

CHAPTER I

INTRDOUCTION

Background of the study

Early childhood is a sensitive period of children's development which makes the foundation for well-being and learning of children throughout their entire life which consists of physical, cognitive and social domain. Each domain is equally important for the healthy life of children.¹ So protecting and improving the child's health is a very fundamental and important part of the growth and development of a child.² Understanding the factors affecting their well-being is also essential for promoting optimal growth and for preventing potential developmental challenges. The child care begins at birth itself and demands special attention and good care.³ Nurturing care is the need of children to grow optimally which leads to enjoy their good health, adequate nutrition and feel secure. The healthy growth and development of child totally depend on caregivers which is most decisive factors for keeping children healthy throughout their entire life period.⁴

Globally, mortality of under five children was 38 deaths in 1000 live birth as per UNICEF 2021 data. Roughly 13,800 deaths of under five children occurred every day.⁵ The causes of under-five morbidity and mortality are multifaceted and interconnected. All over the world, infectious diseases are the main causes of deaths among children which include pneumonia, malaria and diarrhoea.⁶ In addition to infectious diseases, preterm birth and intrapartum-related complications are also contributing factors for under five mortality.^{7,8}

In India, the triad of malnutrition, ARI and diarrhoea are causes of illness and death in children less than five years of age.⁹ As per NFHS-5 (2019-21), in India the overall mortality rate among under five children was 41.9%.¹⁰

Acute respiratory infection constitutes a significant global health burden, particularly among under five children and is an important cause of sickness and death in this vulnerable age group.¹¹ Globally, Acute respiratory infection is responsible for almost 20% death of under five children.¹² In India about 14.3% deaths of infant and 15.9% deaths of children of one and five years of age are because of ARI.¹³ In India, due to ARI visit to health care facility of children who are less than five years of age is 30-50% and admission to hospital is 20-40%.¹⁴ So, it is a greater challenge to the healthcare system because of the high morbidity and mortality rates of under five children.

It is an infection of the respiratory tract system that interferes with the normal pattern of breathing.¹⁵ The two broad types of this infection include upper and lower respiratory tract infection.¹⁶ The upper respiratory tract system is from nasal cavity to vocal cords while the lower respiratory system is from vocal chords to lungs.¹⁷ Upper respiratory infection is an acute infection which occurs in the upper part of the respiratory tract. If the infection of the upper respiratory tract is not cured at a specific time, it progresses to the lower respiratory tract.¹⁸

ARI can be caused by bacteria, fungi and viruses. The most common causative organism of acute respiratory infection are pneumococci, haemophilus influenzae and staphylococcus aureus.¹⁹ Approximately 90% of URTI and 30% of LRTI are caused by a viral infection.²⁰ It is diagnosed by nasal discharge, sore throat, fever less than three days and cough.²¹ Under five children can have at least five episodes of ARI in

twelve months and even mildest episode can progress to become a severe infection. The recurrent episodes of ARI lead to delay in growth and development of child.²²

Under five children are more vulnerable group and susceptible to infection due to their immature immunity, ongoing lung development and their anatomical structure.²³ Children are at more risk of getting infection as they come in contact with others children very frequently who may be carriers of virus. Mostly kids do not wash their hands regularly. They are also more likely to put their fingers in their mouth and rub their eyes with their hands which can result in spread of infections.²⁴

ARI in under five children is also caused by various factors including environmental condition, immunization status, pathogenic factors, socio-economic status, nutritional status, hygiene, housing condition, breastfeeding and weaning practice.²⁵⁻²⁷ It has been identified that environmental and social factors are important contributing factors of acute respiratory infection.^{28,29} The care provided by the mother depends on her knowledge which directly impacts the improvement of the child's health.^{30,31}

Mothers' child rearing practice influences the health of children. So, it is a necessary to improve awareness of mothers related to prevention as well as home-based management of ARI in children this helps in reducing occurrence of acute respiratory infection.³²

Therefore, it becomes very necessary to find out the incidences related to ARI in children and risk factors which may contribute to occurrence of ARI. This will guide us to plan educational intervention for mothers to reduce incidences of ARI and improve growth and development of under five children.³³

Need for the study

Childhood is a sensitive period for growth and development.³⁴ Recurrent infection of respiratory tract affects physical health of child and indirectly lead to malnutrition due to low immune system.³⁵ So, adequate nutrition and prevention from infection are important aspects for promotion of physical and emotional wellbeing of under five children.³⁶

According to World health statistics, all over the world approximately 5.3 million children died before reaching their fifth birthday. Among them 47% deaths occur during the first month of their life.^{37,38}

According to UNICEF 2021 report, approximately 5 million under five children died including 2.3 million newborn. As per report, Global causes of these deaths were infectious diseases including pneumonia, diarrhoea and malaria.³⁹

According to NFHS 5 (2019-2021) in India, mortality rate was 41.9% among under five children. It has been reported that out of them, 30 deaths per 1000 live births among neonates, 41 deaths per 1000 live births among infants and 42 deaths per 1000 live births among children less than age of five years. It indicates that in India, one in 20 children die before completing five years of age. The highest death rate was 59.8% in Uttar Pradesh (78 deaths in 1,000 live births) and least was in Kerala (7 deaths in 1,000 live births).¹⁰

According to NFHS 5 (2019-2021), rural areas have more mortality rates among children less than age of five years as compared to urban region. It is recorded that the death rate was 45.7% in rural and 31.5% in urban areas.¹⁰

According to NFHS 5 (2019-2021), under five mortality rates were 30.6% in Delhi. It has been reported that 4% under five children presented with symptoms of ARI and experienced approximately 5 episodes of ARI in a year. It has also been identified that 13% death of under-five children in paediatric ward occurred due to ARI.⁴⁰

A research done by Kumar et al. (2015) indicated that occurrence of ARI among children was 59.1%. The prevalence of ARI was higher in urban areas (63.7%) compared to rural areas and highest in infants followed by children 25- 60 months of age. Boys had more episodes of ARI than girls. Mothers' education and overcrowding residential places were identified as significant risk factors. This study suggested that improvement in living conditions in houses may be helpful in reducing ARI cases in our country.¹⁴

A longitudinal study carried by Ramani et al. (2016) reported morbidity pattern and epidemiological factors of ARI in under five children. It was identified that out of 400 children, 109 children were suffering from ARI and the incidence rate was 27.25%. Approximately 19.25% children had upper respiratory infection and 8% had lower respiratory tract infection. Higher rate of incidences was found among infants (38.04%), boy children (36.87%), family history of any respiratory infection (41.89%), overcrowding household (31.22%), use of firewood fuel (41.36%), pets in the family (35.04%) and delayed developmental milestone in children (34.82%). The calculated attack rate was 3.27 episodes per child per year. Here, it has been emphasized that seasonal variations were more evident factors of acute respiratory infection. Thus, community education program must be highly focused on addressing issues and promotion of preventive measures regarding reduction of illness and death rate due to ARI.⁹

ARI can be prevented by following action and domiciliary management. The preventive measures of respiratory infections include appropriate disposal of respiratory secretions, personal and environmental hygiene practices, isolation of infected patients, completion of immunization status, maintaining nutritional status and special care of children during changes in weather to protect them from the cold.⁴¹ It requires planning to identify risk factors and barriers regarding practices on prevention and home-based management of ARI in children at community level rather than only treating the symptoms. The majority of these problems can be resolved by educating mothers about ARI through awareness programs. Health care professionals need to pay more attention to preventive measures such as health education and awareness to mothers and their family members to reduce morbidity of children.^{42,43}

Therefore, in order to lower the prevalence of ARI, it is crucial to implement interventions that are practicable, culturally acceptable and integrated with local health services. Training representatives can provide professional training to community health workers, anganwadi workers so that they can provide appropriate education periodically to mothers and caregivers related to prevention and management of ARI at home.^{29,44}

Prevalence rate of ARI in children below five years of age is still alarming in rural region and slum areas of Delhi despite of government sponsored initiative programs.^{45,46}

So, there is a need for exploration of risk factors, identification of barriers and gaps while providing care to children regarding prevention of ARI. It will provide a platform to develop a need-based interventional package to improve mothers'

knowledge and practices towards reduction of prevalence of ARI by removing barriers and gaps.

To decrease the frequency and number of episodes of ARI, this study has examined the risk factors associated with ARI and barriers related to prevention and home-based management of ARI. Consequently, it has developed a need-based interventional package for mothers having children less than age of five years.

Researcher observed that there are few studies which have explored the barriers which are responsible for ARI in under five children among their mothers and also regarding home-based management of ARI in children. Therefore, researcher was interested in conducting research in this area.

Research Statement

A study on barriers related to prevention and management of acute respiratory infection among mothers of under five children with a view to develop and evaluate a need based interventional package in selected rural community of Delhi.

Objectives

1. To explore barriers related to prevention and management of acute respiratory infection in under five children
2. To identify risk factors of acute respiratory infection in under five children.
3. To determine the effectiveness of need based interventional package on knowledge of mothers regarding prevention and management of acute respiratory infection in under five children
4. To determine the effectiveness of need based interventional package on practice of mothers regarding prevention and management of acute respiratory infection in under five children

5. To determine effectiveness of need based interventional package on frequency of symptoms and number of episodes of acute respiratory infection in under five children

Hypothesis

The hypothesis would be tested at $p < 0.05$ level of significance

H₁- There would be significant increase in mean knowledge score of mothers in experimental group as compared to control group after implementation of need based interventional package.

H₂- There would be significant improvement in mean practice score of mothers in experimental group as compared to control group after implementation of need based interventional package.

H₃- There would be significant decrease in frequency of symptoms and number of episodes of acute respiratory infection among under five children in experimental group as compared to control group after implementation of need based interventional package.

Operational definitions

1. **Barriers:** It refers to factors affecting practices of mother related to prevention and home-based management of acute respiratory infection in children under the age of five years as identified by conducting focus group discussions among mothers.
2. **Acute respiratory infection:** In the present study, it refers to upper respiratory infection in children less than age of five years manifested as running nose, cough, sore throat, noisy breathing and mild fever. A child having one or more of these symptoms except fever will be identified as having acute respiratory infection as per WHO guidelines.

3. **Prevention of acute respiratory infection:** In present study it refers to actions taken by mothers in order to prevent occurrence of ARI in children as measured by self-reported practice scale.
4. **Management of acute respiratory infection:** In present study, it refers to home based activities and remedies used by mothers to relieve symptoms of ARI in children as measured by self-reported practice scale.
5. **Under five children:** In this study, it refers to children who are in the age group of one to five years.
6. **Risk factors related to ARI:** In Present study, it refers to factors contributing or associated to occurrence of ARI in under five children which includes child characteristics, environmental characteristics, history of illness and nutritional history during infancy period.
7. **Evaluate:** It refers to effectiveness of need based interventional package on knowledge and practice of mothers related to prevention and home-based management of acute respiratory infection and frequency of symptoms and number of episodes of ARI in under five children.
 - **Knowledge:** It refers to awareness of mothers regarding prevention and home-based management of ARI among under five children as measured by structured knowledge questionnaire.
 - **Practice:** It refers to activities related to prevention and home-based management of ARI among under five children which were performed and reported by mothers and was measured by self-reported practice scale.
 - **Frequency of symptoms and number of episodes:** It refers to presence of symptoms of ARI and their duration in terms of number

of days among under five children and measurement of number of times children had symptoms of in past six months.as reported by their mothers and measured by structured ARI screening tool.

8. **Need based interventional package:** It refers to educational package developed by researcher for mothers. It consisted of information on acute respiratory infection, its causes, sign and symptoms, prevention of ARI, its home-based management, demonstration on handwashing, steam inhalation, chest physiotherapy and breathing exercise etc.

Conceptual Framework

Health Belief Model (Rosenstock) published in 1974 was selected to develop conceptual framework for the study. This model focuses on explaining and predicting health related behaviour. It is based on the idea that health related action of people is influenced by their perceived seriousness of threats that may affect health, their perceived vulnerability to threats, benefits of taking a specific action and barriers related to carrying out that action. Additionally, cues to action and self-efficacy are important factors in this model.

Major concepts of Health Belief Model

1. **Perceived susceptibility and seriousness:** It is an individual's belief about developing a particular health condition or experiencing health threat and its seriousness. In present study, mothers having under five children perceived that their children can get ARI and understood that it is a serious illness in children.
2. **Perceived danger:** In this study, mothers having children under five years of age believed that RTI healed slowly within a few days with traditional

applications. If we do not take care of their eating habits and cold, children will suffer from pneumonia.

3. **Perceived benefits:** It is an individual's perception of positive outcomes or advantages they believe will result from taking a specific health related action. Mothers of under five children think that if children are immunized and nourished well, they will be prevented from getting ARI.
4. **Perceived Barrier:** It is individual's perceived obstacles that they believe exist and could prevent them from engaging in a specific health related behaviour. In the present study, lack of awareness, busy life style, family issues and psychological factors like low self-efficacy in providing care are barriers perceived by mothers of under five children in preventing and managing ARI.
5. **Cues to action:** It is external or internal stimuli/trigger that prompts an individual to take specific health related actions. In present study, mothers having children less than five years of age recognize the symptoms of ARI and take appropriate action for its management.
6. **Likelihood of behaviour changes:** It is an individual's belief of their own ability to successfully perform a specific behaviour or action required to achieve a desired outcome. After administering intervention to mothers of under five children, knowledge and practice regarding prevention and management of ARI among children is increased.

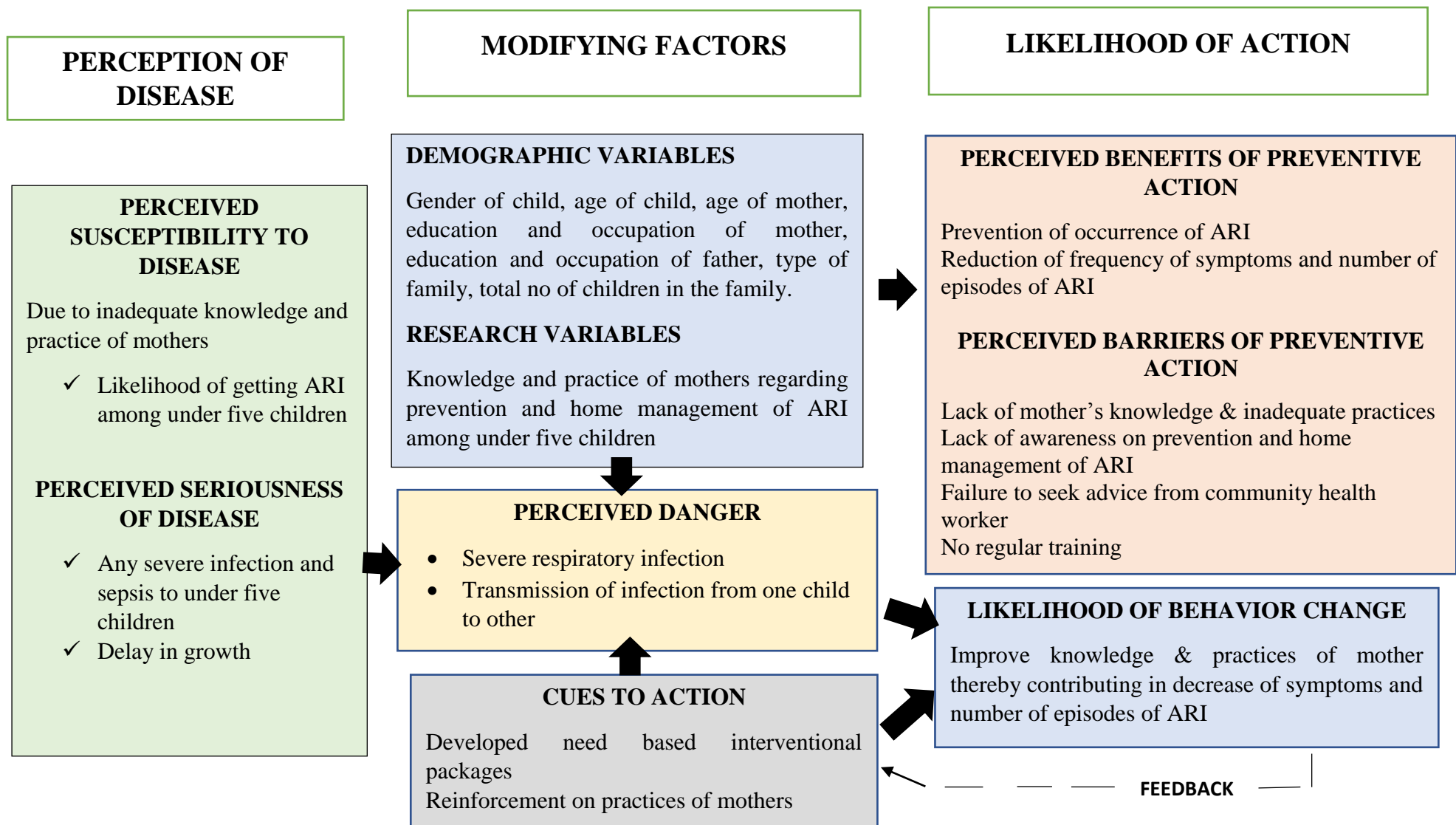


Figure no 1: Conceptual framework adopted from Health Belief Model (Rosenstock

Assumption

The study assumes that

1. Acute respiratory infection is a health problem in under five children
2. The sample will be true representation of target population.
3. Mothers having children less than five years of age may have some awareness about ARI.

Delimitation of study

1. Study was delimited to children belonging to the age group of one to five years.
2. Only preventive measures and home-based management of ARI were included in need based interventional package.

Summary of the chapter

This chapter covered study's introduction, need, problem statement, objectives, conceptual framework, operational definition, hypothesis, assumption, conceptual framework and delimitation.