

# CHAPTER 1

## INTRODUCTION

### **1.1 Background**

Neonatal mortality stays high regardless of a decline in under-five deaths. About 40% of all under-five deaths are among infants.<sup>1</sup> Almost all (99%) of these neonatal deaths were happened in developing nations with the most elevated rates in sub-Saharan Africa.<sup>2</sup> More than 50% of child deaths occur below the age of five years. In 2008, the number of death of under-five children was 1,829,826 out of which 1,003,767 (54.8%) died in the neonatal period. Preterm birth, neonatal infections, asphyxia, sepsis, diarrhea, malnutrition, etc. are the main reasons for most neonatal deaths.<sup>3-5</sup> India ranks second with the largest population, accounting for about 17% of the global population and 20% of worldwide births. India accounts for a fifth of the global under-five child death. Around 27 million live births and two million deaths of under-five children are reported each year. The annual mortality rate of under-five children in India represents a quarter of the global child mortality. Therefore control of child death is very crucial if the world is destined to achieve the targeted Sustainable Development Goal (SDG).<sup>6</sup>

Indian Academy of Pediatrics (IAP) has critically examined numerous health programs of children started by state and central government. Mission 20/20 by IAP has come up to further decrease IMR. With this mission, IAP conveys its zeal to commit its endeavors and assets to catalyze the decrease of IMR in India. This activity supports all necessary requirements to achieve the objective of the mission, IMR of 20 by 2020.<sup>7</sup>

The present neonatal mortality rate is still far from achieving the targeted goal of less than 20/1000 live births.<sup>8</sup> Control of neonatal death is crucial to attain the targeted sustainable development goal of WHO. The government of Indian, through the Ministry of Health and Family Welfare (MoHFW) and the National Health Mission (NHM), has initiated various health programs to control newborn mortality in both villages and cities.<sup>9-10</sup> Under the scheme “Janani Suraksha Yojana”, institutional deliveries have been intended to improve by health professionals through cash rewards to the mothers.<sup>9,11</sup> This may further encourage providing children with good food and quality health care. However, the achievement concerning the control of neonatal mortality rate is still far from the targeted rate. Significant inequalities of NMR are found in rural and urban, and different socioeconomic classes. The neonatal mortality in villages is just double as compared to developed cities (31 vs 15 per 1000 live births).<sup>8</sup> The failure may be due to the way of functioning of the health departments. At this point of time, it is imperative to execute sincere and collaborative services from all related departments i.e. government and private health sectors, and society organizations.

Various factors influence the survival of children after birth that include proper breastfeeding, maintaining a warm body temperature, periodic medical check-ups and getting treatment, etc. The early few years of birth of children is a stage of life where possible maximum care must be provided as they are exposed all of a sudden to a polluted external environment from the sterile condition. The children need to be protected in all respects in the new environment. As a result, a huge number of neonates fall under prey in economically least developed and developing countries. Under-five

deaths are mainly due to premature birth, neonatal sepsis, birth asphyxia, pneumonia, diarrhea, etc in rural areas of India.<sup>12-13</sup>

Efforts have been made to reduce the death rate by incorporating new strategies with respect to premature birth, asphyxia, pneumonia, etc. in several child survival programs.<sup>14-17</sup> Reports are available on the successful implementation of some effective measures related to child health care being taken up by rural health care workers. Management of pneumonia in under-five children using cotrimoxazole could result in a 20% reduction in neonatal mortality that hints the importance of possible home-based care in the management of child mortality.<sup>18</sup>

## **1.2 Accredited Social Health Activists (ASHA) in India**

The National Health Mission (NHM) introduced ASHA, female health workers in 2005. The main goal of the program is to increase the use of trained birth attendants along with auxiliary nurse midwives (ANMs) and Anganwadi workers. Every ASHA is intended to provide care to 1000 people in her area and get payment on execution of services such as promoting vaccination, referral, and accompanying women for deliveries in health facilities. The most well-known ASHA activity, encouragement of institutional delivery under the Janani Suraksha Yojana (JSY), is motivated through incentives. Rs. 600 is paid to ASHA for each woman who has completed institutional delivery, and Rs. 700 is paid to the post-delivery mother also.<sup>19</sup>

ASHAs are expected to play three unique functions in the ASHA program. First and foremost, they serve as a “link worker” connecting the vulnerable populations in rural areas with health institutions. Second, they are “service extension workers”, which

involve being skilled and equipped with kit containing supplies such as condoms, oral birth control pills, delivery kits, and simple life-saving medications such as cotrimoxazole and chloroquine. Third, ASHAs are envisioned as “community health activists” who promote knowledge about health and its determinants. They also prepare people for health planning and proper use of the existing health facilities.

ASHAs are selected from the local areas and given training for 23 days in the initial year, followed by training for 12 days each year after that, according to national criteria. The training course is designed to provide ASHAs with the knowledge, skills, and attitudes needed to successfully perform their tasks and duties. Various studies have been conducted to evaluate the ASHA program since its inception in 2005. The ASHA program has been translated and understood differently, resulting in variability of its implementation at state-levels. Most studies are primarily observational and they give less information about ASHAs' familiarity with their diverse responsibilities and the community where they served. The need for further understanding of ASHAs' activities in various settings arises because India has such a diverse financial, social and political scenario.<sup>19</sup>

### **1.3 Neonatal mortality rate in India**

Indian neonatal mortality rate is reducing progressively in the last some decades, 69 per 1000 live births in 1980, followed by 53/1000 in 1990, 44/1000 in 2000, 32/1000 in 2010, 25/1000 in 2015, and further expected to reduce it to 20 per 1000 live births by 2020.<sup>20-21</sup> Despite the considerable reduction of neonatal mortality rate, the achievement is still far from the targeted Sustainable Development Goal (12 per 1000 live births by

2030) by WHO.<sup>22-23</sup> Besides, an extensive disparity in neonatal mortality still exists in different states of India due to higher NMR in villages as compared to cities.<sup>4,24</sup> Likewise, in Uttarakhand, the existing IMR (31 per 1000 live births in 2018) is very high as compare to the targeted range.<sup>25</sup> According to the report (2016) from the ministry of the home affair, 63% of neonatal mortality rate (NMR) occurred within four weeks of birth while 5% died within 24h of birth. The reports were mainly gathered from the major districts like Dehradun, Haridwar, and Nainital.<sup>25</sup> The reason may be because these districts are comparatively more developed in the state and health care facilities are available. The status of data may be higher in other districts where health facilities are rarely available. In remote places, people prefer child delivery at home. It is necessary to review the system of health care practices in the region with an aim to further reduce NMR. Bang et al. (2005) found a decrease (62%) in NMR in Gadchiroli, India, after three years of implementing community-based neonatal care through community workers. They emphasized the importance of incorporating HBNC techniques into the health system to reduce neonatal mortality.<sup>26</sup>

#### **1.4 Home-Based Newborn Care (HBNC)**

In 2011, the Indian Government introduced the Home-Based Newborn Care (HBNC) program to improve the practices of newborn care, early recognition, and referral of sick neonates through home visits. The program was implemented through ASHA, the lead workforce of the community and they were accountable for preventive care especially maternity and newborn care. ASHAs receive training through a

structured course that includes seven modules; 6 and 7 modules are focused on neonatal care. They are trained with this information over a period of a year in four rounds.<sup>27</sup>

According to data, ASHA visited about four million newborns in 2013–2014 and identified 1,20,000 sick neonates, and referred them to health centers for further management.<sup>28</sup> A few resourceful methodologies have been embraced along with the ASHA training. A supportive management component “Yashoda” has been incorporated to provide care and for guiding the mothers. Several studies on Yashoda and ASHA have revealed shortage of training period as compared to what is required.<sup>29-30</sup> According to the studies; ASHAs were more focused in escorting mothers to promote deliveries in health centers and provide pregnancy care advices to women. The HBNC services were also restricted to health education and referral. Training quality got compromised as program execution expanded; thus, less effectiveness of newborn care services was observed.<sup>31</sup> The quality of ASHA training can be enhanced by utilization of information technology or more interactive tools. There is also a requirement for supplementary classes. Visual aids and regular boosting sessions are vital for ensuring the required competencies of ASHA. Regular ASHA meetings held at health centers may be used to provide continuous training and extra classes.

Interventions in the home-based care practices of newborns with updated knowledge and practice-based activities are mandatory to enhance the services. The role of community health workers (ASHA) needs to be improved with an aim to further augment the survival rate of children in the region including newborns. Understanding the need of improving neonatal health and effective delivery of newborn care services in the block, the current study is aimed to enhance the existing knowledge, attitude and

practices of ASHA workers. Further training with regular reinforcement on HBNC was planned and implemented to ensure the improvement of ASHA's knowledge, attitude, and practices.

### **1.5 Research Statement:**

A study to assess the effectiveness of Home-Based Newborn Care (HBNC) on Knowledge, Attitude and Practices among ASHAs (Accredited Social Health Activists) working in rural areas of Uttarakhand.

### **1.6 Objectives:**

#### **Primary:**

1. To evaluate knowledge and practices of ASHA regarding ongoing Home-Based Newborn Care (HBNC).
2. To identify factors affecting implementation of HBNC by ASHA with the help of Focus Group Discussion (FGD).
3. To re-educate ASHA on HBNC (based on HBNC ASHA training modules 6 &7 by NHM, Govt. of India).
4. To measure the effectiveness of HBNC provided by ASHA in terms of gain in knowledge score, attitude score and practices score.

### **Secondary:**

5. To find association of level of knowledge, attitude and practices of ASHA with that of their demographic and other variables.
6. To correlate the knowledge, attitude and practices scores of HBNC by ASHA.
7. To evaluate the ongoing HBNC practices by mothers of newborn.

### **1.7 Hypotheses: All the hypotheses were tested at a significance level of $p < 0.05$ .**

H<sub>1</sub> – The means posttest knowledge score of ASHA regarding HBNC would be significantly higher than that of their mean pretest knowledge score.

H<sub>2</sub> - The means posttest attitude score of ASHA regarding HBNC would be significantly higher than that of their mean pretest attitude score.

H<sub>3</sub> – The means posttest practices score of ASHA regarding HBNC would be significantly higher than that of their mean pretest practice score.

H<sub>4</sub> - There would be significant association between knowledge, attitude and practices of ASHA with that of their selected demographic and other variables.

H<sub>5</sub> - There would be significant positive correlation between knowledge & practices, knowledge & attitude and attitude & practices of ASHA.

### **1.8 Assumptions:**

- ASHA workers are accepted provider of Home-Based Newborn Care (HBNC) in the community.
- Newborn health outcomes depend on the services of ASHA.
- ASHA workers' behaviours are modifiable through retraining on HBNC.



- Mothers may give true responses to the questionnaires.
- Sample is a true representative of the population.

## **1.9 Operational Definitions:**

1. **ASHA (Accredited Social Health Activists):** The ASHA workers who are working in Doiwala Block.
2. **Home-Based Newborn Care (HBNC):** It consists of information on newborn care at home such as, care of newborns, importance and techniques of breastfeeding, signs that a baby is not getting enough milk, management of breastfeeding problems, keeping the newborn warm, temperature recording using thermometer, management of baby with fever, immunization, care of hypothermia, care of low birth weight, asphyxia management, management of neonatal sepsis and diagnosis of high risk babies and referral. (HBNC– ASHA training modules 6&7 by NHM, revised on 2014 by Ministry of Health and Family Welfare (MoHFW), Government of India).<sup>27</sup>
3. **Effectiveness:** It is the significant development of ASHA in terms of improvement of knowledge, attitude, and practices regarding newborn care after the implementation of the HBNC program as measured by knowledge questionnaire, attitude scale, and self-reported assessment scale on HBNC practices.

4. **Knowledge:** In the study, knowledge refers to information and understanding of ASHA regarding HBNC as measured by a structured knowledge questionnaire on HBNC.
5. **Attitude:** In the study, Attitude is the ASHA's feeling or opinion regarding HBNC as measured by structured attitude scale.
6. **Practices:** Practices refers to the abilities of ASHA regarding HBNC as measured by a self-reported assessment scale on practices of HBNC.
7. **Re-education:** Re-education refers to teaching and training of ASHA on HBNC by the investigator using the same ASHA training module to further enhance their knowledge, practices and attitude.
8. **Reinforcement:** Reinforcement is encouraging, clarifying doubts, and teaching again to ASHAs in every meeting to improve their understanding about HBNC which is measured by using a knowledge questionnaire, attitude scale, and self-reported assessment scale on practices of HBNC.
9. **Postnatal mothers:** Postnatal mothers refer to mothers who were within 42 days of postnatal period after delivering a live baby.

### **1.10 Delimitations:**

The study was delimited to -

1. HBNC trained ASHAs of Doiwala Block and postnatal mothers registered with these ASHAs.

2. Responses of ASHAs and postnatal mothers to the questionnaires related to HBNC.

### **1.11 Conceptual Framework**

This research was intended to identify (contributing and hindering) factors affecting the implementation of Home-Based Newborn Care by ASHA and to re-educate ASHA on HBNC and measure the effectiveness of HBNC provided by ASHA in terms of gain in knowledge score, attitude score, and practice score in Doiwala Block, Dehradun, Uttarakhand. This research work proposed to assess the impact of ASHA training in fulfilling the purposes of newborn care.

Hochbaum, Rosenstock, and Kegels, social psychologists, established the Health Belief Model (HBM) in 1950s. This paradigm was concentrated on the attitudes and beliefs of individual to explain and predict their health behaviors.<sup>32-33</sup> HBM is a common nursing model utilized to deal with patient agreement and practices for prevention of diseases. This model explained four concepts reflecting perceived threats and net benefits: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. The suggested ideas were accountable for an individual's "willingness to act." In addition, the cues to action triggered readiness and aroused open actions. A recent addition to the HBM is self-efficacy which refers to the capacity of an individual to execute an action effectively. In 1988, Rosenstock and others added this definition to assist addressing HBM well and to improve traditional unhealthy habits, such as being inactive, smoking, excess eating etc. The model hypothesized that an individual understands danger associated with health issues and also the importance to act on mitigating factors looking for a healthy behavior. HBM discusses the connection

between the beliefs and behaviors of an individual. It offers a means of understanding and anticipates how clients may act on their health and react to treatments.

### **Major Concepts of Health Belief Model**

The major concepts in HBM:

1. Perceived susceptibility
2. Perceived danger
3. Perceived advantage
4. Perceived expense/ barrier
5. Motivation
6. Modifying factors

**Perceived susceptibility:** It is an individual's belief that an illness is related to them or the medical diagnosis and the treatment is correct.

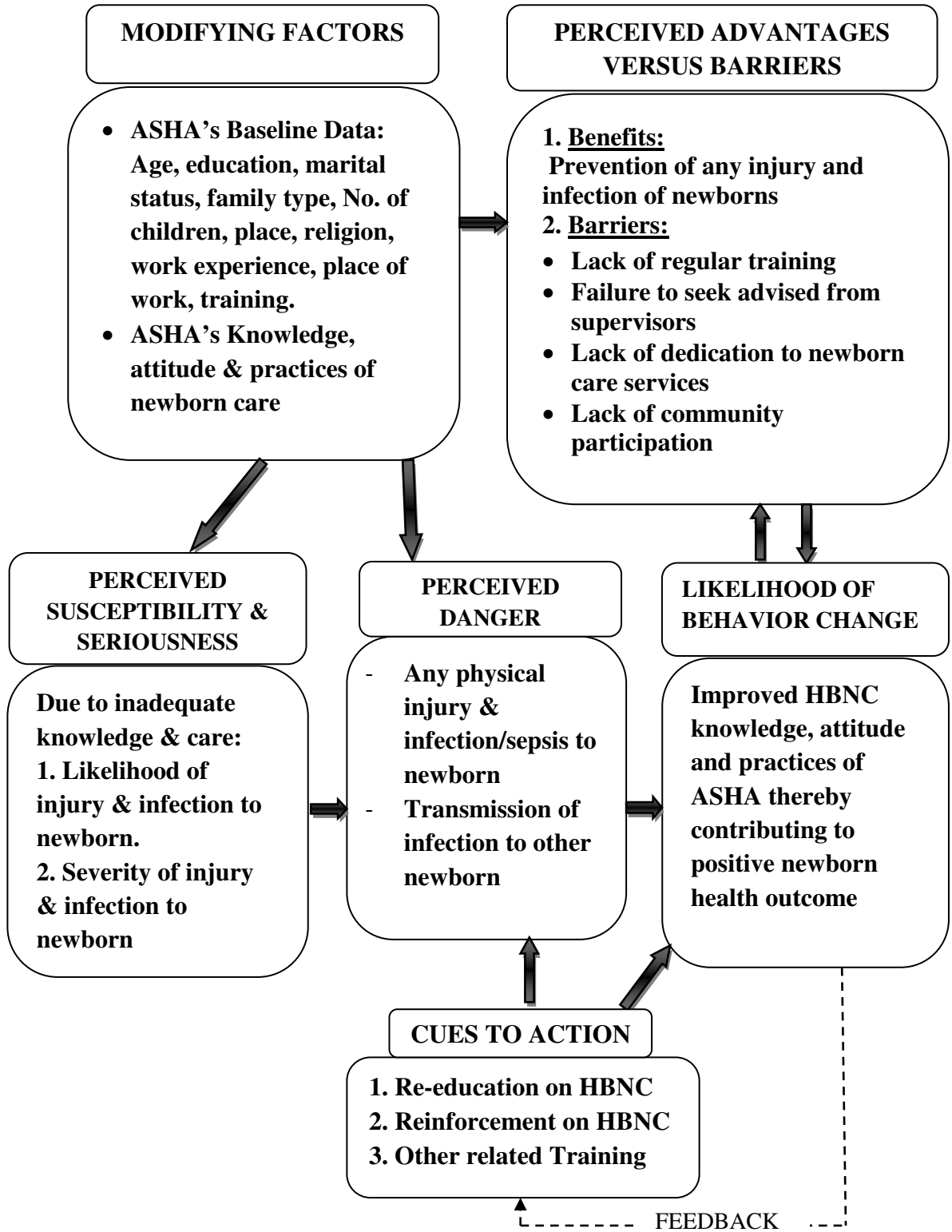
**Perceived Danger:** It is an individual's response to his/her susceptibility. He will wait to respond to a particular threat until he perceives it as a severe danger to him.

**Perceived Advantages:** It is a client's conviction to a specific therapy that would either prevent or cure disease.

**Perceived Barrier:** This is the treatment's intricacy, length, and accessibility.

**Cues to Action/Motivation:** It encompasses the desire of a person to adhere to a treatment regimen, as well as the attitude of the person towards the treatment.

**Modifying factors:** Personal characteristics, individual contentment, and demographic factors are considered in this factor.



---- Not included in the study

**Figure 1: Conceptual framework adapted from Health Belief Model (Rosenstock, 1974)**

## **I. Individual Perceptions**

### **1. Perceived Susceptibility**

It is evident that most people perceive the threat of getting infections or diseases. Accordingly they are ready to adopt necessary healthy behaviors after being provided with adequate reinforcements. Higher the perceived risk, the likelihood of the person to engage in the activities to decrease the risk also increases. In the present study, ASHA realized inadequacy of their knowledge and practices of HBNC during their visit to newborn babies.

### **2. Perceived danger**

It is a person's assessment regarding the sensitiveness of a condition and its consequences. The concept states that people who consider a poor health situation are more likely to take steps to evade poor health consequences or to minimize its severity. In the present study, ASHAs are likely to take necessary measures if they perceive danger of any severe injury and infection to the newborns.

## **II. Modifying factors**

### **1. Perceived danger**

The combination of perceived vulnerability and seriousness is increased as the perceived danger increases. The model predicts the multifaceted hypothetical threat that leads to a higher likelihood of commitment in health encouraging behavior. The ASHA's perception of inadequate knowledge and practices of neonatal care will increase the threat of causing any physical injury and infection/sepsis to newborns, other health complications, and transmission of infection to other newborns.

## **2. Modifying factors**

It includes personality traits, patient satisfaction, and socio-demographic variables. Several factors which were identified in the present study to be associated with ASHA health care activities are as follows:

- The demographic factors like age, education, marital status, family type, number of children, religion, work experience, training etc.
- Personality variables include knowledge, attitude and practices of newborn care.

## **3. Cues to Action**

This suggests people's belief and willingness to cooperate throughout the treatment. Motivation or cues to action influences behavior, according to this paradigm. In the present study, ASHA workers were provided reeducation and reinforcement on HBNC in multiple sessions. The purpose of reeducation was to help them to remember the correct practices of HBNC while giving care to newborn babies.

## **III. Likelihood of taking action**

### **1. Perceived Advantages**

It is a person's trust in the treatment to minimize the danger or severity of the illness. An individual has a tendency to acquire a restorative behavior when they trust the prescribed treatment. Similarly, ASHAs realized the need of proper training and reeducation on HBNC knowledge and practices. This may help to prevent or reduce the incidences of injury and infections to the newborn babies while providing care.

## **2. Perceived Barrier**

It is a person's assessment of the psychological state and monetary expenditure of the recommended activity. This includes the treatment's intricacy, duration, and accessibility. ASHAs realized the barriers of their services for newborns such as irregular training, failure to seek advice from supervisors, and lack of dedication to newborn care services etc.

## **3. Likelihood of Behavior Change**

The possibility of changing behavior of an individual is generally determined by comparing the advantages of an action with its barriers. If ASHA workers realize the barriers and benefits of the health services of newborns, they are more likely to change their behavior. In the present study, the ASHA workers were likely to improve their knowledge, attitude, and practices of HBNC. This may improve the quality of their services for newborn babies, minimizing the chances of getting infection or injury.