

Master of Science in Public Health



*Assessment of Feeding Practices and Nutritional
Status of Children under 06 years Incarcerated with
Mothers in Central Jail, Rawalpindi*

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Central Jail, Rawalpindi*

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Declaration

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This dissertation is the result of an independent investigation. Where my work is indebted to others, I have made acknowledgments.

I declare that this work has not been accepted in substance for any other degree, nor is it currently being submitted in candidature for any other degree.

(Qurat-ul-Ain Waheed

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Abstract

The feeding practices of infants and young children have significant implications for their growth, development, and overall survival. Inadequate or inappropriate feeding practices during the early stages of life can lead to severe consequences such as malnutrition, stunted growth, weakened immune system, and increased susceptibility to diseases. This study investigates the feeding practices and nutritional status of children aged 0-72 months incarcerated with their mothers in Central Jail Rawalpindi, Pakistan. The study is cross-sectional and employs a convenience sampling technique. Primary data was collected using a questionnaire, while secondary data was obtained from previous research. There are 76 incarcerated mothers, and 83 children are living in the Central Jail during survey period in January, 2023. Data was collected from those children and mothers. The study found that 66.3% of the children had a birth weight of less than 2 kg, which is lower than the national average in Pakistan. The majority of infants born to incarcerated mothers were breastfed, but only 7.2% were exclusively breastfed, and 69.9% were on mixed feeding. The study recommends interventions aimed at improving the nutritional status of incarcerated children should consider the socio-demographic characteristics of the mothers and their specific needs. It also highlights the need to address the factors contributing to low birth weight, which include maternal malnutrition during pregnancy, high prevalence of maternal illnesses, and the stressful jail environment. The findings of this study have important implications for policy and practice related to maternal and child health in the context of incarceration. Similar research should be replicated especially to determine the micro-nutrient status of the children.

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Chapter 1: Introduction

1.1 Background

The criminal justice system in Pakistan is failing to adequately consider the needs and well-being of women prisoners. Despite their relatively small numbers, women in the justice system are often overlooked due to their lack of information and power, making them vulnerable compared to their male counterparts. It is essential to implement institutional arrangements to address this gender-specific issue and safeguard the fundamental rights of convicted and awaiting trial female prisoners.

Mothers make up a significant proportion of the female prison population in Pakistan, ranging from 57% to 80%. The incarceration of mothers can negatively impact the intellectual and emotional development of their children, referred to as "secondary victims." Concerns arise over the duration and extent of their incarceration with their mothers, despite the maximum age limits set by the Pakistan Prison Rules. In order to mitigate these negative effects, it is vital to provide appropriate facilities, such as educational programs, recreational activities, air coolers, electric water coolers, and perception rooms equipped with televisions and computers for children. Furthermore, sensitization training programs for prison staff are necessary to understand the specific needs of women and children in prison(WHO., 2010)

Children up to the age of six are permitted to live with their mothers in Multan and Rawalpindi, while children of all ages have access to a special classroom in Central Jail Lahore. However, the responsibility for teaching falls on inmates with educational backgrounds, and there are no external teachers. Despite the provisions in place, complaints from prisoners about inadequate medical care for their children with developmental delays highlight the need for more support and intervention. The World Health Organization emphasizes the importance of providing practical support and special attention to families and children in difficult circumstances, such as those in prison. Breastfeeding is the recommended method of baby feeding, therefore it's important to keep mothers and babies together and give the assistance they need to decide on the best feeding choice.

In sum up, women prisoners in Pakistan are often neglected and vulnerable, and their rights need to be safeguarded. Provisions such as educational programs, recreational activities, and perception rooms for children are essential for their intellectual and emotional development.

Moreover, children incarcerated with mothers are also vulnerable so that sensitization training programs for prison staff are necessary to understand the specific needs of women and children in prison, and medical care for children with developmental delays should be prioritized. It is vital to provide practical support and special attention to families and children in difficult circumstances to ensure their well-being.(WHO., 2010)

1.2 Research Purpose

The purpose of this study is to explore the feeding practices and nutritional status of children who are residing with their incarcerated mothers in the Central Jail of Rawalpindi, Pakistan. The study aims to provide a comprehensive understanding of the dietary habits of these children and their overall nutritional well-being, in order to shed light on the challenges they face in accessing adequate nutrition in a carceral environment.

1.3 Problem Statement

Central Jail in Rawalpindi has an average of 90 children aged between 0 to 72 months along with their 100 incarcerated mothers in the women's barracks(Prisons Punjab, 2022). However, there is no standardized information available on the feeding practices for these children who are classified by international agencies as being in difficult circumstances. The ability of the prison authorities to carry out thorough, individualized need-based assessments for both the mother and child is unknown, despite the fact that the Prison Rules call for individual case-by-case assessments to determine the best interests of the child and identify suitable living arrangements.

Children who go to jail with their mothers have less access to well-baby clinic services than mothers who live outside of prison. The inability to regularly monitor these kids' growth might postpone the identification of growth failure and the subsequent intervention. Additionally, in this environment, faster feeding during sickness is not a typical practice.

1.4 Research Objectives

1. To ascertain the nutritional status of children aged 0-72 months old of incarcerated mothers living in the Central Jail, Rawalpindi.
2. To assess the feeding practices of mothers with children in the jail.
3. To make recommendations for improving the nutritional status of children in the jail.
4. To determine the association between nutritional status and feeding practices.

1.5 Significance of the Study

There are several reasons why this study is significant. First off, it would expand on the scant information presently known on the feeding practises and nutritional status of kids held in Central Jail Rawalpindi with their mothers. Second, the findings of this study will be useful for policymakers and stakeholders in the criminal justice system and child welfare sector, including the Ministry of Interior, Pakistan; the Ministry of Human Rights; the Ministry of Health; and UNICEF, who can use the information to inform policies and programmes aimed at enhancing the health and nutrition of kids in jail. Third, the study will contribute to the broader literature on the impact of maternal incarceration on children, highlighting the need for interventions to support the nutritional well-being of children of incarcerated mothers. The findings serve as a foundation for contesting the Prisons Act for failing to address the health and nutritional needs of children residing in the Central Jail in Rawalpindi with their detained mothers.

1.6 Operational Definitions of Key Terms

The following terms will be defined as follows for the purpose of study:

Incarcerated mothers: Women who are serving a sentence in Central Jail Rawalpindi and who have their children with them.

Children of incarcerated mothers: Children with mothers up to 6 years who are incarcerated with their mothers in Central Jail Rawalpindi.

Feeding practices: The behaviors, attitudes, and beliefs related to the provision of food to children.

Nutritional status: The anthropometric status for children, including the indices of weight for height, weight for age, and height for age, are discussed.

Chapter 2: Literature Review

Child nutrition has a significant role in a child's overall health and development. Children who are locked up in jails with their mothers suffer particular difficulties getting enough nourishment. The analysis of prisoner children's eating habits and nutritional status is a relatively recent field of inquiry with few information accessible. This study of the literature seeks to provide an overview of the present knowledge and understanding of feeding methods and nutritional condition of children detained in Central Jail Rawalpindi with their mothers.

2.1 Feeding Practices of Incarcerated Mothers and Children

Incarcerated mothers and their children face a number of challenges related to food and nutrition, including limited access to nutritious food, poor meal quality, and limited food choices. These factors can have a significant impact on the nutritional status of both the mother and the child and may contribute to the development of malnutrition and other health problems.

One study conducted in a women's prison in the United States found that incarcerated mothers often lacked access to nutritious food and were unable to prepare meals for themselves and their children due to restrictions on the use of kitchen facilities(Schwalberg, 2013). This resulted in a reliance on pre-packaged and processed foods, which were high in fat, sugar, and salt, but low in essential nutrients such as vitamins and minerals.

Another study conducted in a Brazilian women's prison found that incarcerated mothers reported a limited variety of food options, with most of the meals being based on rice and beans (Santiago, 2018). The study also found that many of the mothers reported feeling physically weak and lacking energy due to the poor quality of the food, which was often contaminated with bacteria and other harmful substances.

In addition to limited access to nutritious food, incarcerated mothers and their children may also face challenges related to feeding practices, including feeding difficulties, feeding problems, and feeding disorders. For example, one study found that incarcerated mothers often struggled to provide adequate and appropriate feeding for their infants, due to a lack of resources, support, and knowledge(Smith, 2012).

The feeding practices of incarcerated mothers and children are often suboptimal due to several factors. Incarcerated mothers have limited access to healthy food options, and this can lead to

unhealthy food choices. A study by(Geller, 2012) found that incarcerated mothers reported eating high amounts of carbohydrates, fats, and sodium, which may contribute to poor health outcomes for both mothers and children. The study also found that the quality of food provided to incarcerated mothers was poor, with most meals lacking in fruits, vegetables, and fiber.

Breastfeeding is an essential feeding practice that promotes optimal health outcomes for both mothers and children. However, incarcerated mothers face several challenges in breastfeeding their children. These challenges include a lack of breastfeeding support, limited access to breast pumps, and the need to pump in public areas, which can be a source of embarrassment and discomfort (Goossens & Haegeman, 2022). These challenges can lead to poor breastfeeding practices and negatively affect the health results of both the mother and the child.

Incarceration of mothers can disrupt the family structure, leading to emotional and social stress for both the mother and child. Children of incarcerated mothers are often placed in foster care, and separation from their mother can lead to poor health outcomes, including poor nutrition. Additionally, incarcerated mothers face several challenges that affect their ability to provide adequate nutrition to their children. These include the limited availability of healthy food options and the lack of breastfeeding support(Andrea, 2019).

Despite the challenges, there are opportunities for promoting healthy feeding practices for incarcerated mothers and their children. One of the opportunities is providing nutrition education and counseling to incarcerated mothers to promote healthy food choices. A study by (Andrea, 2019)found that nutrition education programs in correctional facilities significantly improved the dietary intake of incarcerated mothers. The study also found that nutrition education improved the knowledge and skills of incarcerated mothers regarding healthy food choices and food preparation.

Another opportunity is providing breastfeeding support to incarcerated mothers. Breastfeeding support programs can include access to breast pumps, private spaces for pumping, and lactation consultants to provide guidance and support to incarcerated mothers. A study by (Rosemary Mhlanga-Gunda, 2020) found that a breastfeeding support program for incarcerated mothers significantly improved breastfeeding rates and duration.

2.2 Nutritional Status of Incarcerated Mothers and Children

The limited access to nutritious food and poor feeding practices of incarcerated mothers and their children can have a substantial influence on their nutritional status. For instance, some studies have revealed that moms who are jailed have a higher chance of developing malnutrition since there is a lack of access to good food and inadequate feeding procedures(Schwalberg, 2013).

In addition, children who are incarcerated with their mothers may also be at risk of malnutrition, as well as other health problems related to poor nutrition. For instance, one study has found that incarcerated children were more likely to suffer from malnutrition and other health problems, such as stunted growth and developmental delays, compared to children in the general population (Smith, 2012).

Incarcerated women are more likely to experience nutritional deficiencies than the general population. A study found that incarcerated women had lower levels of vitamin D and iron than non-incarcerated women. Among addition, the lack of access to nutritious meals, sedentary habits, and stress increases the likelihood of becoming overweight or obese in jailed women(Dabbagh, 2015).

Due to restricted access to wholesome food alternatives and disturbed mealtimes, children of jailed mothers are more likely to suffer from malnutrition. According to studies, children of jailed mothers are more likely than their peers to face food poverty and have less variety in their diets(Bailey, 2017). In addition, these kids are more likely to be overweight and obese due to a lack of physical exercise and restricted access to wholesome foods.

Several interventions have been proposed to enhance the nutritional status of incarcerated mothers and their children. One example is the implementation of nutrition education programs within correctional facilities. These programs aim to educate incarcerated mothers on healthy eating habits and provide them with practical skills to prepare healthy meals for themselves and their children (Ferrara, 2006). Additionally, providing access to healthy foods within correctional facilities and ensuring that children of incarcerated mothers receive adequate nutrition and healthcare can improve the nutritional status of this population (Edmond K., 2006).

According to a Turkish research, mothers who are detained and their kids consume much less protein, fiber, vitamins, and minerals than mothers and kids who are not incarcerated. Additionally, this study discovered that mothers and kids who were detained had greater rates of anaemia (Liu, 2015).

Another study by (Seena Fazel, 2018) in the United States found that incarcerated women had higher rates of chronic health conditions, such as diabetes and hypertension, which can negatively impact their nutritional status. Additionally, many incarcerated women face food insecurity, which can further exacerbate nutritional deficiencies.

According to a research, children of mothers who were imprisoned had greater rates of food insecurity and were more likely to be overweight or obese than children of mothers who were not imprisoned. The study also discovered that children of jailed mothers consumed more sugar-sweetened drinks and less fruits and vegetables (Roberts, 2017).

2.3 Impact of Incarceration on Children's Nutritional Status

Incarceration can have a negative impact on a child's nutritional status, as it disrupts their normal routines and access to nutritious food. Children who are incarcerated with their mothers often experience stress and anxiety, which can further impact their nutrition. Additionally, limited opportunities for physical activity and play can lead to decreased energy expenditure and decreased growth.

According to one study, children with jailed parents were more likely to experience food insecurity and to have less access to healthful foods (Liu, 2015). In addition, parental incarceration can disrupt family routines and limit opportunities for physical activity, which can further exacerbate the risk of malnutrition (Roberts, 2017).

Research also indicates that the nutritional status of children can be impacted by the mental health of their caregiver, which can be negatively affected by the stress and trauma associated with parental incarceration (Santiago, 2018). Additionally, studies have shown that caregivers of children with incarcerated parents often struggle to provide adequate nutrition due to financial constraints and emotional strain (Quilty S, 2004).

To meet the dietary requirements of kids whose parents are in prison, a number of intervention programmes have been created. For example, a program called "Fresh Start" was developed to

provide children with healthy meals and nutrition education during their visits with their incarcerated parent (Wilde, 2015). Other programs have focused on providing financial assistance to caregivers and connecting them with community resources to improve access to healthy food.

In recent years, the effect of parental imprisonment on children's nutritional condition has come under the spotlight as a public health issue. Over 2.7 million children in the United States have a parent who is jailed at the moment, and these children are more likely to experience food poverty and have poor nutritional results (Bailey, 2017).

The link between child food insecurity and parental imprisonment has been investigated in a number of research. According to one study, children of jailed parents were more likely than children of non-incarcerated parents to experience food insecurity (Lee et al., 2017). Another study found that children of incarcerated mothers were more likely to be food insecure than children of incarcerated fathers (Geller, 2012).

Research has also examined the impact of parental incarceration on children's dietary intake. A study of low-income urban children found that those with incarcerated parents had lower intakes of fruits, vegetables, and dairy products than those without incarcerated parents (Gadowsky et al., 2018). Another study found that children with incarcerated parents were more likely to consume fast food and sugary drinks (Ferrara, 2006).

In addition to dietary intake, studies have also investigated the impact of parental incarceration on children's anthropometric measurements. One study found that children with incarcerated parents had higher body mass index (BMI) z-scores than those without incarcerated parents (Roberts, 2017). Another study found that children of incarcerated parents were more likely to be overweight or obese (Lee, 2018).

The mechanisms behind the relationship between parental incarceration and poor nutritional outcomes are complex and multifaceted. One factor is the financial strain that families of incarcerated parents often face, which can limit access to healthy food (Liu, 2015). Additionally, parental incarceration can disrupt household routines, leading to irregular meal patterns and less time for meal preparation (Geller, 2012).

In sum up, the available literature suggests that parental incarceration is associated with food insecurity, poor dietary intake, and adverse anthropometric outcomes in children. These findings highlight the need for targeted interventions to improve the nutritional status of children with incarcerated parents, including access to healthy food and support for maintaining healthy routines.

2.4 Breastfeeding Practices

Infant and young child feeding methods have a big influence on their nutritional condition, growth and development, general health, and chance of survival. 5.9 million children under the age of five lost their lives in 2015, and more than half of these avoidable or curable diseases, such as hunger, diarrhoea, pneumonia, and malaria, were to blame. Exclusive breastfeeding is regarded as one of the easy-yet-effective therapies that can help stop these terrible diseases. Breastfeeding offers defence against a variety of diseases and infections, including as pneumonia, neonatal sepsis, and diarrhoea. As a result, the World Health Organization and the United Nations Children's Fund advise starting nursing within the first hour of life and continuing it exclusively for the first six months (WHO, Exclusive breastfeeding , 2015). To assess mothers' breastfeeding knowledge and habits, a number of research have been carried out. The investigations have uncovered a number of violations that are often reported, including delaying the start of breastfeeding, withholding colostrum, providing pre-lacteal meals, adding formula milk as a supplement, and starting supplementary feeding too soon (Cruz Agudo Y, 2010). Although optimum breastfeeding rates are recorded at relatively low rates, nursing is frequently practised in Pakistan. Only 18% of mothers began nursing within an hour of giving birth, whereas 38% of infants under six months old were exclusively breastfed, and 75% of babies were given pre-lacteal feed, according to the Pakistan Demographic and Health Survey (PDHS) 2012–13 (Report, 2013). Numerous initiatives are being carried out by the government and non-governmental organisations to enhance the nutritional condition of mothers and children. Additionally, a national infant and young child feeding (IYCF) plan has been created. Obtaining baseline information on maternal knowledge and behaviours is crucial to guarantee the successful implementation of this strategy in a tertiary healthcare centre. The goal of the study was to evaluate mothers' current knowledge and habits on the best practises for breastfeeding. Need-based counselling sessions for the mothers can be organised using the data from this study.

In Islam, it is mandated that mothers breastfeed their children for two years, as the Holy Qur'an stipulates: "mothers shall suckle their children for two whole years". The World Health Organization has also emphasized the importance of exclusive breastfeeding (EBF) for healthy growth and development in young infants (WHO R. , 2017). Worldwide, exclusive breastfeeding has the potential to save the lives of more than one million newborn infants annually (Edmond K., 2006). In underdeveloped nations, exclusive breastfeeding has the potential to prevent up to 1.45 million deaths annually, particularly by lowering the mortality rates of children with lower respiratory tract infections and diarrheal illnesses (UNICEF, 2015). Unfortunately, it is common practise to abruptly stop nursing in favour of commercial breast milk replacements, introduce liquids like juice and water, supplement needlessly, and introduce solid, semi-solid, and soft meals at the wrong time—often of subpar quality (Cai, 2012)

2.4.1 Exclusive Breastfeeding

Breastfeeding has several advantages that are important for public health in both developing and industrialised countries. It is the easiest, healthiest, and most affordable approach to satisfy the nutritional needs of virtually all newborns. Non-exclusive breastfeeding is preferred to exclusive breastfeeding and offers protection against both morbidity and mortality. Giving just breast milk, with the exception of drops or syrups containing vitamins, minerals, or medications, is referred to as exclusive breastfeeding (DJP, 1998).

For the first six months of life, newborns should only be breastfed, according to the Global Infant and Young Child Feeding Practices. However, only 37% of babies and young children throughout the world receive just breast milk, despite this guideline. According to the Pakistan Demographic and Health Survey, only 48% of infants under six months old in Pakistan are exclusively breastfed, and 53% of those infants' nurse until they are two years old (PDHS, 2018). According to scientific evidence, infants who are not exclusively breastfed are more likely to die from diseases including pneumonia, diarrhoea, and newborn sepsis (Oche M.O., 2011).

About 70% of the mothers nursed their babies, according to research on the health of 150 youngsters detained at Rome's main jail. In the Welikata jail in Colombia, Sri Lanka, possible observational research found that 70% of the kids who came with their detained mothers were nursed. The research could not identify whether these infants were exclusively breastfed, though.

Mothers serving prison terms may not have the time to solely breastfeed their children on demand since they are constantly separated from them (Bastick, 2008).

The infant receives full nourishment at a reasonable cost when exclusively breastfed. It protects the kid against a number of illnesses, such as newborn diarrhoea, and prolongs lactation amenorrhea, which lengthens the interval between deliveries (Oche M.O., 2011). The lack of data makes the exclusive breastfeeding status in prisons a matter of concern.

2.4.2 Early Initiation of Breastfeeding

Within the first hour following delivery, breastfeeding is advised by the World Health Organization and UNICEF (WHO, Breastfeeding Report, 2018). Early mother-child connection results in several changes in brain tissue as well as the release of chemical neurotransmitters that activate the hormones responsible for feeding. A subsequent rise in prolactin soothes the woman and helps her deal with the stress of childcare and the added responsibility of becoming a parent (PDHS, 2018). This is crucial for mothers who are incarcerated in order to lessen the psychological toll of confinement. The start of mother-child continuity of care, which may have long-term benefits on development and health, is early commencement of exclusive breastfeeding (WHO U. , 2010). Only 39% of newborns in poor nations breastfeed within an hour of delivery, in spite of these recommendations. In Pakistan, the rate of “early breastfeeding” is 18% and only 37.7% of mothers practice “exclusive breastfeeding for 6 months”. Statistics suggest that 44% of Pakistani children are underdeveloped (smaller than age, poor cognitive function and other developmental milestones). Be sure to start breastfeeding early; exclusive breastfeeding and free breastfeeding for 2 years can significantly reduce stunting in Pakistan (WHO, Report on Breastfeeding, 2018). Breastfeeding before the first 24 hours was connected to starting breastfeeding (WHO., 2010). Dr Mohamed Assai, WHO representative in Pakistan, said mothers should breastfeed for two years because breastfeeding can save hundreds of thousands of babies by protecting them from various diseases. WHO, in collaboration with all other relevant organizations and United Nations partners, will continue to provide technical support to the Government of Pakistan to ensure that all public and private reproductive health centers and hospitals nationwide are transformed into child-friendly health facilities. by 2030 (WHO, Breastfeeding Report, 2018). The International Baby Food Action Network Geneva suggested the following to assist pregnant prisoners: Inmates who are pregnant should have access to

assisted delivery services like non-prisoners do, including immediate "skin to skin" and the ability to start nursing an hour after giving birth. In virtually all difficult conditions, breastfeeding is still the preferred method of newborn feeding for children in jail, who are classified by the WHO as vulnerable children (WHO., 2010).

2.5 Complementary Feeding Practices

World Health Organization advises early beginning and maintenance of breastfeeding for at least two years after the first six months of life. Additionally, it suggests supplementary meals that are age- and nutritionally appropriate starting at six months of age (WHO, Breastfeeding Report, 2018). At six months, when breast milk is no longer enough to meet all nutritional needs, infants go through a particularly susceptible time of supplementary feeding. They gradually go from individual meals throughout this period to family dinners (Bhan, 2010). The kid is deprived of appropriate nutrition due to improper supplemental feeding time, which causes malnutrition and higher rates of death and morbidity (Cruz Agudo Y, 2010). The new WHO indicators state that feeding solid, semi-solid, or soft meals to babies aged 6 to 8 months, as well as whether or not they are breastfed, are key markers of timeliness. The WHO recommends that children eat 2-3 times per day at first, increasing to 3-4 times per day between 9-11 months and 12-23 months with the inclusion of healthy snacks. 1- As often as necessary for recognition, twice daily (WHO., 2010). According to research conducted in Malawi, children who are fed in accordance with the WHO timetable are better nourished than those who are exposed to solid meals too early (WHO R. , 2017). To achieve a varied diet, each meal should contain an adequate amount of meat, poultry, fish, or eggs, as well as vitamin A-rich fruits and vegetables. It is thought that your child's nutritional needs may be met by eating from at least 4 of the 7 food categories. 72% of Pakistani kids between the ages of 6 and 24 months consume the appropriate variety of foods. The use of enriched nutritional supplements and vitamin and mineral supplements may be required when this is not feasible to ensure appropriate consumption of certain nutrients (Bhan, 2010). To make sure that the infant's nutritional demands are addressed, complementary feeding must be given in a timely, suitable, and safe manner. In accordance with the child's degree of hunger and satiety, food should also be provided using suitable technique, with age-appropriate frequency and consistency (CG, 2010). Children between the ages of 6 and 23 months consumed the most cereals, roots, and tubers and the least legumes and nuts, according to UNICEF. Boys consumed somewhat more of the seven food categories than females did, according to the WHO.

Compared to children of older mothers, children of younger mothers consumed less items from the seven suggested dietary categories. It was shown that educated mothers care for their children better than illiterate mothers, and that almost 70% of children whose mothers were 19 years of age or older consumed foods high in iron, as opposed to only 23% of children whose mothers were the same age. Mothers were at least 19 years old. age range: 15 to 18 (Report U. , 2013)

2.6 Impact of Mothers Demographic and Socio-economic Status in Children's Nutritional Status

The development of foetal growth is greatly influenced by the diet of the mother. According to the Developmental Origins of Health and Disease theory, unfavourable eating patterns during pregnancy might permanently change how specific organs develop and function in the children, which could lead to a range of illnesses as adults(DJP, 1998). According to the DOHaD theory, undernutrition (stunting and wasting) and overnutrition (overweight and obesity) in infancy are directly related to worsening health consequences in adulthood. In order to reduce the latent risks of illnesses, it is necessary to prevent adult disease by increasing maternal and child health, lowering malnutrition by providing nutritious foods and a well-balanced diet, and creating health-promoting policies. The nutritional condition of children is substantially influenced by the nutrition knowledge of the mother and marital status. Women with little or no education are often more knowledgeable about how to use resources to better their own and their family' nutritional condition than women with no education (Schwalberg, 2013).

The diet of children is significantly influenced by the mother's age and education. Higher mother age and education are positively correlated with better outcomes for a child's nutrition, according to studies (Geller, 2012). According to research done in rural Punjab, mother's education was positively correlated with children's weight-for-age and height-for-age Z-scores, and it had a stronger impact on boys' nutrition than it did on girls (Grantham-McGregor, 2007) . In a similar vein, a research carried out in Karachi discovered that mother education was a strong predictor of children's Z-scores for height and weight for age (Mumtaz, 2018). Child nutrition is also influenced by the mother's age, since children of younger mothers are more likely to be undernourished.

Maternal health and healthcare are also important determinants of child nutrition in Pakistan. Maternal health problems, such as anemia and undernutrition, can affect fetal growth and increase the risk of low birth weight, which is a strong predictor of child malnutrition. Maternal anaemia was discovered in Karachi to have a negative correlation with children's height for age Z-scores (Mumtaz, 2018).

According to the facts available, women inmates all over the world seem to have a socially disadvantaged upbringing. Regardless of the nation or continent, the majority of women who end up in jail come from the most deprived social groups and have lived lives marked by violence and social marginalization (Andrea, 2019). While just 2.37% of male criminals in Mexico are illiterate, 8% of imprisoned women in Brazil had just graduated from high school at the age of 14 (WHO U. , 2010). The bulk of Americans are from underprivileged minority populations. The majority of them are young mothers with no educational or professional background, a history of drug misuse, and unemployment. As a result, children whose mothers are in jail are more likely to already have poor health prior to their entry, making them more susceptible to severe prison circumstances.

2.7 Childhood Morbidity and Maternal Health Seeking Behavior

Childhood morbidity is a major public health concern in Pakistan, with high rates of infectious and non-infectious diseases. The most common infectious diseases among children in Pakistan are acute respiratory infections, diarrhea, and measles (Report, 2013). Non-infectious diseases, such as malnutrition, anemia, and injuries, also contribute significantly to childhood morbidity in Pakistan. The burden of childhood morbidity is higher in rural areas, where access to healthcare is limited (Manesh, 2008). Maternal health seeking behavior is a critical determinant of child health outcomes in Pakistan. Access to healthcare and timely treatment can significantly reduce the burden of childhood morbidity. However, maternal health seeking behavior in Pakistan is influenced by various factors, including socio-demographic characteristics, cultural beliefs and practices, and healthcare system factors.

In Pakistan, socio-demographic variables including maternal age, education, and income have a significant role in determining the behaviour of mothers seeking medical attention. According to studies, women who are older, more educated, and have better incomes are more likely to take

their kids to the doctor (PDHS, 2018). According to a same study done in rural Sindh, mother income and education were favourably correlated with child healthcare seeking behaviour.

Healthcare system factors, such as the availability and accessibility of healthcare services, also affect maternal health seeking behavior in Pakistan. Studies have shown that the quality of healthcare services and distance to healthcare facilities influence healthcare seeking behavior among mothers (Bastick, 2008). A study conducted in urban Lahore found that the quality of healthcare services, including the behavior of healthcare providers and availability of medicines, was a significant factor in maternal healthcare seeking behavior. Similarly, a study conducted in rural Punjab found that distance to healthcare facilities was a significant barrier to maternal healthcare seeking behavior.

2.8 Life in Adiala Jail

Incarceration is undoubtedly a challenging experience for any individual, and when mothers are separated from their children, the hardship intensifies. However, within the confines of Adiala Jail in Rawalpindi, a beacon of hope shines through as efforts are being made to improve the lives of incarcerated mothers and strengthen the bond with their children. By focusing on positive initiatives, support systems, and the resilience of these mothers, Adiala Jail is taking steps towards rehabilitation, empowerment, and family reunification.

Adiala Jail recognizes the immense importance of the mother-child bond and endeavors to create an environment that fosters meaningful connections. The implementation of dedicated mother-child bonding programs facilitates regular visits and interactions, providing incarcerated mothers with opportunities to nurture their relationships with their children. These initiatives offer safe and welcoming spaces, allowing precious moments of play, communication, and emotional bonding that can endure even beyond the prison walls (Kiani, 2015).



Figure 1: Skill Learning

Acknowledging the significance of self-improvement, Adiala Jail provides a range of programs and resources designed to enhance the skills and capacities of incarcerated mothers. Parenting and life skills training empower these mothers by offering guidance in effective parenting techniques, communication skills, and emotional well-being. By equipping them with these invaluable tools, Adiala Jail fosters personal growth, enabling mothers to make positive changes in their lives and lay the foundation for a brighter future for themselves and their children.

Adiala Jail recognizes the transformative power of education and vocational training. Through partnerships with educational institutions and vocational programs, incarcerated mothers have access to learning opportunities that can expand their horizons and boost their employability upon release. By completing high school equivalency programs or pursuing college courses, these mothers can gain qualifications that provide a path to better employment prospects, financial stability, and a stronger foundation for supporting their children's future.

In the spirit of collaboration and support, Adiala Jail works closely with non-governmental organizations (NGOs) to augment the positive impact on incarcerated mothers and their children. NGOs offer a wide array of services such as counseling, legal aid, financial support, and assistance in maintaining contact with children. These collaborations ensure that a comprehensive network of care is available, addressing the diverse needs of incarcerated mothers and ensuring their well-being throughout their time in Adiala Jail (MOHR, 2020).



Figure 2: Skill Learning

Adiala Jail places significant emphasis on successful reintegration into society. Recognizing that a seamless transition is crucial for the well-being of incarcerated mothers and their children, the prison authorities collaborate with community-based organizations. These initiatives provide crucial support in accessing housing, employment opportunities, and social services after release. By offering a holistic approach to reintegration, Adiala Jail facilitates the reunification of families and paves the way for a fresh start, promoting stability, and reducing the likelihood of recidivism (Prisons Punjab, 2022).

While incarceration poses significant challenges, Adiala Jail in Rawalpindi demonstrates a commitment to empowering incarcerated mothers and nurturing the bonds they share with their children. Through the implementation of positive programs, the provision of essential skills, educational opportunities, and collaborations with NGOs and community organizations, Adiala Jail strives to create an environment that fosters growth, rehabilitation, and successful reintegration. By recognizing the inherent worth and potential of incarcerated mothers, Adiala Jail sets a positive example for correctional facilities, offering hope and fostering resilience within these families.



Figure 3: Skill Learning at Jail

According to jail authorities, the clean environment, breast feeding practices, proper nutrition, regular checkups are the key factors that keep the children healthy inside the jail. In the same way, children are availing the facility of medical checkups often and children living inside the jail had the highest regular checkups. In the jail, 24 hours medical facilities are available. Furthermore, medical consultants from teaching hospital visit the prison on weekly basis. Medicines are also available in the jail. There is also a proper sanitation and hygiene facilities in the jail. Prisoners get sanitation packs which consist of soap, toothbrush, toothpaste, hair comb, etc. Doctors with collaboration with psychologist of jail daily check and visit the inmates for rehabilitation.



Figure 4: Medical Team's Visit



Figure 5: Security & Safety of Food in Adiala Jail



Figure 6: Skill Learning



Figure 7: Handcrafting at Jail



Figure 8: Skill Learning



Figure 9: Food Inspection



Figure 10: Food Inspection by Deputy Superintendent

Chapter 3: Methodology

3.1 Study Design

This research is cross-sectional in nature. Data was collected from both primary and secondary sources. Primary data was collected using questionnaire while secondary data was collected from the previous research. This is quantitative research. Finally, data was gathered from the children and women living in the Central Jail, Rawalpindi

3.1.1 Population of the Study

This study targeted children aged 0-72 months. The respondents are mothers of these children who were living at the time of study in Central Jail, Rawalpindi. All the children of aged 0 to 72 months who met the criteria are included in this study.

3.1.2 Study Duration

Study duration was 6 months from September 2022 to February 2023.

3.1.3 Sample Size

There were 76 incarcerated mothers, and 83 children were living in the Central Jail during study. Data was collected from children and mothers living in the Central Jail, Rawalpindi

3.1.4 Sampling Technique

Convenience sampling technique has been used in this study.

3.1.5 Sources of Data Collection

Primary sources of data collection were Researcher Questionnaire and field notes were also made.

3.1.6 Inclusion Criteria

Children who were at the aged 0-72 months at the time of study are included in the study.

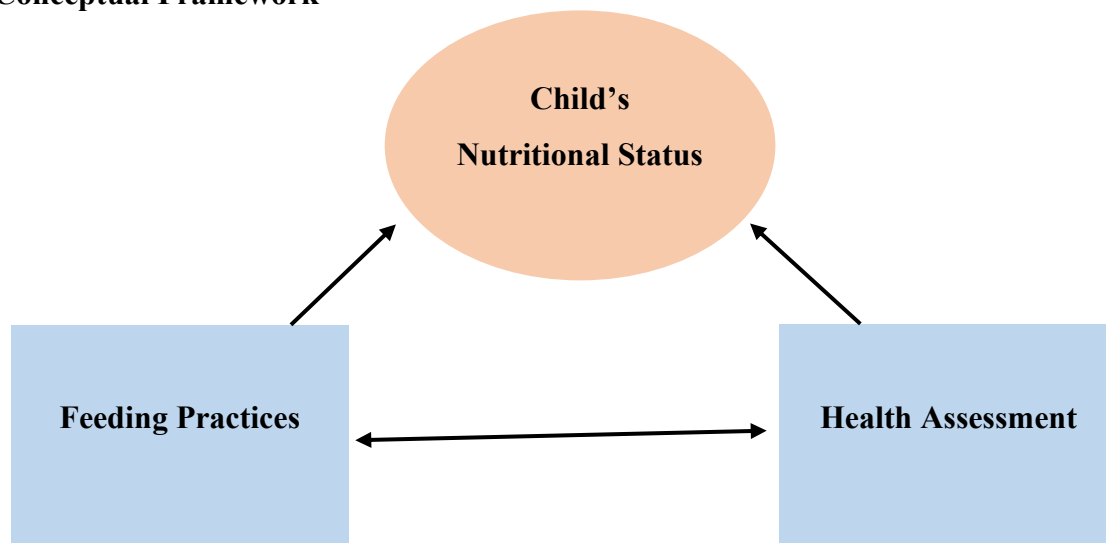
3.1.7 Exclusion Criteria

Children with chronic illnesses like asthma, inflammatory bowel disease and epilepsy or those with physical impairment like Spina Bifida and Limb Deficiencies were excluded.

3.2 Data Collection Procedure

Data was collected from respondents after taking informed consent from them. The researcher visited Central Jail, Rawalpindi in order to book an appointment with the Superintendent of the prison. Survey was conducted by asking them questions from the Questionnaire. This has been done by first making an introduction and then explaining the purpose of the discussion.

3.3 Conceptual Framework



In above mentioned figure, there are variables are given in which Nutritional Status is dependent variable while Feeding practices and Health assessment are the independent variables.

3.4 Data Collection Tool

The main data collection instrument was an interviewer-administered structured questionnaire. It was used to collect socio-demographic information, nutrition status, feeding practices and health assessment data. The questions were set in a logical sequence and were both closed and open-ended.

3.5 Variables

The dependent variable for this study is the "Nutrition Status" of children 6-72 months old. Nutritional status of children less than six months of age was not included in this study because World Health Organization' Growth Standards are not providing protocol for assessing anthropometric index for this age category. Moreover, the nutrition status is based on weight, height, arm circumference, body mass index and head circumference. The independent variables

of this study are Feeding Practices, Health Assessment, and Socio-demographic status of the mothers living in the Central jail.

3.6 Data Analysis

Data analysis was performed by using the software Excel spreadsheet and SPSS. Descriptive statistics, Pearson product moment correlation coefficient have been used to show relationship between continuous variables to establish the relationship among the variables.

3.7 Data Validity

To ascertain validity of the data collected, the questionnaires to be used was pre-tested. Content validity of the questionnaires was established through previous research on this topic.

3.8 Ethical Consideration

- IRB approval was taken from the ethical committee of Al Shifa School of Public Health after synopsis presentation.
- The information collected from the participants has only been used for the purpose of research.
- All the information and data would be kept strictly confidential.
- Permission letter was taken from Authority of Central Jail, Rawalpindi to access the data about incarcerated mothers and their children living in the prison.

Chapter 4: Results

4.1 Socio- demographic characteristics of the mothers

Length of stay in jail (Descriptive Analysis)

	Frequency	Percent
1-2 years	44	53.0
3-4 years	27	32.5
5-6 years	12	14.5
Total	83	100.0

Table 1

The above table shows the frequency and percentage distribution of the "Length of stay in jail", which has three categories: "1-2 years," "3-4 years," and "5-6 years." The table indicates that 53% stayed in jail for 1-2 years, 32.5% stayed for 3-4 years, and 14.5% stayed for 5-6 years.

Cases (Descriptive Analysis)

	Frequency	Percent
Beggar	61	73.5
Section-9B	1	1.2
Section-9C	14	16.9
Section-302	1	1.2
Section-337	1	1.2
Section-363	1	1.2
Section-380	1	1.2
Section-381	3	3.6
Total	83	100.0

Table 2

The above table indicates that 73.5% of the cases are categorized as "Beggar," and 16.9% of the cases belong to Section-9C, while the remaining categories represent only a small proportion.

Occupation (Descriptive Analysis)

	Frequency	Percent
Housewife	5	6.0
Laborer	7	8.4
Office worker	1	1.2
Self-employed	6	7.2
Beggar	61	73.5
Other	3	3.6
Total	83	100.0

Table 3

The above table indicates that the majority of incarcerated mothers are beggars (73.5%), followed by laborers (8.4%) and self-employed individuals (7.2%). Housewives (6.0%) and other occupations (3.6%) were less common.

Mother Age (Descriptive Analysis)

	Frequency	Percent
16-25	9	10.8
26-35	36	43.4
36-45	26	31.3
46-55	12	14.5
Total	83	100.0

Table 4

According to the above table, the majority of mothers were aged between 26-35 years, accounting for 43.4%. The second largest group of mothers was aged between 36-45 years, accounting for 31.3%. Mothers aged 16-25 years accounted for 10.8%, and those aged 46-55 years accounted for 14.5% of the sample.

Marital Status (Descriptive Analysis)

	Frequency	Percent
Married	72	86.7
Divorced	5	6.0
Separated	4	4.8
Widowed	2	2.4
Total	83	100.0

Table 5

According to the above table, the majority of mothers (86.7%) were married. Divorced mothers accounted for 6.0%, followed by separated mothers (4.8%), and widowed mothers (2.4%).

Original Residence (Descriptive Analysis)

	Frequency	Percent
Chiniot	1	1.2
Faisalabad	1	1.2
Gujar Khan	2	2.4
Gujranwala	1	1.2
Islamabad	45	54.2
Mardan	2	2.4
Okara	1	1.2
Peshawar	1	1.2
Rawalpindi	29	34.9
Total	83	100.0

Table 6

The above table describes that the majority of the incarcerated mothers (54.2%) were originally from Islamabad, followed by Rawalpindi (34.9%). Other cities with a relatively small number of incarcerated mothers included Gujar Khan (2.4%), Mardan (2.4%), and Faisalabad (1.2%), among others.

Qualification (Descriptive Analysis)

	Frequency	Percent
Educated	13	15.7
Uneducated	70	84.3
Total	83	100.0

Table 7

The above table indicates that the majority of the incarcerated mothers (84.3%) were uneducated, while only 15.7% were educated.

Child Age (Descriptive Analysis)

	Frequency	Percent
Less than 6 months	8	9.6
6-12 months	34	41.0
13-36 months	27	32.5
37-60 months	11	13.3
61-72 months	3	3.6
Total	83	100.0

Table 8

The above table describes that the majority of children are between 6 to 12 months old (41.0%), followed by children between 13 to 36 months old (32.5%). There are also a significant number of children who are less than 6 months old (9.6%), and children between 37 to 60 months old (13.3%). The smallest group of children is between 61 to 72 months old (3.6%).

Child Gender (Descriptive Analysis)

	Frequency	Percent
Male	39	47.0
Female	44	53.0
Total	83	100.0

Table 9

The above table shows the distribution of child sex among incarcerated mothers. Out of the total 83 children, 47% were male and 53% were female.

4.2 Nutrition Status

Current Weight (Descriptive Analysis)

	Frequency	Percent
Less than 5 kg	11	13.3
5.1-10 kg	52	62.7
10.1-13 kg	11	13.3
13.1-15 kg	7	8.4
15.1-18 kg	2	2.4
Total	83	100.0

Table10

The above table shows the current weight of children who are incarcerated with their mothers. Out of 83 children, 11 (13.3%) have a weight of less than 5 kg, while 52 (62.7%) have a weight between 5-10 kg. Additionally, 11 (13.3%) children have a weight between 10.1-13 kg, 7 (8.4%) have a weight between 13.1-15 kg, and 2 (2.4%) have a weight between 15.1-18 kg.

Birth Weight (Descriptive Analysis)

	Frequency	Percent
Less than 2 kg	55	66.3
2.1-4 kg	26	31.3
More than 4 kg	2	2.4
Total	83	100.0

Table 11

Reference: According to the World Health Organization (WHO) standards on average, the normal birth weight for newborns is considered to be between 2.5 kilograms and 4 kilograms.

The above frequency table shows the birth weight of children who are incarcerated with their mothers. Of the 83 children, 66.3% had a birth weight of less than 3 kg, 31.3% had a birth weight between 3.1 and 4 kg, and only 2.4% had a birth weight of more than 4 kg.

Height of child (Descriptive Analysis)

	Frequency	Percent
Less than 70 cm	33	39.8
71-90 cm	32	38.6
91-100 cm	7	8.4
101-110 cm	9	10.8
More than 110 cm	2	2.4
Total	83	100.0

Table 12

Reference: According to the World Health Organization (WHO) growth standards for children aged Up to 2 years: 45-80 cm and 2 to 5 years: 80-115 cm are normal ranges

The above table indicates the height of children. A total of 83 children were measured. The most common height category was 71-90 cm, with 38.6% of children falling within this range. The next most common category was less than 70 cm, with 39.8% of children falling within this

range. The least common category was more than 110 cm, with only 2.4% of children falling within this range.

Mid-upper arm circumference (Descriptive Analysis)

	Frequency	Percent
Less than 16 cm	2	2.4
16.1-20 cm	68	81.9
20.1-23 cm	10	12.0
More than 23 cm	3	3.6
Total	83	100.0

Table 13

Reference: According to the World Health Organization (WHO) mid-upper arm circumference standards for children aged up to 6 months: 10-13 cm and 6-72 months: 13-24 cm.

The above table shows that the majority of the observations (81.9%) had mid-upper arm circumference measurements between 16.1 and 20 cm. Only a small proportion of the observations (2.4%) had measurements less than 16 cm, and another small proportion (3.6%) had measurements more than 23 cm. There were 10 observations (12.0%) with measurements between 20.1 and 23 cm.

Head Circumference (Descriptive Analysis)

	Frequency	Percent
Less than 50 cm	32	38.6
51-60 cm	37	44.6
61-70 cm	11	13.3
71-80 cm	3	3.6
Total	83	100.0

Table 14

Reference: According to the World Health Organization (WHO) normal Head Circumference of children are 0-6 months: 34-40 cm and 6-72 months: 40-72 cm

The above table shows the head circumference. Of the 83 children included in the study, 38.6% had head circumference less than 50 cm, while 44.6% had head circumference between 51 and 60 cm. About 13.3% of children had head circumference between 61 and 70 cm, and only 3.6% of children had head circumference between 71 and 80 cm.

Body Mass Index BMI (Descriptive Analysis)

	Frequency	Percent
Less than 15 (severely underweight)	2	2.4
15-18.5 (underweight)	8	9.63
18.6-24.9 (normal weight)	73	88
Total	83	100.0

Table 15

The above table shows that 2.4% of the children are severely underweight with a BMI of less than 15, 8% of the children are underweight with a BMI between 15 and 18.5, and 73% of the children have a normal weight with a BMI between 18.6 and 24.9.

4.3 Feeding Practices

Initial feeding from birth to 06 months

	Frequency	Percent
Breast-Feeding	63	75.9
Mix feed	20	24.1
Total	83	100.0

Table 16

The above frequency table shows the distribution of the initial feeding methods of infants born to incarcerated mothers. Out of 83 infants, 63 (75.9%) were breast-fed and 20 (24.1%) received mixed feeding.

Current feeding practice of your child/children

	Frequency	Percent
Exclusive breastfeeding	6	7.2
Mixed feeding	58	69.9
Formula/milk feeding	4	4.8
Complementary feeding	15	18.1
Total	83	100.0

Table 17

The above table shows the current feeding practices of children with incarcerated mothers. A total of 83 children were included in the study. Of these, 7.2% were exclusively breastfed, 69.9% were on mixed feeding, 4.8% were on formula/milk feeding, and 18.1% were on complementary feeding.

Giving child solid food

	Frequency	Percent
Between 4-6 months	6	7.2
Between 6-9 months	53	63.9
Between 9-12 months	24	28.9
Total	83	100.0

Table 18

The above frequency table presents the data on when the children of incarcerated mothers were given solid food. The table shows that 7.2% of the children were given solid food between 4-6 months, 63.9% between 6-9 months, and 28.9% between 9-12 months.

Breastfeeding children

	Frequency	Percent
Never	3	3.6
Rarely (less than once a day)	61	73.5
Occasionally (1-3 times a day)	15	18.1
Frequently (4-6 times a day)	4	4.8
Total	83	100.0

Table 19

The table shows that 73.5% of the respondents rarely breastfeed their children (less than once a day), followed by occasionally (1-3 times a day) at 18.1%, and frequently (4-6 times a day) at 4.8%. Only 3.6% of the respondents never breastfeed their children.

Giving meat

	Frequency	Percent
Never	12	14.5
Rarely (less than once a week)	66	79.5
Occasionally (1-3 times a week)	5	6.0
Total	83	100.0

Table 20

The above table shows the diet of children. Out of the total of 83 respondents, 12 (14.5%) indicated that they never give meat to their children, 66 (79.5%) indicated that they give meat rarely (less than once a week), and 5 (6.0%) indicated that they give meat occasionally (1-3 times a week).

Giving Roti and Salan

	Frequency	Percent
Once a week	2	2.4
2-3 times a week	23	27.7
4-6 times a week	13	15.7
Every day	41	49.4
Not applicable	4	4.8
Total	83	100.0

Table 21

The table shows that 2.4% of children were given Roti and Salan once a week, 27.7% were given it 2-3 times a week, 15.7% were given it 4-6 times a week, and 49.4% were given it every day.

4.4 Health Assessment

Medical checkups in jail

		Frequency	Percent
	Sometimes	21	25.3
	Often	62	74.7
	Total	83	100.0

Table 22

The table shows the medical checkups of children. Out of the 83 responses, 62 children had medical checkups often while 21 had checkups sometimes.

Health problems in the past month

		Frequency	Percent
	Diarrhea	12	14.5
	Pneumonia	2	2.4
	Skin rashes	1	1.2
	Other	68	81.9
	Total	83	100.0

Table 23

The table shows that 14.5% of the children had diarrhea, 2.4% had pneumonia, and 1.2% had skin rashes. The majority of the health problems were categorized as "other health problems" which represent 81.9% of the cases.

Quality and quantity of food in jail

		Frequency	Percent
	Very satisfied	12	14.5
	Satisfied	66	79.5
	Neutral	5	6.0
	Total	83	100.0

Table 24

The above table indicates the quality and quantity of food in jail. Out of the 83 respondents, 12 (14.5%) reported being "very satisfied" with the quality and quantity of food in jail. 66 (79.5%) reported being "satisfied," and 5 (6.0%) were "neutral" on this issue.

Safety and security in jail

	Frequency	Percent
Very satisfied	20	24.1
Satisfied	59	71.1
Neutral	4	4.8
Total	83	100.0

Table 25

The above table indicates safety and security in jail. 24.1% were "very satisfied" with safety and security in jail, while 71.1% were "satisfied." Only 4.8% of the respondents were "neutral" about the safety and security in jail.

4.5 Descriptive Analysis

Descriptive Statistics of All Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Socio Demographical Status	83	1.60	2.70	2.0723	.26241
Nutrition Status	83	1.00	3.83	2.0161	.55620
Feeding Practices	83	2.00	3.25	2.4462	.23976
Health Assessment	83	1.72	2.33	2.0656	.12961
Valid N (listwise)	83				

Table 26

This descriptive table provides a summary of the central tendency and dispersion of four variables. the socio-demographic status variable has 83 valid cases with a minimum value of 1.60, a maximum value of 2.70, a mean of 2.07, and a standard deviation of .262. This means that the average socio-demographic status score is 2.072, and most of the scores fall within .262 units of the mean.

Similarly, the nutrition status variable has 83 valid cases with a minimum value of 1.00, a maximum value of 3.83, a mean of 2.016, and a standard deviation of .556. This indicates that the average nutrition status score is 2.016, and the scores vary more widely than for the socio-demographic status variable, with a standard deviation of .556.

Chapter 5: Discussion

This study aimed to investigate the feeding practices and nutritional status of children incarcerated with their mothers in Central Jail Rawalpindi. In this section, we discuss the socio-demographic characteristics of the mothers, nutrition status, feeding practices and health assessment of the children.

Socio Demographic Characteristics of Mothers

The results showed that the majority of the incarcerated mothers stayed in jail for 1-2 years (53.0%), while 32.5% stayed for 3-4 years, and 14.5% stayed for 5-6 years. This finding is consistent with previous research that reported short periods of incarceration among women in Pakistan (Iqbal et al., 2014). However, longer periods of incarceration can negatively affect maternal health and child development (Leahy, 2018).

Regarding the occupation of the mothers, the majority were categorized as beggars (73.5%). Beggars often have limited access to resources and face multiple challenges in meeting the basic needs of their children, including food and healthcare. Moreover, their low socio-economic status may increase their vulnerability to incarceration (Kiani, 2015).

The age of the mothers ranged from 16 to 55 years, with the majority aged between 26-35 years (43.4%). This finding is consistent with previous studies that reported a higher prevalence of incarceration among young and middle-aged women in Pakistan (Kiani, 2015). However, young mothers may face additional challenges in meeting the nutritional needs of their children, including inadequate knowledge and resources (Leahy et al., 2018).

The majority of the mothers were married (86.7%), followed by divorced (6.0%) and separated (4.8%) mothers. Incarceration can have a significant impact on family dynamics and may lead to separation or divorce. Moreover, the absence of a partner can affect the mother's ability to provide adequate care for their children (Ali, 2017).

Overall, the socio-demographic characteristics of the mothers in this study highlight the multiple challenges faced by incarcerated women and their children in meeting their basic needs, including adequate nutrition. The findings suggest that interventions aimed at improving the nutritional status of incarcerated children should consider the socio-demographic characteristics of the mothers and their specific needs.

Nutrition Status

The study found with the descriptive analysis mentioned in tables that 66.3% of children incarcerated with their mothers in Central Jail Rawalpindi had a birth weight of less than 2 kg, which is lower than the national average in Pakistan. This finding is particularly concerning as low birth weight has been associated with increased morbidity and mortality in infancy and childhood. Several factors may contribute to the low birth weight of these children. First, maternal malnutrition during pregnancy can result in low-birth-weight infants. Mothers who are incarcerated may not have access to adequate nutrition during pregnancy, which could affect fetal growth and development. Second, the high prevalence of maternal illnesses and chronic diseases in jails could also contribute to low birth weight. Third, the stressful environment of the jail may affect maternal health and result in low-birth-weight infants. Addressing these factors could potentially reduce the incidence of low birth weight among infants born to incarcerated mothers.

Feeding Practices:

The study reveals that 75.9% of the infants born to incarcerated mothers were breastfed, which is a positive sign. Breastfeeding provides the necessary nutrients and antibodies to the baby, which helps in strengthening their immune system. However, the current feeding practices show that only 7.2% of the children were exclusively breastfed, and 69.9% were on mixed feeding. Mixed feeding, which involves both breast milk and other foods or fluids, may not provide the necessary nutrients to the child and can have an adverse impact on their growth and development.

The data on when the children were given solid food shows that a majority of the children (63.9%) were given solid food between 6-9 months, which is within the recommended timeframe. However, it is important to note that 7.2% of the children were given solid food before the age of 4 months, which can increase the risk of infections and allergies.

Breastfeeding frequency is also an important factor in ensuring the nutritional status of the child. The study reveals that a majority of the respondents (73.5%) rarely breastfed their children, followed by occasionally (1-3 times a day) at 18.1%, and frequently (4-6 times a day) at 4.8%. It

is important to encourage and educate mothers on the importance of frequent breastfeeding to ensure that their children receive adequate nutrition.

Meat is an important source of protein and other essential nutrients. However, the data reveals that a majority of the respondents (79.5%) give meat rarely (less than once a week) to their children, and only 6.0% give it occasionally (1-3 times a week). This indicates a lack of awareness about the importance of meat in the child's diet.

Roti and Salan are staple foods in the Pakistani diet. The data reveals that a majority of the children (49.4%) were given Roti and Salan every day, which indicates a regular intake of carbohydrates and vegetables. However, it is important to note that 15.7% of the children were given Roti and Salan 4-6 times a week, which may indicate a lack of diversity in their diet.

Overall, the data presented in this study highlights the need for improved feeding practices and increased awareness among incarcerated mothers about the importance of adequate nutrition for their children. By encouraging exclusive breastfeeding, timely introduction of solid food, frequent breastfeeding, and diversifying their children's diet, we can ensure that they grow up healthy and strong.

Health Assessment

The study found that the majority of children had medical checkups often, with 74.7% of the respondents reporting frequent checkups. This is a positive finding as regular medical checkups are essential for ensuring the health and well-being of children.

The study also investigated the health problems that children had experienced in the past month. Diarrhea was the most common health problem, reported by 14.5% of the children, followed by pneumonia and skin rashes. Although these health problems are a matter of concern, it is reassuring that the majority of health problems reported were categorized as "other health problems," which represented 81.9% of the cases. This suggests that the children's health status is generally good.

The quality and quantity of food provided in jail is crucial for ensuring the children's nutritional status. The study found that the majority of the children were satisfied with the quality and quantity of food in jail, with 79.5% of the respondents reporting satisfaction. Additionally,

14.5% of the children reported being "very satisfied" with the food provided, indicating that the food quality and quantity met the needs of the majority of children.

Finally, the study investigated the safety and security of children in jail. The majority of respondents reported being satisfied with the safety and security in jail, with 71.1% of the respondents reporting satisfaction. Additionally, 24.1% of the respondents reported being "very satisfied," indicating that the safety and security of the children in jail was good.

In conclusion, the data presented in this study provides positive insights into the health assessment of children living with their incarcerated mothers in Central Jail Rawalpindi. The findings suggest that the children generally receive adequate medical care, and the majority of the children are in good health. The quality and quantity of food provided in jail also meet the needs of most children, and safety and security in jail are generally satisfactory. These findings highlight the importance of continued efforts to ensure the health and well-being of children living in jails with their mothers.



Figure 11: Front Look of Jail

Chapter 6: Conclusion & Recommendations

6.1 Conclusion

This study highlights the nutritional challenges faced by children incarcerated with their mothers in Central Jail Rawalpindi. The high prevalence of low birth weight among infants born to incarcerated mothers and the suboptimal feeding practices of the children indicate a need for interventions aimed at improving the nutritional status of this population. The findings suggest 73% women belongs to low socioeconomic status. They delivered low birth weight babies. The percentage is 66% which is very high and reflect their poverty, poor education, unhealthy lifestyle, poor antenatal care and improper diet. When babies are given care inside the jail, both the mother and child give proper medical care, nutrition, good hygiene, clean water and sanitations. The health of the pregnant women, mother and children improve significantly. that efforts should be made to increase access to adequate nutrition for pregnant and lactating mothers in jails, promote exclusive and frequent breastfeeding, increase awareness about the importance of meat in the child's diet, and monitor and regulate feeding practices.

The study shows that 95% women feel safe and secure inside the jail, 88% children's BMI and weight fall within normal range due to special diet (given as per jail menu) regularly vaccination as per EPI schedule and proper drinking water and sanitation.

Moreover, 14.5% of children suffered from diarrhea and 2.4% had pneumonia. This data shows that in general population pneumonia and diarrhea are the leading cause of death whereas children living inside the jail had lowest frequency of it. Which again supports the 'WASH' criteria that is strictly practiced in the jail.

The clean environment, breast feeding practices, proper nutrition, regular checkups are the key factors that keep the children healthy inside the jail. In the same way, 74.7% children availed the facility of medical checkups often and 25.3% availed the facility sometimes which is another a landmark that support the evidence that children living inside the jail had the highest regular checkups. In the jail, 24 hours medical facilities are available. Furthermore, medical consultants from teaching hospital visit the prison on weekly basis. Medicines are also available in the jail. There is also a proper sanitation and hygiene facilities in the jail. Prisoners get sanitation packs which consist of soap, toothbrush, toothpaste, hair comb, etc.

As per jail menu the inmates are given meat once every day, 7 days a week, remaining also include pulses, vegetables, eggs, milk, fruit and desserts. Food provided to prisoners in proper food channel.

Furthermore, prisoners get proper summer and winter clothes and also, they provided the blankets, air coolers and geysers in relative season.

Likewise other facilities, children also get education from qualified teachers by WAT. Moreover, female Quran teacher also teaches Quran in the jail.

Additionally, interventions should be tailored to the specific needs of incarcerated women and their children.

شمار	ایام	ناشتہ	دوپہر کا کھانا	شام کا کھانا	شمار	ایام	ناشتہ	دوپہر کا کھانا	شام کا کھانا
01	سوموار	روٹی چائے آلو کی بھجیا	گوشت مرغ سفید چنے روٹی	سبزی روٹی	01	سوموار	روٹی چائے آلو کی بھجیا	گوشت مرغ سفید چنے روٹی	سبزی روٹی
02	منگل	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	گوشت مرغ روٹی	02	منگل	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	گوشت مرغ روٹی
03	بدھ	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	گوشت مرغ آلو روٹی	03	بدھ	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	گوشت مرغ آلو روٹی
04	جمعرات	روٹی چائے آلو کی بھجیا	گوشت مرغ سفید چنے روٹی	سبزی روٹی	04	جمعرات	روٹی چائے آلو کی بھجیا	گوشت مرغ سفید چنے روٹی	سبزی روٹی
05	جمعہ	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	گوشت مرغ روٹی	05	جمعہ	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	گوشت مرغ روٹی
06	ہفتہ	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	سبزی روٹی	06	ہفتہ	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	سبزی روٹی
07	اتوار	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	لوبیہ روٹی	07	اتوار	روٹی چائے کھجور	گوشت مرغ سفید چنے روٹی	لوبیہ روٹی

Figure 12: Food Distribution Schedule

MEDICAL FACILITIES



Detail of Medical Treatment during last 01 year

	Examined
19.01.2023, Medical camp organized with the help of Prof. Dr. Muhammad Umar Sb VC of RMU (41 Specialist Drs. Participated)	1257
Medical camps arranged on 06.01.23, 29.12.22, 10.11.22, 31.10.22	1024
Weekly Visits of Specialists Drs. of allied Hospitals of RWP & ICT	3972
OPD basis in Jail Hospital	177752
Special Diet issued to patient prisoners	297
Checked by psychiatrists / psychologists Since 03.11.2022,	274
<ul style="list-style-type: none"> ▪ 80 Bedded hospital available & 20 bedded hospital for drug addicts is under construction ▪ Appointment of a female psychologist in the juvenile barrack for daily counseling, profiling and rehabilitation of Juvenile inmates ▪ 02 Ambulances available for shifting of Prisoners to outside Hospitals & 01 Ambulance for inside shifting 	

17

Figure 13: Medical Facilities at Jail

VISITS OF DIGNITARIES DURING LAST 04 MONTHS



Dignitary	No. of Visits
The Hon'ble Chief Justice of Islamabad High Court, Islamabad	02
District & Session Judge / Additional Session Judge East Islamabad	10
District & Session Judge / Additional Session Judge West Islamabad	10
District & Session Judge / Additional Session Judge Rawalpindi	09
Justice (R) Sagheer Ahmed Qadri (Member Oversight Committee)	02
Professor Muhammad Umar, VC RMU, Rawalpindi	01
National Human Rights Commission	03
Sec. Ministry of Human Rights	01
Chief Minister Inspection Team	02
Inspector General of Prisons Punjab	04
Deputy Inspector General, Rawalpindi Region Rawalpindi	16
Total	60

23

Figure 14: Monitoring in Jail

6.2 Recommendations

Based on the findings of this study, the following recommendations are suggested:

1. **Increase access to adequate nutrition:** Given the high prevalence of low birth weight among infants born to incarcerated mothers, there is a need to increase access to adequate nutrition for pregnant and lactating mothers in jails. This can be achieved by providing nutritional supplements and ensuring that nutritious food is available in the jail. Additionally, efforts should be made to ensure that mothers have access to clean drinking water and hygienic food preparation facilities.
2. **Promote exclusive breastfeeding:** To improve the nutritional status of infants born to incarcerated mothers, it is important to promote exclusive breastfeeding for the first six months of life. This can be achieved by providing education and counseling to mothers on the benefits of exclusive breastfeeding and providing them with support to initiate and maintain breastfeeding.
3. **Encourage frequent breastfeeding:** In addition to promoting exclusive breastfeeding, efforts should also be made to encourage frequent breastfeeding. Mothers should be educated on the importance of frequent breastfeeding (at least 8-12 times a day) to ensure that their children receive adequate nutrition.
4. **Increase awareness about the importance of meat in the child's diet:** Meat is an important source of protein and other essential nutrients. Therefore, efforts should be made to increase awareness among mothers about the importance of including meat in their child's diet. This can be achieved through educational campaigns and counseling sessions.
5. **Monitor and regulate feeding practices:** The data on feeding practices revealed that a significant proportion of children were given solid food before the recommended age and were on mixed feeding. Therefore, it is recommended that feeding practices be monitored and regulated to ensure that children receive adequate nutrition.
6. **Develop interventions tailored to the specific needs of incarcerated women and their children:** The socio-demographic characteristics of the mothers in this study highlight the multiple challenges faced by incarcerated women and their children in meeting their basic needs, including adequate nutrition. Therefore, interventions aimed at improving

the nutritional status of incarcerated children should consider the specific needs of this population.

6.3 Future Suggestions

Further research is needed to explore the nutritional challenges faced by incarcerated women and their children in other parts of Pakistan. In addition, future research should focus on the effectiveness of nutrition education programs and interventions aimed at improving the nutritional status of incarcerated children. Longitudinal studies are needed to examine the long-term impact of incarceration on maternal and child health outcomes.

References

- Abdul-Fadl, A. A. (2005). The psychosocial benefits of continued breastfeeding into second year of mother and child. *Int. J. Ch. Neuropsychiatry*, 143-153.
- Ali, T. S. (2017). Street begging and its social and health implications for Pakistani society. *Social science & medicine*, 177-184.
- Bailey, S. M. (2017). Nutrition and maternal incarceration: A systematic review. *Journal of Women's Health*, 563-74.
- Bastick, M. (2008). *Women in prison: a commentary on the Standard Minimum Rules for the treatment of prisoners*. UK: Human Rights Press.
- Bhan, R. (2010). Complementary Feeding. *Indian Journal for the Practicing Doctor*.
- Cai, X. W. (2012). Global trends in exclusive breastfeeding. *International Breastfeeding Journal*, 2006.
- CG, V. (2010). Worldwide timing of growth faltering: revisiting implications for interventions. *Paediatrics*.
- Chudasama, R. K. (2009). Prevalence of exclusive breastfeeding and its determinants in first 6 months of life: A prospective study. *Journal of Health Allied Sciences*, 3.
- Cruz Agudo Y, J. A. (2010). Breastfeeding, complimentary feeding practices and childhood malnutrition in the Bolivian Andes. *Arch Latinoam Nutrition*, 7-14.
- Dabbagh, A. (2015). The impact of maternal incarceration on child health and development. *International Journal of Prison Health*.
- DJP, B. (1998). Mothers, babies, and health in later life. *Elsevier Health Sciences*.
- Edmond K., Z. C. (2006). Delayed breastfeeding initiation increases risk of neonatal mortality. *Nutrition Journal*, 380.
- Ferrara. (2006). Mothers with their babies in prison. *the first Italian experience*.
- Geller, A. C.-S. (2012). Beyond absenteeism: Father incarceration and its effects on children's food insecurity. *Social Science & Medicine*, 1816-1822.

- Goossens, K., & Haegeman, A. (2022). Exploring the microbial composition of Holstein Friesian and Belgian Blue colostrum in relation to the transfer of passive immunity. *Journal of Dairy Science*, 7623-7641.
- Grantham-McGregor. (2007). Developmental potential in the first 5 years for children in developing countries. *The Lancet*.
- Green, A. E. (2019). The Impact of Racism on Child and Adolescent Health. *Pediatrics*.
- Kiani, A. (2015). Female prisoners in Pakistan: A critical analysis of socio-economic and political factors. *Pakistan Journal of Criminology*, 1-16.
- Leahy, K. E. (2018). Feeding Infants and Toddlers: Strategies for Promoting Health and Preventing Obesity. *Journal of Pediatric Health Care*.
- Lee, R. D. (2018). The impact of parental incarceration on the physical and mental health of young adults. *Pediatrics*, 162-178.
- Liu, J. (2015). The impact of maternal incarceration on children's health and wellbeing: A systematic review. *Children and Youth Services Review*, 1-9.
- Manesh, A. (2008). Accuracy of child morbidity data in demographic and health surveys. *International Journal of Epidemiology*.
- MOHR. (2020). *Plight of women in prisons of Pakistan*.
- Mumtaz, F. (2018). Neurobiology and consequences of social isolation stress in animal model-A comprehensive review. *National Library of Science*, 1205-19.
- Oche M.O., U. A. (2011). Mothers, breastfeeding, knowledge & practice. *African Health Sciences*, 518-523.
- PDHS. (2018). *Pakistan Demographic and Health Survey 2017–18*. Islamabad, Pakistan and Rockville, Maryland, USA: National Institute of Population Studies (NIPS) [Pakistan] and ICF.
- Prisons Punjab. (2022). *Central Jail, Rawalpindi*. Retrieved from Punjab Prisons: https://prisons.punjab.gov.pk/central_jail_rawalpindi

- Quilty S. (2004). Children of prisoners: a growing public health problems. *N Z J Public Health*.
- R., K. M. (2004). The optimal duration of exclusive breastfeeding a systematic review. *Advanced Experimental Medical Biology*, 63-77.
- Report. (2013). *National Institute of Population Studies (NIPS) [Pakistan] and ICF International: Pakistan Demographic and Health Survey 2012-13*. Islamabad Pakistan, and Calverton, Maryland, USA: NIPS and ICF International.
- Report, U. (2013). *COMPLEMENTARY FEEDING PRACTICES IN PAKISTAN: AN IN-DEPTH ANALYSIS OF PDHS 2012-13*. Islamabad: National Institute of Population Studies NIPS.
- Roberts, J. V. (2017). *The health consequences of maternal incarceration*. In J. V. Roberts (Ed. New York: Health and Incarceration .
- Rosemary Mhlanga-Gunda, S. K. (2020). Prison conditions and standards of health care for women and their children incarcerated in Zimbabwean prisons. *International Journal of Prisoner Health*.
- Santiago, S. (2018). Ultra-processed foods consumption among inmates in a women's prison in São Paulo, Brazil. *National Library of Medicines*.
- Schwalberg. (2013). *Maternal and Child Health: Programs, Problems, and Policy in Public Health*.
- Seena Fazel, J. B. (2018). The health of prisoners. *National Library of Medicine*, 61053-7.
- Smith, H. J. (2012). Relative Deprivation: A Theoretical and Meta-Analytic Review. *Personality and Social Psychology Review*, 203-32.
- UNICEF. (2015). *Monitoring the Situation of Children and Women by WHO*.
- WHO. (2015). *Exclusive breastfeeding* . Retrieved from World Health Organization: http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/
- WHO. (2018). *Breastfeeding Report*. Geneva: World Health Organization.
- WHO, R. (2017). *Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals*.

WHO, U. U. (2010). *Indicators for assessing infant and young child feeding practices*.

WHO. (2010). *Report on Nutritions of Children Living in the Prisons*.

Wilde, E. (2015). *The impact of maternal incarceration on children and families*. Oxford, UK:
Oxford University Press.

Appendix A: Structured Questionnaire

Some of the variables and items of this questionnaire were borrowed from previous research of Makau Mary Ndanu.

SECTION 1: DEMOGRAPHIC INFORMATION:

Mother ID _____

Mother Name _____

Length of stay in jail: (1) 1-2 years (2) 3-4 years (3) 5-6 years

Case _____

Occupation: (1) Housewife (2) Laborer (3) Office worker

 (4) Self-employed (5) Other

Age: (1) 16-25 (2) 26-35 (3) 36-45 (4) 46-55

Marital status: (1) Married (2) Divorced (3) Separated (4) Widowed

Married for years _____ **No of Children** _____

Original Residence: _____

Qualification: (1) Educated: Class _____ (2) Uneducated

Child ID _____

Child Name _____

Age in months: _____

Child Sex: (1) Male (2) Female

Place of Birth _____

SECTION 2: CHILDREN QUESTIONS

A. NUTRITION STATUS

1. Current Weight: (1)Less than 2.5 kg (2)2.5-5 kg (3)3.6-5kg

(4)5.1-13 kg (5)13.1-15 kg (6)More than 15.0 kg

2. Birth Weight (1)Less than 2 kg (2)2-4 kg (3)More than 4 kg

3. Height: _____ cm

4. Head circumference: _____ cm

5. Mid-upper arm circumference: _____ cm

6. Body Mass Index (BMI): _____

B. FEEDING PRACTICES

7. Initial feeding from birth to 06 months?

(1) Breast-Feeding (2) Bottle-Feeding (3) Animal Milk

(4) Mix feed (Bottle Plus Mother)

8. Does your child started solid at 06 months?

(1) Yes (2) No

9. What is the current feeding practice of your child/children?

(1) Exclusive breastfeeding (2) Mixed feeding (breast milk and formula/milk)

(3) Formula/milk feeding (4) Complementary feeding (solid/semi-solid food)

10. How often do you breastfeed your child?

- (1) Never (2) Rarely (less than once a day) (3) Occasionally (1-3 times a day)
(4) Frequently (4-6 times a day) (5) Very frequently (more than 6 times a day)

11. When did you start giving your child solid food?

- (1) Before 4 months (2) Between 4-6 months (3) Between 6-9 months
(4) Between 9-12 months (5) After 12 months

12. How many times you have got your child checkup from Child Specialist in Jail?

- (1) Every month (2) Once in 06 months (3) Thrice in a year (4) Never

13. Has your child ever been given multivitamin advised by your Dr in Jail?

- (1) Yes (2) No

14. How often do you give your child animal milk?

- (1) Less than once a week (2) Once a week (3) Two to three times a week
(4) Four to six times a week (5) Every day (6) Not applicable

15. How often do you give your child meat?

- (1) Never (2) Rarely (less than once a week) (3) Occasionally (1-3 times a week)
(4) Frequently (4-6 times a week) (5) Very frequently (more than 6 times a week)

16. How often do you give your child fruits and vegetables?

- (1) Less than once a week (2) Once a week (3) Two to three times a week
(4) Four to six times a week (5) Every day (6) Not applicable

17. How often do you give your child Roti and Salan?

- (1) Less than once a week (2) Once a week (3) Two to three times a week
(4) Four to six times a week (5) Every day (6) Not applicable

18. How often do you give your Biscuits/Sweets/Lays?

- (1) Less than once a week (2) Once a week (3) Two to three times a week
(4) Four to six times a week (5) Every day (6) Not applicable

C. HEALTH ASSESSMENT

19. Has child received vaccine?

- (1) Yes (2) No

20. Do you have a vaccination card?

- (1) Yes (2) No

21. Have you ever been given special diet or special care during pregnancy in Central Jail?

- (1) Yes (2) No

22. Vaccination is Up to date as per EPI Card?

- (1) Yes (2) No

23. Your child's current Hb: (1) Less than 11 g/dL (2) 11-12 g/dL

(3)12-13 g/dL (4)13-14 g/dL (5)Greater than 14 g/dL (6) Not applicable

24. Serum Albumin _____

25. Has your child ever been diagnosed with anemia?

(1) Yes (2) No

If yes, then Anemia status _____

26. Has your child ever been transfused Blood or Given VenoferInj?

(1) Yes (2) No

27. Has your child experienced any of the following health problems in the past month?

(1) Diarrhea (2) Measles (3) Pneumonia (4) Skin rashes (5) other

28. Has your child ever been hospitalized due to a health issue?

(1) Yes (2) No

If yes what was the reason? _____

29. Does your child receive any oral nutritional supplements (e.g., vitamins, minerals) while in jail?

(1) Yes (2) No

30. Have you received any information or Health education on proper nutrition for your child by the Jail doctor?

(1) regularly (2) often (3) never

31. Have you noticed any weight loss or weight gain in your child in the last three months?

(1) Yes, weight loss (2) Yes, weight gain (3) No

32. How satisfied are you with the quality and quantity of food provided to you and your child in jail?

(1) Very satisfied (2) Satisfied (3) Neutral (4) Dissatisfied (5) Very dissatisfied

33. How often does your child receive medical checkups in jail?

(1) Never (2) Rarely (3) Sometimes (4) Often (5) Regularly

34. How often does your child weigh is done?

(1) Never (2) Rarely (3) Sometimes (4) Often (5) Regularly

35. How satisfied are you with the safety and security provided to you and your child in jail?

(1) Very satisfied (2) Satisfied (3) Neutral (4) Dissatisfied (5) Very dissatisfied

36. How many times a day your child is provided with a food in a day?

(1) One time (2) Two times (3) Three times (4) Four times

Appendix B: Consent Form

I have read and understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this consent form. I voluntarily agree to take part in this study.

Name of Participant _____

Signature/Thumb of Participant _____

Date _____

Appendix C: IRB Form



AL-SHIFA SCHOOL OF PUBLIC HEALTH

PAKISTAN INSTITUTE OF OPHTHALMOLOGY

AL-SHIFA TRUST, RAWALPINDI

MSPH-IRB/14-34

2022

TO WHOM IT MAY CONCERN

This is to certify that **Faria Munawar** D/O **Syed Munawar Hussain Shah** is a student of Master of Science in Public Health (MSPH) final semester at Al- Shifa School of Public Health, TIS, Al-Shifa Trust Rawalpindi. He/she has to conduct a research project as part of curriculum & compulsory requirement for the award of degree by the Quaid-i-Azam University, Islamabad. Her research topic which has already been approved by the Institutional Review Board (IRB) is "**Assessment of feeding practices and nutritional status of children under 06 years incarcerated with mothers in Central Jail, Rawalpindi**".

Please provide her necessary help and support in completion of the research project. Thank you.

Sincerely,

Dr. Ayesha Babar Kawish

Head

Al-Shifa School of Public Health, PIO

Al-Shifa Trust, Rawalpindi

AL-SHIFA TRUST, JHELM ROAD, RAWALPINDI-PAKISTAN

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Appendix D: Gantt Chart

Activities	Sep 2202	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023
Synopsis writing & IRB approval							
Literature Review							
Pilot Testing							
Data Collection & Entry							
Data Analysis							
Write-up							
Thesis Submission							

Appendix E: Budget

Budget Item	Transport (Rupees)	Stationary (Rupees)	Printing (Rupees)	Publishing (Rupees)
Pilot Testing	1000	5000	3000	-
Data Collection	12000	8000	-	-
Thesis Write up	2000	6000	5000	7000
Total Expenditure	15000	19000	8000	7000
Grand Total	49,000			