing the airways to narrow and reducing the flow of air into and out of the lungs. Recurrent asthma symptoms frequently cause sleeplessness, daytime fatigue, reduced activity levels and school and work absenteeism. Asthma has a relatively low fatality rate compared to other chronic diseases and the latest WHO estimates, some 235 million people currently suffer from asthma. It is a common disease among children and appropriate management of asthma can enable people to enjoy a good quality of life⁶.

Chroma.J, Slany J conducted a prevalence study on quality of life of children with bronchial asthma and determine that how children with bronchial asthma disease assess their quality of life and to find domains of physical and psychosocial health in relation to age and gender. The quality of life compared with the healthy children and parents of asthmatic children and healthy parents. The mean quality of life of asthmatic children is 74.41, a statistically significant difference between the physical (78,81) and psychosocial (72,06) dimensions of health. In this study the analysis shows that girls evaluate their quality of life worse than boys. The worst quality of life was found among children in the age group 5-7 years⁷.

Lin-Shein Fu, Ming-chin Tsai conducted a study to find out asthma exacerbations in children showed that asthma is the most common chronic lower respiratory tract disease in childhood throughout the world. Despite advances in asthma management, acute exacerbations continue to be a major problem in patients and they result in a considerable burden on direct/ indirect health care providers. A severe exacerbation occurring within one year is an independent risk factor. In this study, it provides an overview of current knowledge about asthma exacerbation, its definition, impact on health care providers and associated factors⁸.

Need for the study

Between 100 and 150 million people around the globe -- roughly the equivalent of the population of the Russian Federation -- suffer from asthma and this number is rising. World-wide, deaths from this condition have reached over 180,000 annually. Around 8% of the Swiss population suffers from asthma as against only 2% some 25-30 years ago. In Germany, there are an estimated 4 million asthmatics. In Western Europe as a whole, asthma has doubled in ten years, number of asthmatics has leapt by over 60% since the early 1980s and deaths have doubled to 5,000 a year. There are about 3 million asthmatics in Japan of whom 7% have severe and 30% have moderate asthma. In Australia, one child in six under the age of 16 is affected⁵.

Sowmini P Kamath, Shrividya Shrisha Kumar, Animesh Jain, Anand Ramakrishna, Shantharam B Baliga conducted a study on prevalence of bronchial asthma among school going children in South India and revealed that asthma is one of the most common chronic diseases of childhood. Asthma limits child's daily activities including sleep, academics and play. Estimated burden in India is presumed to be greater than 15 million. In 2004, India accounted for 277 disability adjusted life years (DALYs) lost per one lakh population and 57000 deaths. The prevalence of asthma in children in the Indian subcontinent as per the ISSAC study has increased in phase III as compared to phase I by 0.02% per year in age groups 13-14 years and by 0.06% for age groups 6-7 years. Bronchial asthma prevalence has shown a steady rise and affects an estimated 4 to 7% of the people Worldwide. Childhood bronchial asthma varies widely from country to country. The prevalence ranges from 4 to 32% at the age of six to seven years and also holds good for ages 13 and 14 years. In a systematic review of studies on prevalence of asthma among Indian children, the mean prevalence was

7.24 ± SD 5.42. The median prevalence was 4.75% (with IQR = 2.65 – 12.35%) and the childhood asthma among children 13 – 14 years of age was lower than that in younger children (6 – 7 years of age)⁹.

As per Global Strategy for Asthma Management and Prevention 2017, asthma is one of the most common chronic diseases worldwide with an estimated 300 million affected individuals. Prevalence is increasing in many countries, especially in children. It causes majority school and work absenteeism¹⁰.

Parvaiz A Koul, Dharmesh Patel conducted a study on Indian guidelines for asthma: adherence is the key revealed that it is a common, chronic inflammatory disease of the airways that affects people of all ages and imposes a substantial burden on patients, their families, and the community. More than 300 million individuals currently suffering from asthma worldwide, about a tenth of those living in India. The prevalence of asthma has been estimated to range 3-38% in children and 2-12% in adults, being the commonest chronic disorder among children¹¹.

Wander Arvinder, Bhargava Siddharth, Puneet A Pooni, Kakkar Shruti, Arora Kamaldeep conducted an observational study on Quality of Life with bronchial asthma. This study was conducted to assess the quality of life (QOL) in children with bronchial asthma and to study the impact of various clinical and socio-demographic factors on their QOL. Of the 90 children enrolled, 20 were newly diagnosed and 70 were follow up cases with male female ratio of 2.1: 1. Children reported more impairment in PAQLQ(S) scores if the onset of symptoms was before one year of age, in those with frequent exacerbations, poor treatment compliance, poorly controlled symptoms and children with history of school absenteeism. The mean PAQLQ(S) score was lowest in emotional function among newly diagnosed and follow up cases.

Statistically significant difference was observed between PAQLQ(S) scores of controlled partly controlled and uncontrolled cases of asthma¹².

Hewaida M Elshazly, Ibrahim E Mahalawy, Hala M Gabr, Sameh A Abd El Naby, Eman E Elzoghby conducted a study on Quality of Life among asthmatic children attending out-patient department in Menoufia University Hospital. The study was carried out on 100 children with bronchial asthma, aged between 7 and 15 years, attending the Outpatient Clinic of the Pediatric Department of Menoufia University Hospital, and their primary caregivers. These children were compared with 100 control children whose diagnosis was free of bronchial asthma or any chronic diseases, as well as their primary caregivers. The scores of all parents and children in the study group were lower than the scores of controls. Parents' activity score and child's activity score were the most affected domains. There was significant relationship between the parents' score and child's score. The caregiver's and child's health-related Quality of Life was significantly associated with each other. Age, sex, and socioeconomic status revealed no significant difference¹³.

Florence Tunde-Ayinmode Mosunmola conducted a study on children with bronchial asthma assessed for psychosocial problems in a teaching in Nigeria. Seventy five (75) children aged 7 to 14 years with bronchial asthma who were attending clinics at the University of Ilorin Teaching Hospital, Ilorin, Nigeria, were assessed with Child behavior questionnaire and a semi-structured questionnaire.

Probable psychological morbidity was present in 25% of the children. The most frequently reported social impairments associated with the disease were: interference with play (60%), domestic work (49%), fear of dying anytime (29%) and feeling of being a burden on the family (25%). Psychological morbidity was significantly associated with lower maternal education ($p=0.020$) and occupation ($p=0.038$), polygamy ($p=0.012$), fathers having more than 5 children ($p=0.027$) and mothers having inadequate spousal support ($p=0.012$)¹⁴.

Nair Sathyajith, Nair Sajitha, Sundaram K. R. conducted a prospective study to assess the quality of life in children with asthma using the paediatric asthma quality of life questionnaire and showed that out of 75 children with asthma in the age group from 7 to 17 years of age, 69 were included in the study and their quality of life were assessed. An asthma clinical severity score was also used to assess the clinical condition simultaneously. There was a significant change in the activity and symptom category ($P < 0.001$), but there was no significant change in the emotional domain even after medical intervention ($P = 0.563$). This indicates that although the activity level of children was improved with significant symptomatic improvement, but these children did not recover emotionally from the impact of the disease with medical intervention. In spite of there being a positive change in the groups after intervention, no statistically significant change was noted in the PAQLQ scores¹⁵.

Pal Ranabir, Dahal Sanjay , Pal Shrayan conducted a study prevalence of bronchial asthma in Indian children showed prevalence of childhood bronchial asthma and allergic disease has increased in developed countries. The result showed that wide differences in samples, primary outcome variables, lack of consistency in age category, rural–urban variation, criteria for positive diagnosis, and study instruments confounded the outcome variables. Childhood asthma among children 13 – 14 years of age was lower than the younger children (6 – 7 years of age). Urban and male predominance with wide inter-regional variation in prevalence was observed¹⁶.

Trzcieniecka-Green A , Bargiel Kamila, et al conducted a study on Quality of Life and activity of children suffering from bronchial asthma on 137 children. The following questionnaires were used in the study Pediatric Asthma Quality of Life Questionnaire (PAQLQ) and found that illness duration ($r = -0.2$; $P = 0.22$)

and gender ($P = 0.37$) do not influence the quality of life. It appears that among children ill with asthma a higher level of quality of life is typical for the children who live in the country side in comparison with those from cities ($P < 0.05$). The comparison was also made in terms of everyday activity of children ill with asthma and non-asthmatic children. The children ill with asthma displayed less social contacts with peers/friends ($P < 0.05$) and they performed less physical activities ($P < 0.05$). The study points concluded that the possible beneficial effects of activating children's social interactions, creating conditions for appropriate development of their social competences, and of stress reduction connected with social interactions. Asthmatic children should also be encouraged to intensify appropriate physical activity¹⁷.

Juniper EF conducted a study on how important is quality of life in paediatric asthma and found that children with asthma are distressed by the symptoms (shortness of breath, wheezing, and cough), and they are limited in their day-to-day activities (sports, school, work, and playing with pets). In addition, children are often upset and frightened by asthma attacks, and express anger (younger children) and frustration (older children) because they have asthma. They frequently feel different from their friends and get frustrated that they cannot participate in activities¹⁸.

Statement of the problem

A study to assess the quality of life among school going children with bronchial asthma in selected hospitals, Kolkata.

Purpose

The purpose of the present study is to investigate quality of life among school going children with bronchial asthma & it will help to recognize required care to optimize quality of life.

Objectives

1. To assess the quality of life among school going children with bronchial asthma as measured by Modified Pediatric Asthma Quality of Life Questionnaire (PAQLQ).
2. To find out relationship among domains of quality of life of school going children with bronchial asthma.
3. To find association between quality of life of school going children with bronchial asthma & selected socio demographic variables.

Variables

Research variables:- Quality of life of school going children with bronchial asthma.

Operational definitions

- **Bronchial Asthma** – In this study bronchial asthma refers to the heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms such as wheeze, shortness of breath, chest tightness and cough that vary over time and in intensity, together with variable expiratory airflow limitation, as per GINA Guideline 2017.
- **Quality of life** – In this study quality of life represents the symptoms, activity limitation and emotional functioning as perceived by school going children with bronchial asthma.
- **School going Children** – In this study, school going children refers to the children aged (7-12) years, studying in school & attending asthma clinic of outpatient department and suffering bronchial asthma for more than 6 months.
- **Selected Variables** – In this study the variables are age, gender, educational standard of the child, type of family, number of siblings, duration of illness, number of hospitalization, treatment modalities & family history of bronchial asthma.

Assumptions

The researcher assumes that

- School going children with bronchial asthma may have some degree of impaired quality of life.
- Willing to participate in the study.

Conceptual framework

Conceptualization refers to the process of developing & refining abstract ideas. A conceptual model provides for logical thinking, systematic observations & interpreting the observed study.

Conceptual framework of the present study was conceptualized & based on Roy Adaption Model.

Polit & Hungler (1999) defines conceptual framework (model) as interrelated concepts of abstractions that are assembled together in some rationale scheme by virtue of its relevance to a common theme. They provide for thinking, observing and interpreting what is seen. The conceptual framework can serve as a spring

broad for the generation of research hypothesis and can provide an important context for further research. Conceptual framework provides a certain frame of relevance for clinical practice, research and education¹⁹.

The conceptual frame work for the present study was based on **Sister Callista Roy’s adaptation model**. In her theory Roy viewed individuals as a whole system constantly interacting with the environment ^{[20], [21]}.

Input: In order to maintain homeostasis, individual adopts or responds to any changes that occur from internal and external stimuli. According to Roy, as an open living system, the person receives inputs or stimuli from both the environment and self. The adaptation level is determined by the combined effect of the stimuli. Roy classified the stimuli in three groups – Focal, Contextual and Residual.

In the present study **focal stimuli** were disease, repeated hospitalization and visits to outpatient department, school children diagnosed with bronchial asthma. **Contextual stimuli** for the present study were type of family, number of siblings and residential place.

Residual stimuli referred for the present study were past experience of hospitalization, number of hospitalization, duration of illness, age and gender of the child.

Control Process: According to Roy’s view in order to maintain homeostasis people must respond or adapt to any change that occurs, either from internal and external stimuli, which act as method of coping. The regular coping subsystem responds automatically through neural, chemical and endocrine coping processes. The cognator coping process subsystem responds through four cognitive emotive coping processes.

So, control processes in this study were the adaptation of the child with the different dimension in a child’s life like activity limitation, emotional functioning, symptoms. The regular subsystem was not included in the present study.

Effectors: All people have certain needs which they feel to meet in order to maintain integrity. Roy has classified them in four adaptive modes: Physiological, self-concept, Role function and Interdependence.

In the present study physical comfort in ADLs, functioning independently was considered as **physiological function**.

Self concept mode included feeling of interdependence, emotional stability, feeling of happy / unhappy, sadness, anger, left out, feeling of short-tempered.

Role function indicated age appropriate schooling, effective performance in school.

Interdependence was viewed as cooperation from peers and family support.

So, these are the ways by which a child tries to cope with the stimuli causing stressful situation.

Output: According to Roy’s view, adaptation occurred when persons respond positively to stress. These adaptation responses promote the integrity of the person which led to health. So, in this study the children and parents who adopt good coping strategies and able to cope with the stimuli effectively would have increased quality of life / having no impairment and who had not been able to adopt effective coping strategies might continue to experience the decreased quality of life/ severe impairment.

Delimitation of the study

The study will be delimited to the

- Children in the age group of 7-12 years & who are suffering from bronchial asthma more than six months in outpatient department in selected hospitals Kolkata.
- Willingness to participate in the study.
- Participants who are present during the study.
- Participants who can understand Bengali & English Language.

Organization of the report

Chapter- I This chapter deals with the introduction of the study which includes background of the study denoting the magnitude of the problem about Bronchial Asthma, need for the study, which lay down the justification for conducting the study. It also includes problem statement, objectives, operational definition, assumption, conceptual framework, and delimitation of the study.

Chapter-II- would present a review of related literature with research studies and non-research articles related to the present study.

Chapter- III- would explain the methodology of the study, including a research approach, research design, and variables under study, the setting, sample and sampling technique, development and description of tools and a plan for data analysis.

Chapter-IV- would present the details of data analysis and interpretation.

Chapter- V- would present brief summary, major findings, conclusion, implications, limitations, and recommendations based on the findings of the study. The end of the chapters would also give a selected list of the references and appendices.

II. Review of Literature

This chapter deals with the review of literature related to the subject under study and its objectives. Review of literature in this chapter includes books, journals, published and unpublished thesis from both printed and electronic sources. The review provides the framework of research process that can facilitate the accumulation of knowledge.

According to Polit and Hungler (1999), review of literature involves systematic identification, location, scrutinisation and summarization of written material that contains information on a research problem¹⁹. Thus extensive reviews of literature were done on research and non-research materials and are being organized as under Literature review related to:

1. Studies related to asthma.
2. Studies related to quality of life among school going children suffering from bronchial asthma.
3. Studies related to associated factors affecting quality of Life of asthmatic child.
4. Literature related to conceptual framework.

Studies related to asthma

Gauderman WJ, Avol E, Lurmann F, Kuenzli N, Gilliland F, Peters J et al conducted a study on childhood asthma and exposure to traffic and nitrogen dioxide in USA. The study examined the association between traffic related pollution and childhood asthma in 208 children. Study subjects were randomly selected. Life time history of doctor diagnosed asthma was associated with outdoor nitrogen dioxide, the ratio was 183 per increase of 1 in IQR is exposure, also observed increased asthma associated with closer residential distance to free-way is 189 per IQR and outdoor pollution from free-way is 2.22 per IQR. The results indicate that respiratory health in children is adversely affected by local exposure to outdoor nitrogen dioxide, or other free-way related pollutants²².

Mistry R, Wickramasingha N, Ogston S, Singh M, Devasiri V, Mukhopadhyay S conducted a study on wheeze and urban variation in South Asia. The purpose of this study was to compare wheeze prevalence in 13-14-year-olds between two South Asian cities (Galle, Chandigarh). Urban South Asia is characterized by narrow streets, heavy traffic, visible haze, unplanned city architecture and the use of kerosene or wood burning stoves at home. Out of 1814 distributed questionnaire 95 % were completed correctly and returned. The prevalence rate for Wheezing in Galle is 28.7 %, higher than Chandigarh 12.5 %. The findings suggested that there is a higher prevalence of wheeze in children who are living in an old fashioned and congested city than in a clear and modern city in South Asia²³.

Brett G. Toelle, Frances L. Garden, Kitty K.W. Ng, Elena G. Belousova, Catarina Almqvist, Chris T. Cowell et al conducted a study on childhood asthma prevention in Australia at 11.5 years. The objective of the study was to test house dust mite avoidance and dietary fatty acid modification, implemented throughout the first 5 years of life, as interventions to prevent asthma and allergic diseases. They have taken new borns with a family history of asthma alternatively and randomized them separately at the age 5 years, they were assessed for asthma and eczema and had skin prick tests for atopy. 616 children are selected randomly and 516 (84 %) were evaluated at the age 5 years and concluded that the house dust mite avoidance intervention resulted in a 61 % reduction in house dust mite allergens concentration (mg/ g dust) in the child's bed but no difference in the prevalence of asthma, wheeze or atopy. The ratio of V-6 to V-3 fatty acids in plasma was lower in the active diet group (5.8 Vs 7.4)²⁴.

R.K. Behl, S. Kashyap, Sarkar Malay conducted a study on Prevalence of Bronchial Asthma in School Children of 6-13 Years of Age in Shimla City showed that asthma is a major public health problem worldwide. This was a questionnaire-based study (International Study of Asthma and Allergies in Childhood [ISAAC] protocol) carried out in four randomly selected schools in the city of Shimla. The age group included in the study was 6-13 years. Various factors influencing the prevalence of asthma, such as socio-economic status, history of asthma and other allergic disorders in the family, type of cooking fuel used, history of active and passive smoking were elucidated from the history. Overall prevalence of asthma in our study was found to be 2.3 per cent. Boys had a higher prevalence (3.1%) than girls (1.4%). We found a significant association between asthma prevalence and family history of asthma and other atopic manifestations. There was no significant association of socio-economic factors and exposure to smoking with prevalence of asthma²⁵.

Carlos Augusto Mello-da-Silva, Ligia Fruchtergarten conducted a study was undertaken on environmental chemical hazards and child health showed that around 85,000 synthetic chemicals are produced today and 2,800 of them are mass produced. Children have a greater exposure to environmental pollutant than adults, because their metabolic needs and behaviors put them at special risk. The findings suggested that screening of risk situation using tools such as environmental history has been stimulated alongside the greatest commitment of pediatrics towards measures that can reduce the exposure of children to environmental chemicals²⁶.

Studies related to quality of life among school going children suffering from bronchial asthma.

Wander Arvinder, Bhargava Siddharth, Puneet A Pooni, Kakkar Shruti, Arora Kamaldeep conducted an observational study on Quality of Life with bronchial asthma. This study was conducted to assess the quality of life (QOL) in children with bronchial asthma and to study the impact of various clinical and socio-demographic factors on their QOL. Of the 90 children enrolled, 20 were newly diagnosed and 70 were follow up cases with male female ratio of 2.1: 1. Children reported more impairment in PAQLQ(S) scores if the onset of symptoms was before one year of age, in those with frequent exacerbations, poor treatment compliance, poorly controlled symptoms and children with history of school absenteeism. The mean PAQLQ(S) score was lowest in emotional function among newly diagnosed and follow up cases.

Statistically significant difference was observed between PAQLQ(S) scores of controlled partly controlled and uncontrolled cases of asthma¹².

Hewaida M Elshazly, Ibrahim E Mahalawy, Hala M Gabr, Sameh A Abd El Naby, Eman E Elzoghby conducted a study on Quality of Life among asthmatic children attending out-patient department in Menoufia University Hospital. The study was carried out on 100 children with bronchial asthma, aged between 7 and 15 years, attending the Outpatient Clinic of the Pediatric Department of Menoufia University Hospital, and their primary caregivers. These children were compared with 100 control children whose diagnosis was free of bronchial asthma or any chronic diseases, as well as their primary caregivers. The scores of all parents and children in the study group were lower than the scores of controls. Parents' activity score and child's activity score were the most affected domains. There was significant relationship between the parents' score and child's score. The caregiver's and child's health-related Quality of Life was significantly associated with each other. Age, sex, and socioeconomic status revealed no significant difference¹³.

Mosunmola Florence, Tunde-Ayinmode conducted a study on children with bronchial asthma assessed for psychosocial problems in a teaching in Nigeria. Seventy five (75) children aged 7 to 14 years with bronchial asthma who were attending clinics at the University of Ilorin Teaching Hospital, Ilorin, Nigeria, were assessed with child behavior questionnaire and a semi-structured questionnaire. Probable psychological morbidity was present in 25% of the children. The most frequently reported social impairments associated with the disease were: interference with play (60%), domestic work (49%), fear of dying anytime (29%) and feeling of being a burden on the family (25%). Psychological morbidity was significantly associated with lower maternal education ($p=0.020$) and occupation ($p=0.038$), polygamy ($p=0.012$), fathers having more than 5 children ($p=0.027$) and mothers having inadequate spousal support ($p=0.012$)¹⁴ Sathyajith Nair, Sajitha Nair, K. R. Sundaram conducted a prospective study to assess the quality of life in children with asthma using the pediatric asthma quality of life questionnaire, The objective of the following study is to assess the quality-of-life (QOL) in children with asthma. Of the 75 children with asthma in the age group from 7 to 17 years of age, 69 were included in the study. The QOL was assessed using the mini PAQLQ and PACQLQ. An asthma clinical severity score was also used to assess the clinical condition simultaneously. On treatment, there was a significant change in the activity and symptom category of the mini PAQLQ ($P < 0.001$), but there was no significant change in the emotional domain of the mini PAQLQ even after medical intervention ($P = 0.563$)¹⁵.

Chroma.J, Slany J conducted a cross sectional prevalence study on quality of life of children. The aim of this study was to determine how children with bronchial asthma disease assess their quality of life and to find domains of physical and psychosocial health in relation to age and gender. The quality of life compared with the healthy children and parents of asthmatic children and healthy parents The mean quality of life of asthmatic children is 74.41, a statistically significant difference between the physical (78,81) and psychosocial (72,06) dimensions of health. The analysis shows that girls evaluate their quality of life worse than boys. The worst quality of life was found among children in the age group 5-7 years⁷.

Lisette van den Bemt, Sabine Kooijman, Vinca Linssen, Peter Lucassen, Jean Muris, Gordon Slabbers et al conducted a study on how does asthma influence the daily life of children? The study is related to quality of life (HRQL) brings together various aspects of an individual's subjective experience that relate both directly and indirectly to health, disease, disability, and impairment. The aim of this study was to establish the components of asthma-specific HRQL, as experienced by primary school-aged asthmatic children. Primary school-aged asthmatic children were invited to participate in three consecutive focus group sessions. The most important components of HRQL were the effects on, and consequences of asthma on peer relationships (e.g., being bullied), the dependence on medication, shortness of breath, cough, limitations in activities and limitations due to the response on cigarette smoke exposure. The outcome of the focus group meetings indicates that asthma influences the life of children in various ways²⁷.

A Trzcieniecka-Green conducted a study on Quality of Life and activity of children suffering from bronchial asthma. The research was conducted on 137 children. The following questionnaires were used in the study Pediatric Asthma Quality of Life Questionnaire (PAQLQ) and found that illness duration ($r = -0.2$; $P = 0.22$) and gender ($P = 0.37$) do not influence the quality of life. It appears that among children ill with asthma a higher level of quality of life is typical for the children who live in the country side in comparison with those from

cities ($P < 0.05$). The comparison was also made in terms of everyday activity of children ill with asthma and non-asthmatic children. The children ill with asthma displayed less social contacts with peers/friends ($P < 0.05$) and they performed less physical activities ($P < 0.05$). The study points concluded that the possible beneficial effects of activating children's social interactions, creating conditions for appropriate development of their social competences, and of stress reduction connected with social interactions. Asthmatic children should also be encouraged to intensify appropriate physical activity¹⁷.

Elizabeth F. Juniper conducted a study on how important is quality of life in pediatric asthma. Conventional clinical measures provide valuable information about the status of the affected organ system but they rarely capture the functional impairments (physical, emotional, and social) that are important to the patients in their everyday lives. To obtain a complete picture of a child's health status, both the conventional clinical indices and the child's HRQL have to be measured and concluded that children with asthma are distressed by the symptoms (shortness of breath, wheezing, and cough), and they are limited in their day-to-day activities (sports, school, work, and playing with pets). In addition, children are often upset and frightened by asthma attacks, and express anger (younger children) and frustration (older children) because they have asthma. They also frequently feel different from their friends and get Mohamed S. Al Gewely, Mostafa El-Hosseiny, Nahla F. Abou Elezz, Dalia H. ElGhoneimy, Azza M. Hassan. conducted cross-sectional study on 140 children with physician- diagnosed bronchial asthma were clinically evaluated to determine level of asthma control and were administered pediatric asthma quality of life questionnaire (PAQLQ). They were 77 males and 63 females whose ages ranged between 7 and 17 years with a mean of 10.2 years. The overall PAQLQ score ranged between 2.22 and with a mean \pm SD of 4.08 ± 1 . Uncontrolled asthma was associated with the lowest QOL scores ($p \leq 0.01$) and concluded that childhood asthma significantly adversely affects the QoL of the affected children. Control of the main determinants of QoL scores might improve the QOL of these patients²⁸

A five-week single cohort study conducted by Poachanukoon O, Visitsunthorn N, Leurmarnkul W, Vichyanond P on Pediatric Asthma Quality of Life Questionnaire (PAQLQ): validation among asthmatic children in Thailand. The Pediatric Asthma Quality of Life Questionnaire (PAQLQ) is one of the most widely used instruments for measuring health-related QOL in children with asthma. The standardized version of PAQLQ contains 23 questions in three domains, i.e., activity limitation, symptoms and emotional function. Patients recorded symptoms, and peak expiratory flow rate (PEFR) each morning and evening during the first and fifth week of the study in asthma diary. At each clinic visit, a trained-interviewer administered the PAQLQ and performed spirometric measurements. Fifty-one children, ages between 7 and 17 yr participated in the study. Scores from the asthma diary were used to classify patients into stable vs. unstable groups. The study result showed that there was high internal consistency for scores of the three domains (Cronbach's alpha-coefficient = 0.83-0.95). For those with stable asthma, the reliability of PAQLQ was good for the rating scale (intra-class correlation coefficient--ICC = 0.84) and for total score (alpha = 0.97) indicating high reproducibility of the PAQLQ and there was a significant difference of changes QOL scores between stable and unstable groups was observed in all domains²⁹.

Ricci Giampaolo, Elena Baldi, Ariana Dondi, Massimi Masi conducted a prospective study on use of the Italian version of the Pediatric Asthma Quality of Life Questionnaire in the daily practice and found that asthma is a serious global health problem and its prevalence is increasing, especially among children and it can severely affect the health-related quality of life (HRQL) of patients. 52 Italian children and adolescents (40 males and 12 females), aged 6 to 17 years, affected by allergic asthma, were enrolled. Each patient was evaluated twice, and at each visit asthma control and severity were assessed, spirometry was performed and the patients completed the

self-administered version of the PAQLQ. The questionnaire was well-accepted and understood by the children. Children showed an overall good quality of life, with mild impairment in the activity and emotional function domains. The PAQLQ showed an overall good correlation with the clinical and functional indexes that are normally evaluated in follow-up visits of asthmatic patients. The PAQLQ appeared to be strongly related to asthma control, both at the first ($p < 0.01$) and second ($p < 0.001$) time of the study³⁰.

Ghada M El-Mashad, Asmaa A Mahmoud, Ahmed A Abdel Hafez conducted an observational study on the prevalence of bronchial asthma among primary school children in Menoufiya Governorate (El-Bagour Center) and revealed that out of 2544 children from a representative sample of children attending eight primary schools in El-Menoufiya Governorate (El-Bagour Center): four schools were located inside El-Bagour Center, representing the urban locality, and the other four schools were located in villages around El-Bagour Center, representing the rural locality. The prevalence of asthma in rural and urban schools was 5.34 and 6.58%, respectively, with a total prevalence of 6.09%. A low socioeconomic level, a positive family history of similar disease, and exposure to smoke showed a highly significant effect as risk factors for asthma. Bronchial asthma had a highly significant effect on delayed weight gain, disturbed sleep, missed school days, limited activity, and emergency room visits and had a significant effect on delayed growth. The overall point prevalence of childhood bronchial asthma among primary school children in Menoufiya governorate was 6.5%, which reflects

a significant increase over the last 20 years when compared with a previous prevalence rate of 2.2% in a similar study conducted more than 20 years ago³¹.

Studies related to associated factors affecting quality of life of asthma child.

Wander Arvinder, Bhargava Siddharth, Puneet A Pooni, Kakkar Shruti, Arora Kamaldeep conducted an observational study on Quality of Life with bronchial asthma. This study was conducted to assess the quality of life (QOL) in children with bronchial asthma and to study the impact of various clinical and socio-demographic factors on their QOL. Of the 90 children enrolled, 20 were newly diagnosed and 70 were follow up cases with male female ratio of 2.1: 1. Children reported more impairment in PAQLQ(S) scores if the onset of symptoms was before one year of age, in those with frequent exacerbations, poor treatment compliance, poorly controlled symptoms and children with history of school absenteeism. The mean PAQLQ(S) score was lowest in emotional function among newly diagnosed and follow up cases.

Statistically significant difference was observed between PAQLQ(S) scores of controlled partly controlled and uncontrolled cases of asthma¹².

Samantha A. Miadich, Robin S. Everhart, Adrienne P. Borschuk, Marcia A. Winter, Barbara H. Fiese, conducted a study on factors associated with quality of life (QOL) in children with asthma (e.g., family functioning, asthma routines, asthma severity) differed by child age. Child age moderated the association between asthma severity and child QOL and between routine burden and QOL in children with asthma. Post hoc probing analyses revealed that among older children QOL levels were lower in the presence of worse asthma severity and more routine burden and suggest that associations between asthma severity, routine burden, and QOL may differ by child age³².

Indinnimeo L, Chiarotti F, De Vittori V, Baldini L, De Castro G, Zicari AM conducted a study on risk factors affecting Quality of Life in a group of Italian children with asthma. One hundred and twenty-seven children with asthma, 6 to 14 years of age, living in the city of Rome, were enrolled as outpatients. They were subjected to Skin Prick Tests (SPT), underwent spirometry and filled out the Pediatric

Asthma Quality of Life Questionnaire (PAQLQ). One hundred and eleven children were diagnosed with intermittent asthma, 12 (10%) with mild asthma, and four with moderate persistent asthma. Ninety-six children had a positive SPT. The mean total score of QOL, obtained from the questionnaire, was 5.4 (± 1.2 SD)³³.

García-Marcos L, Carvajal Urueña I, Escribano Montaner A, Fernández Benítez M, García de la Rubia S, Tauler Toro E et al conducted a study on the effect of seasons on the health-related quality of life (HRQL) of asthmatic children and for that four groups of asthmatic children 7 to 14 years old have taken and shown that the mean (SD) overall PAQLQ score was highest in summer at 6.2 (1.0) and lowest in autumn at 5.5 (1.2). The same trend was found for domains in summer and autumn, respectively: symptoms, 6.2 (1.0) vs 5.4 (1.4); emotions, 6.5 (0.8) vs 6.0 (1.0); and activities, 5.9 (1.4) vs 5.0 (1.5). Factors such as male gender (odds ratio [OR], 0.60; 95% confidence interval [CI], 0.41–0.87), being on immunotherapy (OR, 0.59; 95% CI, 0.38–0.92), living in an urban environment (OR, 0.56; 0.33–0.93), and residing on the northern coast of Spain along the Bay of Biscay (OR, 0.56; 0.36–0.89) were independent protective factors against having a total PAQLQ score in the lower tertile. Conversely, being recruited in a primary care setting (OR, 1.55; 1.01–2.38) and having more severe asthma were risks for being in the lower tertile, hence it concluded that irrespective of the severity of the disease, season has a significant influence on the HRQL of asthmatic children³⁴.

Melissa A. Valerio, Patricia M. Andreski, MA, Robert F. Schoeni, PhD, and Katherine A. McGonagle, conducted a study on the association between childhood asthma and parent and grandparent asthma status: Implications for Practice and showed that there is an association between childhood asthma and intergenerational asthma status among a national cohort of children was examined. The genealogical sample (2,552 children) participating in the Child Development Supplement of the Panel Study of Income Dynamics. Multivariate regression was used to determine intergenerational asthma. Children with a parent with asthma were almost twice as likely (OR=1.96) to have asthma compared to those without a parent with asthma. Children with a parent and grandparent with asthma were over four times more likely to have asthma compared to those without a parent and grandparent with asthma (OR=4.27). Children with a grandparent with asthma were more likely to have asthma (OR=1.52). A family history of asthma was a significant predictor of physician diagnosed asthma in children regardless of race/ethnicity and socioeconomic status. Findings support the collection of family history, including grandparent asthma status³⁵.

Literature related to conceptual framework.

B Pantha Aryal conducted a study on psychological effects on the family having children with asthma to find out the problems of families having asthmatic children and to maintain the positive self-esteem. The Roy Adaptation Model is used as a theoretical framework for this study. This model describes self-concept as the feelings of oneself from other's reaction or from their own internal feelings. The Roy said self-esteem is one of

the components of self-concept. Also, she describes nursing as a health care profession which encourages promoting the health of the people in a society as a whole³⁶.

III. Research Methodology

This chapter deals with the description of methodology adopted for the present study. This includes research approach, research design, setting, population, sampling & sampling technique along with the data collection tools & procedure, development & description of tools, pilot study and plan for data analysis for present study.

The research methodology includes the strategies used to collect information & analyze those to accomplish the research objectives and to formulate the research hypothesis.

Research methodology is a way of systematically solving the research problem. The purpose of this section is to communicate with the readers as to what the investigator did to solve research problems or to answer research questions.

Research Approach

A non-experimental survey approach was selected for the present study, as it aimed at assessing the quality of life among school going children with bronchial asthma in selected hospitals, Kolkata.

Setting of the present study

Setting is the place, where the data collection takes place. So, the selection of the appropriate setting is important because the setting can influence the way people behave or feel how they response.

The present study was conducted at IPGMER & S.S.K.M Hospital, 20, Acharya Jagadish Chandra Bose Road, Kolkata, and Dr B.C. Roy Post Graduate Institute of Pediatric Sciences, Kolkata from 16/10/2017 to 11/11/2017.

The rationale for selecting these specific institutions for the study was:

- Availability of the sample.
- Familiarity with the settings.
- Feasibility of conducting the study.
- Easy accessibility of the area.
- Easy getting of administrative approval.
- Availability of the cooperation for the study from the various personnel.

Population

A population is any group of individuals that has some characteristics is common in which the researcher is interested. The study population will comprise of all the children with bronchial asthma in the age group of 7-12 years attending asthma clinic out patient department in selected hospital, Kolkata.

Sample and Sampling Technique

A sample is a small portion of the population. In this study, sample was the available children 7-12 years with bronchial asthma of selected hospital, Kolkata. In the present study the school-going children were chosen as the sample by Convenient Sampling Technique.

Sample size

The sample size for the present study was 100 school going children within 7-12 years age group.

Sampling Criteria

The following Inclusion Criteria were set for the selection of sample:

- Children who are willing to participate in the study.
- Children who are attending to asthma clinic of the selected hospitals, Kolkata.
- School going children within 7-12 years of age
- School going children diagnosed with bronchial asthma since 6 months or more.
- Children who can understand Bengali/English.

Exclusion criteria

The study excludes

1. Children who are suffering with other chronic diseases.
2. Children whose parents not allow their child to participate in the study.

Data collection tools and techniques

Data collection is a very important and crucial aspect of the investigation, as the collection of appropriate and relevant information helps to provide the answer of the research problem. The researcher constructed the following data collection tools based on objectives of the study, to collect relevant necessary information, in order to attain the answer to the research questions put forward in the study. It is presented in the table below:

Table 1 Data collection tools and technique and variables of the present study

Sl. No.	Data collection tool	Variables to be measured	Data collection technique
I.	Semi-structured interview Schedule on Tool-1 Part –A (Socio -Demographic profile)	Socio demographic data	Interviewing
	Part-B(Record analysis)	Record analysis proforma	Observation
II.	Tool-2 Modified Paediatric Asthma Quality of Life Questionnaire	Quality of life	Interviewing

Development and Description of the tool

Tool -I

Two different tools were prepared; first one was an semi -structured interview schedule in two parts, the first half (Section- A) on Demographic Characteristics or Background information and the second half developed to collect record analysis data of the respondents from their parents and medical record papers depending upon history of hospitalization in the last year, treatment modalities, family history of bronchial asthma and with duration of illness from bronchial asthma.

Tool-II

It consisted total 23 items. The items were developed from 3 domains, activity limitation, symptoms, and emotional functions. Total 5 items (1-5) were from the activity limitation, 10 were items (6-15) from the symptoms, 8 items (16-23) were from emotional function. All these items had 3 options. The options are extremely, moderately, not at all and all of the time, some of the time, none of the time. The items are scored as extremely-1, moderately-2, not at all-3 and all of the time-1, some of the time-2, none of the time-3. The minimum and maximum scores that can be obtained are 23 & 69 respectively.

The scores are categorized in three groups:

- 1-23= Severe impairment (indicates poor quality of life which considers extremely & all of the time impaired).
- 24-46= Moderate impairment (indicates moderate quality of life which considers moderately & some of the time impaired).
- 47-69= No impairment (indicates good quality of life which considers not at all & none of the time).

Development and Description of the tool-1: Development of the semi-structured interview schedule on Socio-Demographic Profile

A semi-structured interview schedule for the children was selected as the tool for the study. After vigorous review relevant area in the research and non- research literatures and formal, informal discussions with experts and peer group, investigator had planned to develop a semi-structured interview schedule to collect background information and to assess the quality of life of children suffering from bronchial asthma. A total of 10 questions were prepared. The major steps adopted for selection and preparation of the tool were as follows:

- Step 1: Planning for the semi-structured interview schedule.
- Step 2: Development of the first draft.
- Step 3: Establishment of the content validity.
- Step 4: Development of the second draft.
- Step 5: Translation of the tool in local language.
- Step 6: Try-out or Pre-testing.
- Step 7: Establishment of reliability.
- Step 8 : Development of the final draft of the tool.

Step 1: Planning for the semi structured interview schedule:

In planning of the semi structured interview schedule, all the objectives were taken into concern. The researcher had gone through an extensive review of literature which comprised of both research and non-research articles. Expert consultation was also sought in the field of study. Field work in the area of concern and peer group discussion also helped the investigator to outline the objectives and plan semi structured interview schedule on demographic profile and quality of life of school going children. All the planned items are categorized to measure the variables under study that is the items to assess demographic profile and quality of life of school going children, through review of different literature and frameworks for the number of items.

Step 2: Development of the first draft of semi structured interview schedule:

Based on the review of literature and consultation with the guide, the first draft of the semi structured interview schedule on Demographic Profile and Quality of life of school going children (7-12) years was developed, with items framed, such that it measures the demographic profile and quality of life of school going children suffering from bronchial asthma. The total number of items was 10.

Part-A contained the background information on Demographic Profile of the school going children. It consisted of 6 items.

Part-B on record analysis proforma consisted of 4 items.

Selection and Development of tool II:

A research instrument is a tool that is used to collect information in a study. It helps to keep track of what is observed and how to report it. It must be both valid and reliable. This standardized tool was modified for feasibility as the 7 point scale does not match with the criteria of the selected hospital of Kolkata, West Bengal. The following tool was developed the study to obtain necessary information regarding pediatric asthma. It consisted total 23 items. The items were developed from 3 domains, activity limitation, symptoms, and emotional functions. Total 5 items (1-5) were from the activity limitation, 10 were items (6-15) from the symptoms, 8 items (16-23) were from emotional function.

Step 3: Establishment of content validity:

Content validity was obtained by submitting the tool to eleven experts for their opinion and suggestions. The content with demographic profile and interview schedule on quality of life questionnaire of children suffering from bronchial asthma along with objectives and criteria checklist was submitted to the expert from field of child health nursing, pediatric medicine, psychiatrist. Among eleven experts, seven were master degree in child health nursing, three were pediatrician of asthma clinics and one was clinical psychiatrist. The experts were requested to give their opinions for further modifications.

Table No: 2 Establishment of Validity

SL No.	Tool	Content Validity	Result
	1.Tool-1 Part-A	28.5% partial agree with item no.6	Modified
	(Background Information)	100-87.5% agree in rest of the items	-----

Step 4: Development of the second draft:

After obtaining validity of the tool as per suggestions of experts 1 item has modified, question framing modified.

In Part- B, question framing has modified and 1 item added both in tool-1.

Tool-2, has been developed after taking necessary help from Pediatric Quality of Life Questionnaire (PAQLQ) instruments, World Health Organization Quality of Life

(WHOQOL) instruments, Pediatric Quality of Life TM version 4 (PEDSQL TM . 4.0) related quality of life for children and adolescent.

23 items on three domain activity limitations, symptoms & emotion.

2nd draft has prepared after necessary correction, deletion, addition, & changes in questions wording & sequence.

Step 5: Translating of the tool in local language

The tool was prepared in English, then converted into local language that is Bengali. Language validation was established by an expert in Bengali Language & then retranslation of the Bengali tool into English by another English language expert. The Bengali version of the tool has been provided in the appendix. The language validation certificate of Bengali and English has been provided in Appendix.

Step 6: Try out or Pre-testing:

Try-out of the tool was conducted at R.G.Kar Medical College & Hospital. The 2nd draft of tool has administered to 10 samples on 05/09/2017 in asthma clinics, after taking necessary permission from the concerned authority.

Try out was conducted to check the clarity of the items, ambiguity of language of the tool. After obtaining formal permission from the concerned authority try out was conducted on ten participants. Each participant took time 20 minutes to respond and was understandable to them.

Step 7: Establishment of Reliability:

Reliability has conducted at R.G.Kar Medical College & Hospital. The 2nd draft of tool has administered to 10 samples on 05/09/2017 in asthma clinics. Average time taken to answer the question is 20 minutes. Reliability was done by inter-rater method and computing cronbachs alpha method.

Table 3: Establishment of Reliability				
SL No.	Tool	Method	Result	Reliability Calculation
1.	Tool-1			
	Part-A	Inter-rater	Percentage of agreement	
	(Background Information)			
2.	Part- B	Inter-rater	Percentage of agreement	100%
	(Record analysis)			
3.	Tool-2			
	Modified Paediatric Quality of Life Questionnaire	Cronbach’s alpha	Reliability coefficient (r)	<0.746588

Step 8: Development of the final draft of the tool

After establishment of validity and reliability, the investigator prepared the final draft of the tool. The semi structured interview consisted of questions (Q1-Q6) related to demographic characteristics in tool-1, part A and in part-B (Q1-Q4) related to record analysis.

In tool-2, quality of life has been developed after taking necessary help from Pediatric Quality of Life Questionnaire (PAQLQ) instruments, World Health Organization Quality of Life (WHOQOL) instruments, Pediatric Quality of Life™ version 4 (PEDSQL™ . 4.0) related quality of life for children and adolescent. 23 items on three domain activity limitations, symptoms & emotion.

Ethical consideration

- Permission will be taken from institutional ethical committee.
- Informed consent will be taken from all the participants.
- Privacy will be maintained during interview.
- Confidentiality & anonymity of the data will be maintained.

Pilot Study

The investigator conducted the pilot study at R.G.Kar Medical College & Hospital, Kolkata from 19/09/ 2017 after getting formal permission from the administrative authority. The sample for the pilot study was 20.

Informed consent from each respondent for their willingness to take part in the study after discussion of the purpose of the study.

Result of the pilot study:

- The study was found to be feasible.
- Time taken per participant was between 15-20 minutes.
- The investigator administrative the tool effectively.
- No problem was faced by the investigator during the data collection period.

Data Collection Procedure

Final study was conducted from 16/10/2017 to 11/11/2017 at asthma clinics of IPGMER & SSKM Hospital and Dr B.C.Roy Post Graduate Institute of Pediatric Sciences. The data collected from 100 attending asthma clinic and having children between age of 7-12 years.

- Schedule of the data collection was according to the timing of asthma clinic that was from 11:00A.M-3:00 P.M. on Saturday at IPGMER & SSKM Hospital and from 10:00 A.M- 3:00 P.M. on Tuesday and Thursday at Dr B.C .Roy Post Graduate Institute Of Pediatric Sciences.
- Data collected from six to eight respondents at each clinic day. Comfortable sitting management with adequate light was present while collecting data.
- Samples were selected by convenient sampling technique, the parent with whom the researcher met first, was invited only to collect the background information about the child.
- The investigator introduced herself with each participant and explained the purpose of the study. Established rapport with the mothers and the child.
- Informed Consent was taken from each participant and confidentiality ensured.
- The data were collected by structured and semi-structured interview schedule.
- Time taken for each respondent was 25-30 minutes.
- Collected data were tabulated, analyzed and statistically calculated.

Plan for data analysis

Data will be analyzed by using both descriptive and inferential statistics based on the objectives of the study.

Descriptive Statistics

Descriptive Statistics will be used to describe the participants sample characteristics in frequency and percentage.

Descriptive Statistics will be used to describe different areas of Quality of Life among school going children suffering from bronchial asthma.

Descriptive Statistics will be used to identify reasons for seeking admission to hospital.

Inferential Statistics

Correlation will be done to find out significant relationship among inter-domain of quality of life.

Chi square to determine the significant association between selected variables and quality of life of children suffering from bronchial asthma.

IV. Analysis and interpretation of data

This chapter deals with the analysis and interpretation of the collected data to study the quality of life among school going children suffering from bronchial asthma in the asthma clinics of IPGMER & S.S.K.M Hospital & Dr B.C. Roy Post Graduate Institute of Pediatric Sciences, Kolkata.

The purpose of analysis is to make the collected data into an intangible form so that the objectives are justified statistically and hypothesis of the research problem are tested. Statistically procedures enable the researcher to reduce, summarize, organize, evaluate, interpret and communicate numerical information. Analysis and interpretation of the data are based on objectives of the study; the obtained data were analyzed by using descriptive and inferential statistics. In the present study, analysis and interpretation of the data are based on data collected through an semi structured interview schedule from 100 participants. Analysis and interpretation are done in relation to objectives of the study. This will help the researcher to develop and test the hypothesis.

Problem Statement

A study to assess the quality of life among school going children with bronchial asthma in selected hospitals, Kolkata.

Purpose

The purpose of the present study is to investigate quality of life among school going children with bronchial asthma & it will help to recognize required care to optimize quality of life.

Objectives

1. To assess the quality of life among school going children with bronchial asthma as measured by Modified Pediatric Asthma Quality of Life Questionnaire (PAQLQ).
2. To find out relationship among domains of quality of life of school going children with bronchial asthma.
3. To find association between quality of life of school going children with bronchial asthma & selected socio

demographic variables.

Hypothesis

- H1 – There is relationship among domains of quality of life of school going children with bronchial asthma at 0.05 level of significance.
- H2 – There is association between quality of life among school going children with bronchial asthma & selected socio demographic variables.

Organization and presentation of the data

Table no. 4 The data has been organized, analyzed, interpreted and presented in accordance with objectives under the following sections:

Objective	Section	Description	Statistical analysis
To identify the demographic Characteristics of the sample	I	Findings related to background Information of the participants	Descriptive Statistics (Frequency & percentage)
To assess the quality of life Among school going children with bronchial asthma as measured by Modified Pediatric Asthma Quality of life questionnaire.	II	Findings related to the assessment of quality of life among children suffering from bronchial asthma as measured by Modified Pediatric	Descriptive Statistics (Frequency & percentage)
To find out relationship Among domains of quality Of life of school going Children with bronchial Asthma.	III	Findings related to relationship among domains of quality of life of school going children with with bronchial asthma.	Descriptive Statistics (Frequency & percentage & correlation coefficient).
To find out association between quality of life of school going children with bronchial asthma & with bronchial asthma & selected socio-demographic variables.	IV	Findings related to association between quality of life among school going children with bronchial asthma & selected socio-demographic variables.	Inferential Statistics (chi-square test)

Section I

This section includes the personal characteristics of the children of the suffering from bronchial asthma in terms of age, gender, religion, residential place, education of the child, type of family & number of siblings.

Table 5 Frequency and percentage distribution of the children according to their age, gender and education of the child.

n=100

SL. No	Sample Characteristics	Frequency	Percentage (%)
1	Age of the child (in years)		
	7 - 9	63	63
	10 - 12	37	37
2.	Gender Of the child		
	Female	36	36
	Male	64	64
3.	Education of the child		
	Class II- IV	74	74
	Class V-VII	26	26

The data presented in the table 5 showed that majority of children are in the age group of 7-9 years are 63 % and 37% are in the age group of 10-12 years.

The table also shows that 36% of the girl child and 64% of boy child belongs of the total sample group of 100.

The data also revealed that the highest grade of education was 74% of child studying in class II-IV, and rest was 26% of the child studying in between class V-VII.

Table 6 Frequency and percentage distribution of the children suffering from bronchial asthma in terms of residential place, type of family, number of siblings.

n=100

SL. No	Sample Characteristics	Frequency	Percentage (%)
5.	Residential Place		
	Urban	69	69
	Semi-urban	17	17
	Rural	14	14
6.	Type of family		
	Nuclear	31	31
	Joint	69	69
7.	Number of siblings		
	None	44	44
	One	36	36
	Two & more	20	20

Data presented in the table 6 showed that majority of the children resides in the urban area 69 %, 17% in rural area and the rest 14% from. Semi-urban area.

The table also showed that majority of the sample 69% children belongs to joint family. and 31% children belongs to nuclear family.

Data presented in the table 2 depicted that 44% of the children are single, 36% children are having two siblings and 20% of the children are having three/more siblings.

V. Discussion

This chapter presents a brief summary of the research study, and its significant findings. The major findings, discussion, conclusion, implications for nursing administration, child health nursing, community health nursing, nursing research are also given in addition to limitations and recommendations for the research study.

Major findings of the study

Major findings of the present study were discussed with reference to the results obtained by the investigator.

Finding related to background information of the participants.

- 63% of the children were in the age group of 7-9 years, and 37% of them belonged to the age group 10-12 years.
- Majority of the study participants that is 64% were boy.
- Majority of the study participants that is 74% are studying in between class II-IV.
- 69% of the child belonged to urban area.
- Majority of the study participants that is 69% belonged to joint family.
- Maximum number (44%) of the child was single.
- 77% of children suffering from bronchial asthma for more than 12 months.
- Majority of the children (73%) were not hospitalized in last one year.
- About 81% of the children were having family history of bronchial asthma.
- Maximum numbers (84%) of the children were on inhaler.

Findings related to assessment of quality of life among children suffering from bronchial asthma as measured by Modified Paediatric Quality of Life Questionnaire.

In this study the findings revealed that percentage of moderately impaired quality of life is maximum in symptom (73%) and in emotional function domain (74%).

Findings related to relationship among domains of quality of life of school going children with selected socio-demographic variables.

- The mean and standard deviation of activity limitation of quality of life of school going children with bronchial asthma are 8.89 and 2.03 whereas mean and standard deviation of symptoms are 14.98 and 3.13. There are positive relationship between activity limitation and symptoms and it is found statistically significant as evident from obtained „t“ value (4.21) which is higher than the table value (1.982) at df 98 at 0.05 level of significance.
- The mean and standard deviation of activity limitation of quality of life of school going children with bronchial asthma are 8.89 and 2.03 whereas mean and standard deviation of emotional function are 17.34 and 2.67. There are positive relationship between activity limitation and symptoms and it is found statistically significant as evident from obtained „t“ value (2.47) which is higher than the table value (1.982) at df 98 at 0.05 level of significance.
- The mean and standard deviation of symptom of quality of life of school going children with bronchial asthma are 14.98 and 3.13 whereas mean and standard deviation of emotional function are 17.34 and 2.67. There are positive relationship between symptom and emotional function and it is found statistically significant as evident from obtained „t“ value (4.52) which is higher than the table value (1.982) at df 98 at 0.05 level of significance.

Findings related to association between quality of life among school going children with bronchial asthma and selected socio-demographic variables.

- There is association between education, type of family, number of siblings, history of hospitalization, and family history of bronchial asthma which is statistically significant as evident from obtained χ^2 values which are higher from the table value.
- There is no association between age, gender and residential place and quality of life among school going children with bronchial asthma

Discussion in relation to other studies

Findings related to background information of the participants

In the present study 64% of the study participants are boys and 81 % are having family history of bronchial asthma.

A study conducted by R.K. Behl, S. Kashyap and Malay Sarkar conducted a study on prevalence of bronchial asthma in school children of 6-13 Years of Age in Shimla city and found that overall prevalence of asthma in the study was found to be 2.3 percent. The age group included in the study was 6-13 years. Boys had a higher prevalence (3.1%) than girls (1.4%). There was significant association between asthma prevalence and family history of asthma and other atopic manifestations²⁹.

In the present study findings 63% of the children were in the age group of 7-9 years, and 37% of them belonged to the age group 10-12 years and 69% were belonging to urban area.

In an observational study conducted by Ghada M El-Mashad on prevalence of bronchial asthma among eight primary school children in Menoufiya Governorate showed that out of 2544 children from a representative sample of children, the result reveals that prevalence of asthma in rural and urban schools was 5.34 and 6.58%, respectively, with a total prevalence of 6.09%. A low socioeconomic level, a positive family history of similar disease, and exposure to smoke showed a highly significant effect as risk factors for asthma.

The present study findings revealed that in activity limitation domain 59% of the children are having moderately impaired quality of life, and more than half of them are having moderately impaired quality of life in symptom and emotional function domain that is 73% and 74% respectively³¹.

A study conducted by Mosummola Florence et al on children with bronchial asthma assessed for psychosocial problems in a teaching hospital in Nigeria showed that children with asthma in a population sample of seventy five (75) aged 7 to 14 years are attending clinics at the University of Ilorin Teaching Hospital, Ilorin, Nigeria. Probable psychological morbidity was present in 25% of the children. Frequently reported social impairments associated with the disease are interference with play (60%), domestic work (49%), fear of dying anytime (29%) and feeling of being a burden on the family (25%)¹⁴.

Findings related to relationship among domains of quality of life of school going children with selected socio-demographic variables.

In this present study, there are positive relationship between activity limitation and symptoms ($r=0.39$), activity limitation and emotional function ($r=0.24$) and symptom and emotional function ($r=0.41$). It is also found statistically significant as evident from obtained „t“ value (4.21), (2.47) and (4.52) respectively which is higher than the table value (1.98) at $df=98$ at 0.05 level of significance.

Ricci Giampaolo, Elena Baldi, Ariana Dondi, Massimi Masi conducted a prospective study on use of the Italian version of the Pediatric Asthma Quality of Life Questionnaire in the daily practice found that asthma is a serious global health problem. 52 Italian children and adolescents (40 males and 12 females), aged 6 to 17 years, affected by allergic asthma, were enrolled. Children showed an overall good quality of life, with mild impairment in the activity and emotional function domains. The PAQLQ showed an overall good correlation with the clinical and functional indexes that are normally evaluated in follow-up visits of asthmatic patients. The PAQLQ also appeared to be strongly related to asthma control, both at the first ($p < 0.01$) and second ($p < 0.001$) time of the study³⁰.

Findings related to association between quality of life among school going children with bronchial asthma and selected socio-demographic variables.

The present study revealed that there is significant association between family history of bronchial asthma and quality of life of children suffering from bronchial asthma at 0.05 level of significance.

A study was conducted by Melissa A Valerio et al to examine intergenerational asthma beyond maternal asthma. The study found that association between childhood asthma and intergenerational asthma status among a national cohort of children. 2,552 children were participated in the study by using multivariate regression and the result showed that children with a parent with asthma were almost twice as likely ($OR=1.96$) to have asthma compared to those without a parent with asthma. Children with a parent and grandparent with asthma were over four times more likely to have asthma compared to those without a parent and grandparent with asthma ($OR=4.27$). Children with a parent with asthma were almost twice as likely ($OR=1.96$) to have asthma compared to those without a parent with asthma. Children with a parent and grandparent with asthma were over four times more likely to have asthma compared to those without a parent and grandparent with asthma ($OR=4.27$). Children with a grandparent with asthma were more likely to have asthma ($OR=1.52$)³⁵.

VI. Conclusion

Children suffering from childhood bronchial asthma within 7-9 years age group have moderately impaired quality of life in terms of activity limitation, symptoms and emotional function in comparison to healthy children. Among them, majority are being treated with inhalers. Their quality of life are associated with certain socio-demographic factors like type of family, history of hospitalization, family history of bronchial asthma. Hence, childhood bronchial asthma is a treatable and preventable disease.

VII. Implications

With the changing demands of the society and advancement of technology, the role of nurse has also change. To perform the roles, she should be highly knowledgeable and updated with information. The role of education is very much important in this situation, in order to prevent disease/ complications. So, the health personnel should take an active participation in the prevention of the disease like Bronchial Asthma. The study is vital to concern to the community health nursing, nursing practice, nursing education and general education.

Community Health Nursing

The findings of this study have implication in community health nursing in developing awareness programme specially given to the caregivers on how to prevent children from developing bronchial asthma in urban area as the present study reveals that 69% of the child belongs to urban area of them 64% are boys who are the major sufferer from the disease.

Nursing Practice

The present study also implicated in nursing practice as nurses are accountable for quality patient care delivery. To ensure that nurses must aim to address on holistic care of the children suffering from bronchial asthma. The existing health services have emphasis on medical aspects of the care suffering from bronchial asthma as from the present study findings it reveals that 84% of the children are on inhalers and 81% are having family history of bronchial asthma. Moreover, the quality of life of these children is affected by 74% in emotional function domain and 73% in symptom domain. So, nurses have a great role in the physical, psychological, economical, social and aspect.

Nursing Research

Research studies conducted by the Indian Nurses in this area are very few. It is this time that all the nursing personnel join hands to improve scientifically tested materials or programme towards assessment of QOL of the children suffering from Bronchial Asthma. Research studied in this area will provide body of knowledge on which the nurses will be able to build their nursing care. Nursing Research should be directed to further explore and update knowledge and attitude of paediatric or asthma clinic patient.

Limitations

The study findings couldn't be generalized because of the following reasons;

- i. Small sample size.
- ii. Research settings.
- iii. Only diagnosed bronchial asthma children who came for health check up in the outpatient department, participated in the study. Thus, patient who had not visited in the hospital or who were in the indoor of the hospital were excluded.

VIII. Recommendations

- The study can be conducted on a large sample of children at different age group (7-17) to validate and generalize the findings.
- The study can be replicated by taking more institution.
- A comparative study can be done rural and urban or low and high socio-economic group of patients.
- A comparative study can be done between the steroid sensitive bronchial asthma and steroid non-sensitive or other alternative therapy.
- A comparative study can be done between bronchial asthma and any other chronic illness like nephrotic syndrome, convulsion, cystic fibrosis etc.
- A study can be conducted by administering a “planned teaching programme” on maintenance of quality of life.

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