# INTEGRATION OF A MATERNAL PSYCHOSOCIAL WELL-BEING COMPONENT INTO AN EARLY CHILD-DEVELOPMENT INTERVENTION

Thesis submitted in accordance with the requirements for the degree of Doctor in Philosophy

By

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## Acknowledgement

# Declaration

I declare that the work presented in this thesis, which was conducted at Human development Research Foundation, Pakistan, is my own, and has not been accepted in any previous application for a degree. All sources of information have been specifically acknowledged.

This thesis is submitted in accordance with the requirements of the University of

Liverpool for the degree of Doctor of Philosophy.

Work in this thesis is based on data collected by the researcher as part of the SPRING trial, which is funded by Wellcome Trust. Part of the work conducted by researchers of the Thinking Healthy Programme, is included in chapter 9, after taking formal permission from the authors.

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# Abbreviations

| | |
|---|---|
| AKUAD | Agha Khan University Antenatal Depression Sca |
| BHU | Basic Health Unit |
| CBT | Cognitive Behavioural Therapy |
| CESD | Center for Epidemiologic Studies Depression Scale |
| CHW | Community Health Workers |
| CI | Confidence Interval |
| CMD | Common Mental Disorders |
| CPMD | Common Peri-natal Mental Disorders |
| DALYs | Disability Adjusted Life Years |
| ECD | Early Child Development |
| EPDS | Edinburgh Postnatal Depression Scale |
| FGD | Focus Group Discussion |
| HADS | Hospital Anxiety and Depression Scale |
| HDRF | Human Development Research Department |
| ICD-10 | International Statistical Classification of Diseases-10th revision |
| IDI | In-Depth Interview |
| LHS | Lady Health Supervisor |
| LHW | Lady Health Workers |

| | |
|---|---|
| LMICs | Low and Middle Income Countries |
| MCH | Maternal and Child Health |
| MPW | Maternal Psychosocial Wellbeing |
| MRC | Medical Research Council |
| OR | Odds Ratio |
| PREMIUM | Program for Mental Health Interventions for Under-resourced Health systems |
| RE-AIM | Reach, Effectiveness, Adoption, Implementation, Maintenance |
| SCAN | Schedules for Clinical Assessment in Neuropsychiatry |
| SES | Socio-Economic Status |
| SPRING | Sustained Programme Incorporating Nutrition and Games |
| SRQ | Self Reporting Questionnaire |
| THP | Thinking Healthy Programme |

# Abstract

Maternal psychosocial well-being (MPW) is a comprehensive concept that covers the psychological (e.g., depression, distress, anxiety, coping, mental health,) and social (e.g., family and community support, empowerment, relationships, culture) aspects of motherhood. High rates of poor maternal mental health, with maternal depression the most prevalent condition, have been reported in the low and middle income countries, including Pakistan. Though evidence based interventions exist to address maternal depression, these have not been translated into policy because of various implementation barriers. Integration of these interventions into existing maternal and child health (MCH) programmes has been suggested as a strategy to provide accessible care to mothers.

In the current study we developed and integrated a cognitive behavioural therapy–based MPW intervention (the 5 pillars approach) into a child nutrition and development program. Following qualitative research with community health workers (CHWs) and families, CHWs were trained in (1) empathic listening, (2) family engagement, (3) guided discovery using pictures, (4) behavioural activation, and (5) problem solving. A qualitative feasibility study in one area demonstrated that CHWs were able to apply these skills effectively to their work, and the approach was found to be useful by CHWs and mothers. This work provides vital information on the lessons learnt in the implementation of a maternal psychosocial wellbeing intervention for universal use. The facilitating factors included mothers being the central focus of the intervention, utilizing existing local CHWs whom the mothers trust, simple training and regular supervision, and an approach that facilitates, and does not add, to the CHWs' work.

# 1. Chapter One: An Overview

This chapter describes the background to the work leading up to this PhD thesis. It charts the author's journey of 'crossing over', from clinical obstetrics to public mental health, and then into the area of maternal psychosocial well-being. It summarizes the key influences and collaborations that shaped the project, and contributed to the theoretical and methodological underpinnings of this research. Finally, a overview is presented, which, hopefully, will provide a useful guide for navigating the thesis.

## 1.1. The journey

The author qualified in medicine from Rawalpindi Medical College, the University of Punjab, in Pakistan, in 1987, and following her clinical training, gained postgraduate qualifications in Obstetrics and Gynaecology from the College of Physicians and Surgeons of Pakistan in 1998. This was followed by a very busy and productive two decades in which the author practiced gynaecology and obstetrics at teaching hospitals in Rawalpindi and Islamabad. This was combined with a fruitful teaching role – the author was involved in teaching and training both undergraduate and postgraduate students.

The author's interest in public health grew out of her work with the Health Services Academy in Islamabad – Pakistan's leading Public Health Institute – and the Child Advocacy International, a Non Governmental Organization, which provided training to primary, secondary and tertiary care staff in handling maternal and child emergencies. In 2006, the author completed a Diploma in Epidemiology from the London School of Hygiene and Tropical Medicine.

The author's interest in the mental health of women goes back to her clinical years in obstetrics, where, in the course of her clinical practice, found many women to suffer from anxiety or depression in the perinatal period. Working in urban tertiary level facilities, she was able to discuss these cases with colleagues in the Psychiatry department, and in most cases refer them. Her public health work enabled her to take part in studies where depression was measured in rural communities. These studies showed that over a quarter of women suffered from the condition, and had no access

to services. The author found that this was not only causing immense suffering to the depressed women, but also had a negative impact on their infants' development and health. The author became interested in psychosocial interventions that could be delivered by non-specialists in primary care settings.

Since 2007, the author had been conducting collaborative research with the Human Development Research Foundation, a research non-governmental organization based in Islamabad, Pakistan, specializing in psychosocial research, especially the development and evaluation of community-based mental health interventions for women and children. It was here that she found an opportunity to work with a team developing a universal intervention that could be delivered by community health workers, to help improve the psychosocial well-being of mothers, and the development of their infants.

In 2010, she was awarded a Studentship by the University of Liverpool to undertake a PhD in this area, allowing her to systematically study and contribute to this neglected area of research. In May 2012, the author was appointed as Director of the newly established Centre for Maternal and Child Health Research at the Health Services Academy, with the remit to promote research in this area. Her key interest remains maternal psychosocial wellbeing.

The journey continues – and it is a source of great encouragement for the author that her area of research has begun to receive attention. Following the completion of her fieldwork, the author was invited, all expenses paid, by the New York Academy of Sciences to present her work at an Experts Meeting in New York in April 2013. The work was well received, and she was commissioned by the Annals of New York Academy of Sciences to write a paper on her work, which was published in the 2014 special theme issue of the journal, and is attached as Appendix 1.

## 1.2. Implementation challenges to maternal mental health

The area of this work is maternal mental health, with a focus on common mental disorder (anxiety and depression) that is both the most highly prevalent condition and carries the greatest public health burden (1). In the last decade, there have been a number of studies that demonstrate positive effects of non-specialist delivered

interventions on maternal mental health (2). However, in low-income settings, key barriers to scale-up (3) remain a) the prevailing public-health priority agenda and its effect on funding; b) the complexity of and resistance to decentralization of mental health services; c) challenges to implementation of mental health care in primary-care settings; d) the low numbers and few types of workers who are trained and supervised in mental health care; and e) the frequent scarcity of public-health perspectives in mental health leadership.

Thus, even when effective interventions are present; their implementation at scale remains a challenge. This calls for a different applied approach to research – one that utilizes various methodologies to meet the implementation challenges enumerated above. Called Implementation Science or Health Services Research, this relatively new discipline in global mental health seeks to ''*...investigate and address major bottlenecks (e.g. social, behavioural, economic, management) that impede effective implementation; and tests new approaches to improve health programming....'(NIH),*http://www.fic.nih.gov/researchtopics/pages/implementations cience.aspx.

It is essential to understand the development and evaluation of complex interventions in order to improve health and healthcare. This has been attempted by various researchers and one way is to use theoretical frameworks for the purpose of clarity and a number of such frameworks have been mentioned in the literature (4, 5). About a decade ago, the Medical Research Council (MRC) published its highly influential framework (6) for developing and evaluating interventions that are built up from a number of components, which may act both independently and inter-dependently. The MRC framework (6) has been extended and refined since then with emphasize on facts that the early phases of a trial should be seen as iterative rather than linear; that both intervention development and evaluation require a strong theoretical foundation and that detailed descriptions of the intervention and the context of the evaluation are needed. It also brings out the importance of modelling to estimate the potential benefits before proceeding to a trial and the fact that qualitative methods can assist with understanding the processes involved in the intervention and evaluation (7).

The MRC framework has proved invaluable for health service researchers, but a number of problems still remain in the design and conduct of complex interventions. Recruitment in the trials and wide gap between research evidence and practice were identified as major issues by researchers (8).

Normalization Process Theory (NPT) (8, 9) is another attempt to identify a framework for explaining the complex interventions. It identifies factors that promote and inhibit the routine incorporation of complex interventions into everyday practice. NPT explains that how interventions work and look at early implementation but also beyond when an intervention actually embeds into routine practice that it 'disappears' from view (i.e., it is normalized). It is important to realize that "normalization" may not be an ideal outcome for every complex intervention. The NPT framework focuses on the work that individuals and groups do to enable an intervention to become normalized. NPT is a new theory which offers a consistent framework for the researcher to judge implementation potential of a trial but also to improve and develop a more effective intervention.

A number of other attempts have also been made to utilize new approaches for analyzing and developing complex interventions (10). Each of these had its own advantages and limitations. Every intervention could be fitted into one or more frameworks but with an objective to improve the potential and better understand the impact of the trial. However, in the context of SPRING trial, the MRC framework was the best fit for my study.

In the field of maternal mental health, a key strategy that could address the implementation challenge is integration of maternal mental health into the routine work of health workers involved in delivering general maternal and child health care (1). The World Health Organization's Eastern Mediterranean Regional Office (EMRO) of which Pakistan is a member, have recently adopted this integration strategy in their Regional Framework for Mental Health (2014 to 2024). The Framework describes a number of advantages to using this approach:

1) Integrated management programmes in which health and social care providers are supported to treat common mental health problems propose a chance to treat 'the patient as a whole', a strategy that is more patient-centred

and effective than an approach in which physical, mental and reproductive health issues are each addressed in a different 'silos' without effective communication between providers (1,2). Maternal and child health workers are best suited and placed to adopt natural approaches to care, predominantly important for children whose psychosocial wellbeing is closely linked to that of parents. These workers respond better to the specific requirements of local communities and have knowledge of community resources and health, social and education services.

2) Integrated care programs that can help address maternal and child mental health needs, while staying in the MCH care settings are often more acceptable to patients and family members who are anxious about the stigma associated with mental disorders, and the mental health treatment settings.

3) MCH integration is suitable to taking into account the mental health needs across the life course. The MCH workers can establish trusting and long-term relationships with children and families and prevent mental health problems by educating about healthy lifestyles, and offering early diagnosis and timely preventive as well as curative interventions for common behavioural, emotional and social problems in mothers and children.

4) MCH programmes also benefit from integrating mental health care. For example, treating maternal depression can improve the overall capacity of mothers. They become more receptive to MCH messages, have improved ability to care for their children, and hence improve the mother-infant interaction.

Such an integrated approach to intervention means that the intervention will be complex (i.e., consisting of many integrated components working in tandem). Development and evaluation of complex interventions poses challenges to the researcher. Interventions have to be adapted to 'fit' both into existing programmes, as well as systems. These have to be acceptable to both the recipients as well as the delivery agent. This would essentially require both formative, or developmental, research, and testing for feasibility prior to large-scale evaluation or implementation. Current approaches to developing and evaluation complex interventions are summarized below in sections 1.3 and 1.4.

Before I discuss the key influences shaping this research, I would like to summarize my work in a flow diagram to help visualize the different components of my study and how they fit together.
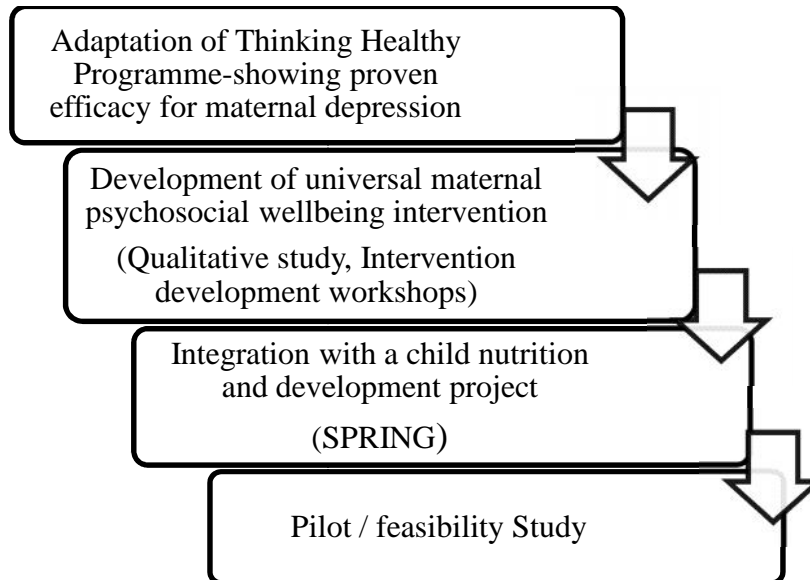


**FIGURE 1: COMPONENTS OF PHD STUDY**

## 1.3. Key influences shaping this research

### 1.3.1. The Thinking Healthy Programme –the theoretical basis for the proposed intervention

The Thinking Healthy Program (THP) is an evidence-based, feasible and acceptable intervention developed for maternal depression for low income rural setting in Pakistan. THP formed the theoretical basis for the maternal psychosocial well-being intervention developed in this project (11). THP is derived from a psychotherapeutic approach - cognitive behavioural therapy (CBT). CBT, is an evidence-based form of talking therapy that is based on the principle that emotions and behaviours can be altered for the better by identifying and shifting negative thoughts (12). It is a structured dialogue between the therapist and client that aims to alter the cycle of

unhelpful or non-healthy negative thoughts (cognitions) and thus influencing undesirable actions (behaviour).

CBT has been used for a variety of psychological disorders, such as anxiety and depression, post traumatic stress disorder (13) and also for problems such as marital distress (14). THP adapted and simplified the techniques of CBT so that these could be used by non-specialists like the community health workers working with women suffering from perinatal depression in rural Pakistan. The intervention comprised of 16 home-delivered individual sessions (weekly sessions in the 9th month of pregnancy, three fortnightly sessions in the first postnatal month, and nine monthly sessions there-after). THP is described in more detail in section 5.3.

THP was a targeted intervention for women suffering from perinatal depression. The author's aim in this project was to adapt the THP so it could be delivered as a *universal* intervention to all women living in conditions of psychosocial adversity. She also aimed to integrate the intervention into a child nutrition and development programme and evaluate its acceptability and usefulness through a feasibility study.

### 1.3.2.  The MRC Guidelines for evaluation and development of complex interventions and the PREMIUM Project – providing the methodological framework for the research

As discussed above, development and evaluation of complex interventions require approaches that go beyond conventional studies, and use a more applied methodology. The current study follows the UK's Medical Research Council (MRC) guidelines, which stipulate that complex interventions work best if tailored to local circumstances rather than being completely standardised, and that it is useful to think of evaluation in terms of phases, which in practice do not follow a linear, but a cyclical sequence (6) Figure 2.

As discussed, the effectiveness of THP in treating depression was already established. The author adapted the intervention to the context of all mothers living in conditions of psychosocial adversity, and conducted a feasibility study in one area.
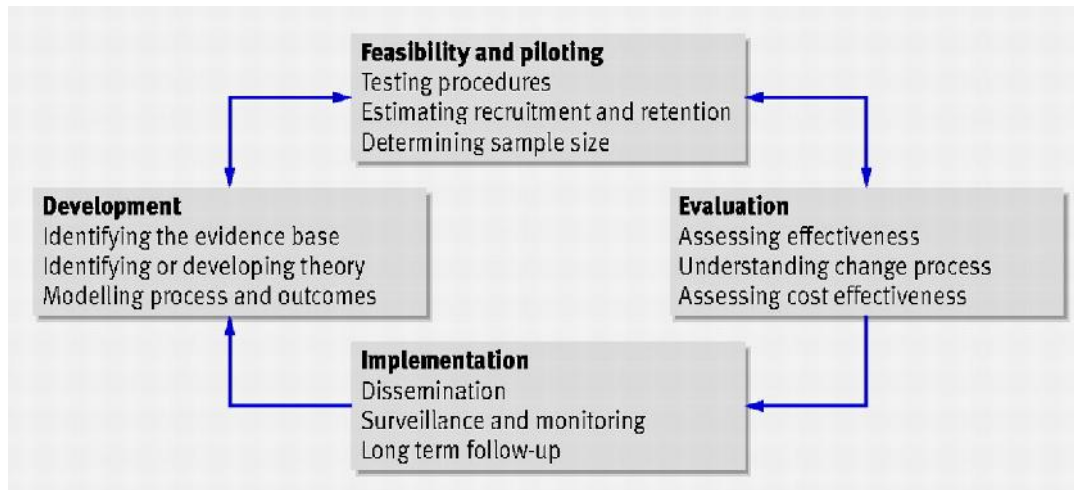


**FIGURE 2: MRC GUIDELINES FOR DEVELOPMENT AND EVALUATION OF COMPLEX INTERVENTIONS.**

The author was fortunate to be working in public mental health at a time when important methodological advancements were taking place in the field of psychological interventions in low-income settings. One such initiative was the Wellcome funded PREMIUM (a Programme for Mental Health Interventions for Under-resourced Health systems) in India, led by Prof Vikram Patel, with the author's primary supervisor as a collaborator. The overall aim of the PREMIUM programme was to develop a systematic, reproducible method for developing or adapting psychological treatments for low and middle-income settings that incorporate global evidence, are contextually appropriate, and can be delivered by non-specialist health workers (15) .

The PREMIUM approach is based on the MRC Guidelines described above, and elaborates the steps described in these guidelines. The approach is summarized in Table 1. The current PhD project adapted this methodological framework to the

objectives of the study (Table 1 and Figure 3). Further details of the methodology are described in the respective methods chapters.

The scientific and methodological underpinnings of this research fall within the remit of the relatively new discipline of *implementation science (16)*. The implementation science approach is defined as methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice (17), and, hence, to improve the quality and effectiveness of health services and care. Thus, the purpose of this research is not to generate or test new hypotheses – rather, it is to identify bottlenecks in implementation of evidence-based interventions into health systems or underserved populations. It does so through innovative methods of intervention adaptation for ease of integration, delivery and uptake; testing for feasibility and acceptability prior to population-level evaluation; and innovative designs to test interventions at the population level, identifying further bottlenecks that can then be addressed through future research (18). The MRC Guidelines for complex interventions described earlier (Figure 2) are also aligned to the principles of implementation science.
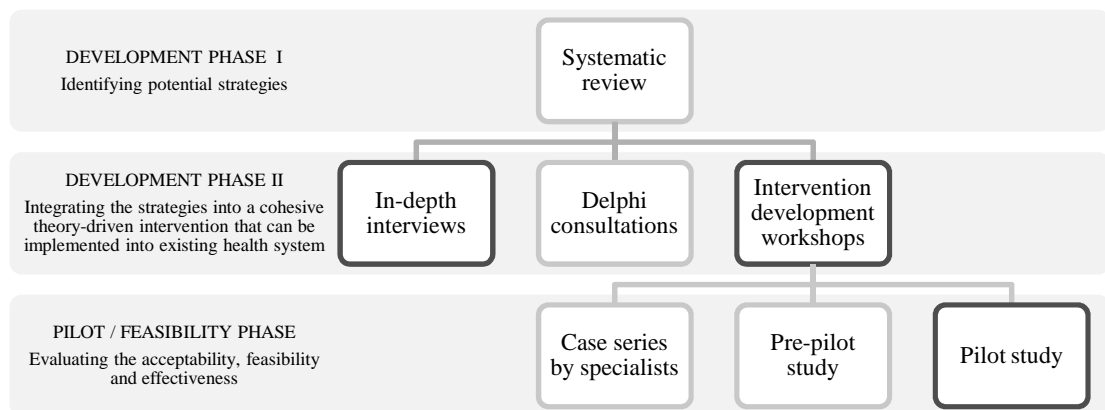


**FIGURE 3: OVERVIEW OF THE CURRENT PROJECT INCORPORATING DEVELOPMENT AND FEASIBILITY TESTING USING THE PREMIUM METHODOLOGY.(BOXES OUTLINED INDICATE THE STEPS UNDERTAKEN ENTIRELY AS PART OF THIS PHD PROJECT)**

| Phase | Method | Explanation | Application to the current study |
|---|---|---|---|
| 1. Identifying potential strategies | 1A: Systematic review | Synthesis of interventions that have been used in this or related condition | Not required as already conducted (2) |
| 2. Integrating the strategies into a cohesive theory-driven intervention that can be implemented into existing health system | 2A: In-depth interviews | Conducted with intended recipients, family members and care providers to a) inform selection of strategies that address key issues, and; b) understand the delivery context | Conducted as part of the PhD research |
| | 2B: Delphi consultations | Conducted with mental health experts and non-specialist health workers to rate the acceptability, feasibility, effectiveness, and risk of harm for each of the identified strategies were identified in 1A and 2A. | Not required as THP was already tested in the same population and Delphi for the cultural acceptability were not needed. |
| | 2C: Intervention development workshops | Workshops with local and international experts and with international investigators to design the psychological treatment based on the strategies identified in 1A, 2A and 2B. | Conducted  as part of the larger SPRING programme with substantial contribution by the author |
| 3. Evaluating the acceptability, feasibility and effectiveness | 3A: Case series by specialists | The evaluation of the treatment's acceptability and feasibility when delivered by mental health experts in a specialist clinical setting. | Not required as already tested in the Thinking Healthy Programme |
| | 3B: Pre-pilot study | The evaluation of the treatment's acceptability and feasibility when delivered by non-specialist in a limited experimental setting | Not required- as the delivery by non-specialists had already been done in THP |
| | 3C: Pilot study | Evaluation of the treatment (based on 3A and 3B) when delivered by trained non-specialists in real life settings | Conducted as part of the PhD research |

### 1.3.3.  The SPRING Study – the setting for the research

In 2008, while working with Human Development Research Foundation (HDRF) in Islamabad, the author joined the SPRING Project (Sustainable Programme Incorporating Nutrition and Games; http://spring.lshtm.ac.uk/), a Wellcome Trust funded Programme directed jointly by the University of Liverpool (Prof Atif Rahman) and the London School of Hygiene and Tropical Medicine (Prof Betty Kirkwood), and implemented by HDRF the in rural Rawalpindi. Briefly, SPRING involved the development and evaluation of an intervention to promote the physical and cognitive development of infants through a sustainable community-based programme delivered by community health workers. The programme consisted of a qualitative phase (development and piloting of the intervention) and evaluation (randomized trials in the two settings). The author led the intervention development team in Rawalpindi, and her PhD work was embedded in the qualitative phase of the programme. Further details of the larger programme are provided in section 6.2.

The author's original contribution to SPRING was to integrate strategies promoting maternal psychosocial well-being into the child development intervention. Her work in this context was based on earlier groundbreaking research conducted by the author's primary supervisor, Prof Rahman, and his team at Human Development Research Foundation (The Thinking Healthy Programme, described earlier). The core strategies for the SPRING maternal psychosocial well-being component were derived from the Thinking Healthy Programme.

### 1.4. Structure of the thesis

The thesis is organized into the following sections and chapters:

- **Literature review (Chapters 2- 5)**

  **Chapter 2** presents an introduction to the concept of maternal psychosocial wellbeing and its various dimensions.

  **Chapter 3** covers a key dimension of maternal psychosocial wellbeing from a public health perspective, i.e. perinatal depression, in further detail. The prevalence, burden

and risk factors for perinatal depression are reviewed in the light of current literature, with a focus on Pakistan.

**Chapter 4** discusses the impact of maternal psychosocial factors, including perinatal depression, on child health and development, focusing on low and middle income countries.

**Chapter 5** reviews interventions for maternal psychosocial wellbeing and depression in low and middle-income countries. It then focuses on one intervention, the Thinking Healthy Programme, which is the basis for adaptation in this PhD research. The chapter makes a case for integrated interventions as the most feasible and potentially effective strategy in such settings.

- **Aims and objectives (Chapter 6)**

This chapter summarizes the literature review, leading on to a description of the aims and objectives of the study. The primary research conducted for this PhD consisted of 2 linked studies Figure 3, leading to the development of an integrated psychosocial intervention, and this is reflected in the aims and objectives, as well as the structure of the subsequent sections of the thesis.

- **Development Phase (Chapters 7-9)**

The first study (Study 1) covers the steps leading to the development of the intervention for maternal psychosocial wellbeing, adapted from the Thinking Healthy Programme, and its implementation into the existing health system (Figure 3). The methodology, results and discussion for this phase are covered in **chapters 7, 8 and 9** respectively).

- **Feasibility /Pilot Phase (Chapters 10 to 12)**

The second study related to the feasibility testing and piloting of the intervention developed (Figure 3). The methodology, results and discussion are described in **chapter 10, 11, and 12** respectively.

**2. Chapter Two: Maternal psychosocial wellbeing – an introduction**

*"I reached for the rainbow*

*Grappled and failed*

*But when you held my hand*

*I saw it within me"*

*(By Author)*

## 2.1. Psychosocial wellbeing as a broad construct

The term 'psychosocial' has been used in a number of health-related contexts (19) for example, causality (psychosocial risk, psychosocial influence); environment (psychosocial support, psychosocial resource); and outcome (psychosocial distress, psychosocial well-being). From a sociological perspective, these contexts are inter-linked and can be seen as components along a pathway. Whitehead (20), while discussing the health disparities, categorized common interventions into four main categories, ranging from strengthening individuals, to strengthening communities, to improving living and working conditions and associated access to essential services, and finally to promoting healthy macro-policies. Similarly figure 4, provides a framework for understanding the 'psychosocial' pathways related to *maternal* psychosocial well-being (MPW) by organizing these at three levels (21): At the "macro" or broadest level is the national population, with its socioeconomic resources and their distribution, culture, and traditions. In the context of maternal psychosocial wellbeing, these would include economic opportunities and access to education for women, cultural norms which may be empowering or disempowering, and predominant social institutions such as tribes or families.

At the "meso" or community level, are factors that include social attitudes, trust, and cohesion; and the capacity of important social institutions to respond to current and changing human needs. Applied to the maternal context, these may include insecurity or discrimination in the work/home environment, recognition and reward for the maternal role, and supportive social and family networks. Finally, at the most "micro" or individual level, there are the factors associated with personal life: the quality of intimate relationships, access to social support, and the availability of informal help to solve the problems of daily life.

| Macro-level social factors | | Meso-level social factors | | Individual-level psychological factors | | Poor Psychosocial well-being |
|---|---|---|---|---|---|---|
| - Poor economic opportunity<br>- Poor access to education<br>- Poor family institutions<br>- Gender discrimination<br>- Lack of security and autonomy | → | - Poor effort/reward balance<br>- Unsupportive networks<br>- Poor interpersonal relationships<br>-Gender discrimination and lack of empowerment | → | - Poor self esteem<br>- Poor problem solving<br>- Poor coping abilities<br>- Poor motivation<br>- Unhealthy lifestyle | → | -Depression<br>-Distress |

**FIGURE 4: PATHWAYS TO POOR MATERNAL PSYCHOSOCIAL WELLBEING.**
**(ADAPTED FROM MARTIKAINEN.ET.AL, 2002)**

It is clear from Fig.4, that psychosocial wellbeing is a complex concept encompassing a number of dimensions. However, the objective of this review is not to conduct a detailed theoretical analysis of the concept of psychosocial wellbeing. Rather, the objective is to achieve a broad understanding of the various dimensions of maternal psychosocial wellbeing relevant to public health, and that could inform the development of an intervention that can be implemented at a public health level.

## 2.2. Psychosocial wellbeing from a clinical and public health perspective

From a clinical and public health perspective, Maternal Psychosocial Well-Being (MPW) can be conceptualized to exist along a spectrum - at the extreme negative end clinical depression is the leading contributor to the global burden of disease. This means more years of life lived with disability, reduced productivity including unemployment, increased physical illness, increased health expenditure, impact on families and caregivers, and premature mortality (2). Prevalence rates of maternal depression (during pregnancy and in the first postnatal year) in low and middle income countries range between 18-25% (22). Further down the spectrum, 'psychosocial distress', detected by self-report questionnaire measuring depressive and anxiety symptoms, is even more prevalent affecting up to half of all women living in circumstances of psychosocial adversity. Chapter 2 and 4 discuss these clinical and public health dimensions in more detail.

The rest of this chapter focuses on the broader 'social' and 'psychological' dimensions of psychosocial wellbeing that are of relevance to public health. 'Macro-level' factors (Fig.4) are not within the scope of this review.

## 2.3. Social and psychological dimensions of maternal wellbeing

A literature search was carried out on Scopus and Medline using the terms "psychosocial wellbeing", adding the terms 'maternal' and replacing psychosocial with 'psychological, and 'social'. Academic papers from the year 2008 -2014 were included.

A total of 38 studies were identified, but only 15 actually discussed maternal psychosocial wellbeing exclusively. These studies were assessed for quality in terms of a clearly stated problem and relevant methodology, explicit assumptions and limitations and adequate documentation. The relevant abstracts were reviewed and 10 studies that defined or measured maternal psychosocial well-being as an outcome were found eligible for review. Out of these, majority were cross sectional studies. These are summarized in Table 2, and discussed below. It is useful to classify the factors examined in these studies into Meso-level social factors and individual level psychological factors.

**TABLE 2: STUDIES ON MATERNAL PSYCHOSOCIAL WELLBEING IN THE LAST 7 YEARS**

| Studies on maternal psychosocial wellbeing | | | | | | | |
|---|---|---|---|---|---|---|---|
| Author | Year | Setting | Design | Population | Psychological Context measured | Social context measured | Key Findings |
| Frankel (23) | 2014 | Community setting of North America | Cross sectional study | 110 adult female caregivers, 91 adult male caregivers, and 114 children | Maternal stressful life events, Maternal depressed affect | Social support, Perceived Negative social influences, Social isolation | This study explored maternal–child behaviour relationships. Significant relations between toddler socio-emotional development, maternal social support, social isolation and maternal depression were found.Negative social influences were not related. |
| Newham (12) | 2013 | UK | Review | - | Self reported wellbeing Depression | - | Measured fluctuations in maternal well-being across pregnancy and concluded that it has a temporal nature and cannot be measured accurately by standard instruments. |
| Urquia (13) | 2013 | Canada | Nationwide cross sectional survey | 6421 childbearing women | Postpartum depression, Substance use, Self care | Abuse | The outcomes for maternal psycho social wellbeing were measured related to the marital status of women. Compared with women married for >5 |

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|---|---|---|---|---|---|---|---|
| | | | | | | | yrs, unmarried women cohabiting for < 2 yrs were at higher odds of intimate partner violence and substance use. |
| Walker (14) | 2013 | Texas | Secondary analysis | 419 low-income women at 6 weeks postpartum. | Depressive symptoms, Body image dissatisfaction, diet and exercise, substance use, self-care | - | The aim of this study was to evaluate relationships among the domains comprising psychosocial and behavioural health. Many low-income women postpartum have poor psychosocial and behavioural health in multiple domains |
| Johns (24) | 2013 | USA | Cross sectional - Web-based respondent driven sampling | 391 young women (18-24 yrs) | Depressive symptoms Anxiety Self-esteem | social support | Women's psychosocial markers was measured for assessing psychosocial wellbeing and sexual attraction level was found to be predictive of women's psychosocial wellbeing |
| Holmes (15) | 2012 | USA | Secondary analysis of a longitudinal study | 1364 infants and Mothers | Depression | Social support | Mothers' employment hours and preferences for employment predicted parenting stress, but social support buffered this effect |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| McMahon (16) | 2011 | Australia | Cross sectional study | 592 women | Anxiety<br><br>Depression<br><br>Hardiness | Quality of intimate partner relationship | Study examined relationships between maternal age at first birth, mode of conception and psychosocial wellbeing in pregnancy. Women having their first baby at an older age appear to have some psychological advantages over their younger counterparts; they are more resilient, report their partners as less controlling and report lower symptoms of depression and anxiety during pregnancy |
| Ngai (25) | 2011 | Public hospitals-Hong kong | Secondary analysis of intervention study | 181 first-time Chinese mothers | Learned resourcefulness<br><br>Stress<br><br>Maternal role competence and satisfaction<br><br>Postnatal depression | Social support | Learned resourcefulness<br><br>(Page 42) and social support have a direct impact on maternal role competence and satisfaction and on postnatal depression |
| McConnell (17) | 2009 | Australia | Multi-site, 'treatment' group only, repeated measures | 42 women with learning difficulties | Psychological empowerment | Social relationships<br><br>Social support | The group-based, adult-learning programme was designed (cycles of reflection, problem solving and action) to strengthen the social relationships and improve the |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | psychological wellbeing of mothers resulted in greater perceived social support and psychological wellbeing than the parent training and family support programs. |
| Lipman (26) | 2007 | Ontario | Community-based | 117 single mothers | Mood<br><br>self-esteem | Social support | Assessments of the association between group cohesion ratings and maternal self-evaluations of well-being. A positive association between group cohesion and mood, self-esteem, social support, and parenting, was found |

### 2.3.1.        Meso-level social factors


The macro-level factors listed in Figure 4 include economic opportunity, access to education, gender discrimination, lack of security etc., that are  hard to address in one intervention. Hence I will restrict my review to meso and individual level factors. Amongst meso-level social factors, **social support** was ost commonly reported as an environmental resource of social wellbeing. Mothers specifically need emotional support and practical aid in childcare from family members and friends which may help women face the stresses and emotional challenges of pregnancy and motherhood. Maternal social support studied in the above review includes family support, peer support and social relationships. For example in a web based cross sectional study by Johns (24), perceived family and peer/ friend support to women was measured as an indicator of their social wellbeing. The family support was measured by exploring about a sharing and confiding relationship with the family members using 5 items perceived social support from family scale (PSS-Fa). Similarly peer support addressed relationships with friends using perceived social support from friends scale (PSS-Fr). In another study (23) the perception of perceived care, relaxation, understanding, appreciation and reliability, of family and friends was measured to see its impact on maternal wellbeing and infant behaviour. A study by Lipman et al., on single mothers measured social support by a self-report measure of perceived social support that had scales of attachment, social integration, reassurance of worth, reliable alliance, guidance and opportunity for nurturance (26). All these factors were found to promote maternal psychosocial wellbeing.

Converse to the above, another aspect of social support as a key criteria for maternal wellbeing was **negative social influences.** These may comprise; difficult relationships, marital distress, interpersonal violence and domestic abuse. One of the studies (23)  assessed the degree of perceived negative social influences experienced by mothers and its relationship to child socio-emotional outcome, by asking questions about demands, arguments, criticism, and drugs or substance abuse by friends or relatives. Stable and supportive intimate relationships were found to be advantageous for maternal wellbeing. Quality of intimate partner relationship was measured in a study by McMahon (27) that assessed relationships between maternal

age, mode of conception and psychosocial factors that may influence adjustment during pregnancy. Two dimensions of the perceived quality of the partner relationship were studied: the care dimension estimate expressed warmth and affection, whereas the control dimension gauges the extent to which the partner tends to control or criticize the quality of intimate and social relationships. A cross sectional nationwide survey of 6,421 women in Canada assessed maternal psychosocial wellbeing by measuring intimate partner violence among other psychosocial criteria (28). A study by Holmes (29) investigated the effects of maternal employment on maternal wellbeing on a large sample (1,364) as mothers face difficulty in making work choices because family goals may negatively influence psychological wellbeing.

Another interventional study for women with learning difficulties (30), evaluated an intervention that could strengthen **social relationships** that measured both perceived social support and conflict in interpersonal relationships by using The Tilden Interpersonal Relationships Inventory (IPRI) –Short Form.

The opposite end of the social support is **maternal isolation**, where mothers feel alone or isolated and avoid family gatherings. Maternal social isolation was reported as being associated with greater levels of reported externalizing, internalizing, and dysregulation problems in infants in one study in the community setting of North America (23).

### 2.3.2.    Individual level psychological factors

Except two, (26, 30) all of the above studies (Table 2) included depression and anxiety in as the **psychological** dimension of psychosocial wellbeing. Considering the public health importance of perinatal depression and anxiety, these will be discussed in detail in the next chapter. Other individual psychological factors described in the studies are discussed below.

Empowerment is an important indicator of wellbeing. McConnell et al., in their study on women with learning difficulties measured **maternal psychological empowerment** (30) by using scales of mastery and constraints. The Mastery Scale evaluates the sense of efficacy or effectiveness in achieving goals. The Constraints

measure the extent to which there are obstacles or factors beyond one's control that interfere with reaching goals.

**Maternal life events** that include moving of residence, ending a close relationship, serious accident or trauma, serious illness, financial crisis, and being in trouble with the law, are considered important psychological factors impacting maternal wellbeing. A study by Frankel et al., 2014 (23) examined the relationship between maternal life events and found an association with toddler's behaviour.

**Hardiness** is a construct similar to resilience which captures the ability of individuals to turn stressful situations into growth-inducing experiences. It is believed that the psychosocial wellbeing depends fundamentally upon the **ability to cope** with life circumstances. A cross-sectional study by McMahon et al., 2011 (27) looked at the relationship between maternal age and resilience during pregnancy and found that older age at first pregnancy is positively associated with resilience.

**Learned resourcefulness** is another related concept, which is defined as a range of cognitive-behavioural skills for the self-regulation of internal responses, such as emotion, pain and negative thoughts that alter the behaviour. The mothering role is associated with stress and learned resourcefulness that influence women's actions making them more confident in their ability to deal with parenting. Learned resourcefulness was found to be a significant predictor of maternal role competence in a study of 181 first time Chinese mothers (25).

**Self-esteem** is considered an important parameter for the psychological wellbeing of women. This was measured by Johns et al. (24) and found to be very relevant to these women's overall wellbeing. Related to this, physical changes to women's body during pregnancy and postnatal period lead to problems with **body image** which may affect their wellbeing lower self-esteem and **Self-perception.** Body image was measured in a study by Walker et al., 2013 (31) and used the Body Cathexis Scale that measures assessed attitudes toward various body aspects e.g., body build, waist, hips, energy level etc.

Maternal **health behaviours** including diet, exercise and substance abuse (31) were measured in some studies as important aspects of wellbeing of a mother. In a study on Canadian women the impact of marital status on maternal wellbeing was

measured using substance abuse as one of the negative psychosocial outcomes (28). Impact of poor psychosocial and behavioural health on women's own well-being and their parenting is well known. Walker et al., 2013 (31) studied the psychosocial and behavioural health in low income women. He measured parameters of diet and exercise, smoking, alcohol, substance use and general self-care (e.g., safety, hygiene, and rest).

## 2.4. Conclusions and Summary

Psychosocial wellbeing is a wide-ranging concept, but from a broad sociological perspective, the dimensions contributing to maternal psychosocial wellbeing can be broadly categorized into macro- and meso- level social factors, and individual-level psychological factors. Meso-level social and Individual-level psychological factors have been reviewed in further detail, because these factors would inform the development and adaptation of a community-based intervention delivered by health workers to individual women. Important factors include social support, social isolation, negative social influences, psychological empowerment, self perception and ability to cope. However, from a clinical and public health perspective, maternal depression is the most relevant and widely studied dimension that influences maternal psychosocial wellbeing. Maternal depression is discussed in the next chapter. It can also be a potential mediator of the effects of psychosocial factors on child health and development outcomes. This is reviewed in the next chapter.

**3. Chapter Three: Current state of maternal depression and associated risk factors in low and middle income countries**

*"I touch my rounded belly with hope, and fear*

*I bare the hidden pain*

*Only for a while...*

*And put a veil on it again"*

*(By author)*

## 3.1. Maternal mental health and its public health significance

The World Health Organization defines maternal mental health as 'a state of wellbeing in which a mother realizes her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to her community' (32).

Poor maternal mental health is the second leading cause of disease burden in women worldwide (1) and hence contributes to global burden of disease. A systematic review on disability-adjusted life years (DALYs) and global burden of disease in 21 regions has noted a rising burden of mental disorders (37% increase in depressive disorders) (22). Poor maternal mental health not only leads to maternal disability, it adds to economic and human costs and has a huge impact on the children, who are at risk for health, developmental, and behavioural problems (33).

There is an unmet need for the treatment of mental health disorders especially in low and middle income countries (LMICs) where the rates of maternal depression are high (34). In LMICs, there is an urgent requirement to scale up and increase access to maternal mental health services so that more people can benefit, however till now very few services have achieved this goal (35). Evidence based interventions for maternal mental health exist (2), but are not implemented and unless this "know-do gap" is filled, we cannot hope to achieve universal maternal mental wellbeing.

## 3.2. Maternal depression from a clinical and public health perspective

As discussed in chapter 2, from a clinical and public health perspective, maternal depression is one of the most important psychological indicators of maternal psychosocial wellbeing, and the most prevalent mental health condition. The criteria for diagnosis of perinatal depression are given in Box 1. It is important to distinguish temporary conditions such as 'baby blues' from maternal depression. 'Baby blues' is a common emotional state that occurs within the first week after the baby is born. Typically, the mother feels tearful and sad. In contrast to depression that may have serious consequences for both mother and child, 'baby blues' is a harmless condition that lasts a few days.

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Box 1: The diagnostic criteria for Maternal Depression (ICD-10)

At least two of the following features must be present for at least two weeks:

➢ A depressed mood present for most of the day
➢ Loss of interest or pleasure in activities which are normally pleasurable, such as playing with the baby
➢ Tiredness, decreased energy and fatigue

Additionally, any four of the following should be present

➢ Loss of confidence and self-esteem
➢ Feelings of guilt and blaming oneself
➢ Recurrent thoughts of suicide or death, including that of the child
➢ Difficulty in concentration
➢ Agitation or lethargy
➢ Sleep disturbance
➢ Appetite disturbance

---

Globally, maternal depression accounts for the largest proportion of the burden associated with mental disorders (1). Physical, social and mental wellbeing of mothers impacts the succeeding generations (36). A mentally healthy mother will be better able to rear her infants and young children who are well nourished and perform better in school, grow into healthy adults and in turn give their children a better start in life. Maternal psychosocial wellbeing can therefore be considered an important factor impacting the future generations, especially of low and middle income countries (LMICs) where poor child health and development are major issues. The remainder of this chapter reviews maternal depression in the context of low and middle-income countries in further detail.

## 3.3. Prevalence of maternal depression in low and middle income countries

Two recent systematic analyses have explored the prevalence of maternal depression in low and middle income countries (LMICs). A review by Fisher et.al (37) looks at the common mental disorders (CMD) in perinatal period. They reported a pooled average prevalence of antenatal CMD of 15.9% and postnatal CMD of 19.8 %, which was higher compared to rates in high income countries (37). This meta-analysis pointed out significant differences in mean prevalence estimates derived from self-reported symptom measures (20.80%) and from diagnostic assessments (16.09%).

A review by Parsons and colleagues (38), explored postnatal depression in LMICs. Figure 5 shows a box plot comparing prevalence estimates of postnatal depression in high-income countries (13% indicated by the grey line) and LMICs, using questionnaires vs. clinical interviews in 12 countries (38). It can be seen that the prevalence of postnatal depression is much higher in the low income countries, and there is also variation between countries. The variations in rates of depression in different samples and countries could be explained as follows:

1) Differing definitions and criteria of depression together with the use of different instruments and their diagnostic algorithms is one of the reasons. Some studies define depression as pure depression while others diagnose

Common Mental Disorders (CMD), which include mixed anxiety depression, pure depression and anxiety disorders.

2) Differing methodologies: The timing of assessments has also differed considerably across studies, making direct comparisons difficult. Some studies tested women as early as 2 weeks postpartum; others up to 52 weeks and others again included women both early and late in the postpartum period.

3) Different populations: Population-based studies have shown lower rates compared to primary care and hospital-based studies. This difference is easily understood in terms of illness behaviour as people with mental disorders are more likely to attend health facilities than those without (38), so the prevalence is bound to be higher in people attending health facilities than in random samples of the population (39). Even within population-based samples there may be variation according to the level of social deprivation and social stress experienced by the population. Within the developing countries some experience greater poverty and less education than others, for example Patel and colleagues have shown varying rates of CMD amongst women in four developing countries and its association with poverty and education (40).

4) Change of prevalence rates over time: Surveys carried out over many years may have actually seen a rise in prevalence rates e.g. Kessler and colleagues found 12.9% prevalence of depression in USA in 1993, whereas their 2003 survey found a prevalence of 16.2% (41).
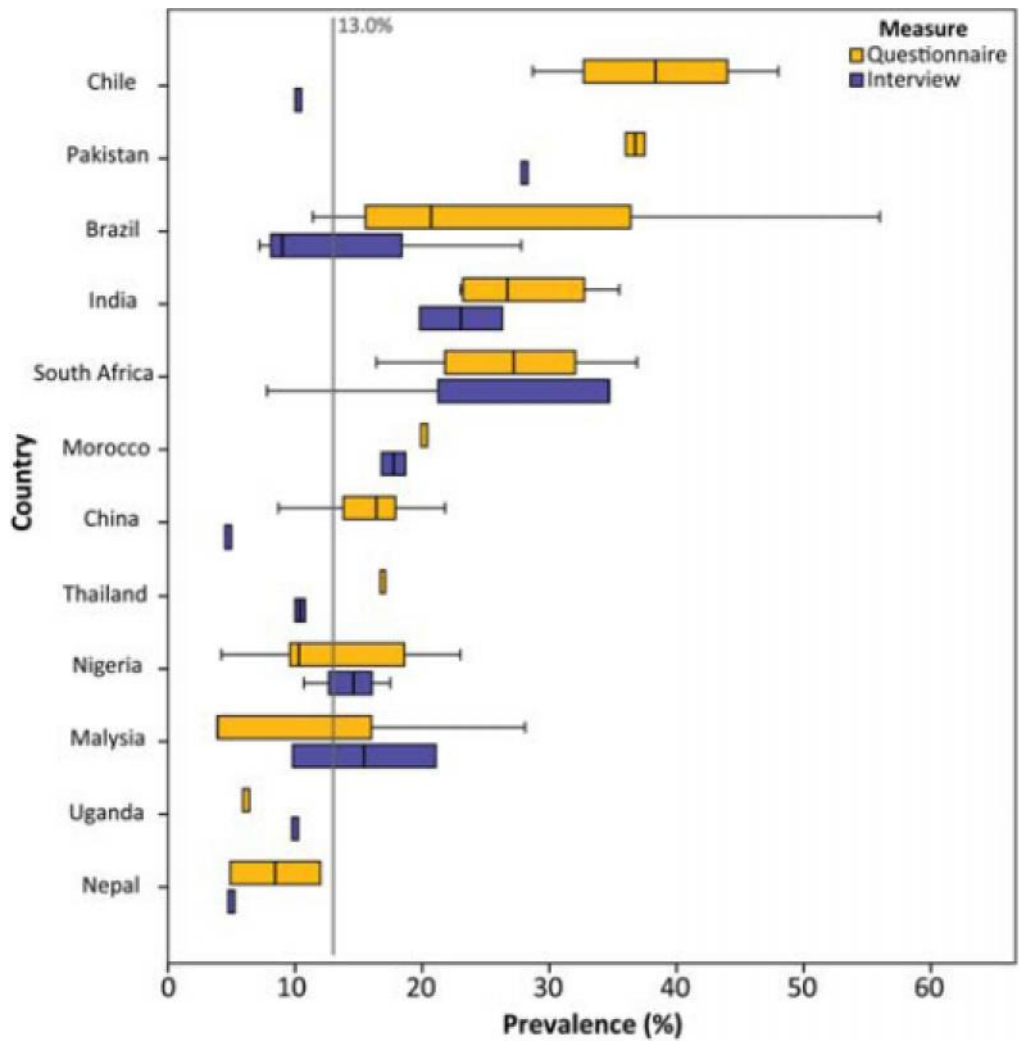
**FIGURE 5: PREVALENCE OF POSTNATAL DEPRESSION IN HIGH INCOME COUNTRIES COMPARED TO LOW INCOME USING CLINICAL INTERVIEWS VS. QUESTIONNAIRES**

## 3.4. Prevalence of maternal depression in Pakistan

As the settings for this PhD research was Pakistan, a more detailed review of studies related to maternal depression in Pakistan, was carried out. A systematic literature search was conducted using MEDLINE (PubMed), from 1987, and SCOPUS database from 1999 till 2014 using keywords "depression", anxiety, stress and or "antenatal", "antepartum", "pregnancy", "postnatal","postpartum", "perinatal", and "Pakistan". Only the articles published in English were included. In the initial screening, after reading the title and abstract 26 articles were found that discussed maternal depression (antenatal or postnatal) in Pakistan. These papers were reviewed for quality by assessing whether the methodology was relevant, the objective was clearly stated, the analysis was robust and study discussed the limitations and measured the prevalence of maternal depression. The articles which measured prevalence were included; however the studies conducted on Pakistani population living outside Pakistan were excluded because the population living outside would be affected by the environment where they live and would not have depicted a picture of depression for Pakistan.

<div style="border:1px solid;">
Total papers identified; 45 at SCOPUS and 51 at MEDLINE
</div>
⬇
<div style="border:1px solid;">
Papers included after reading the title and abstract= 26
</div>
⬇
<div style="border:1px solid;">
Full papers retrieved and found eligible =19
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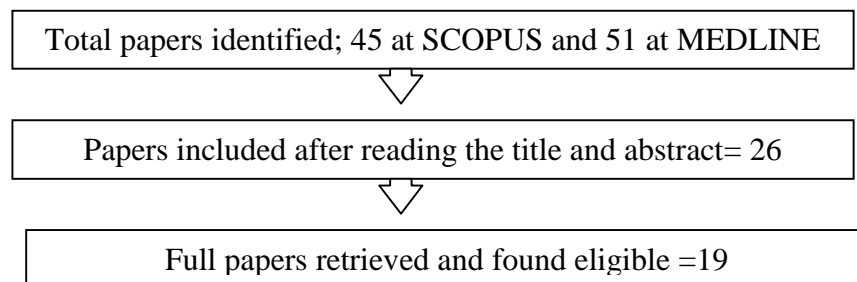
**FIGURE 6: PROCESS OF LITERATURE REVIEW**

The studies included in the review are summarized in Table 3

.

| Author &Year | Design | Setting | Sample Size | Assessment Time | Tool | Prevalence |
|---|---|---|---|---|---|---|
| Humayun et.al., 2013 (42) | Cross sectional study | Teaching Hospital Lahore | 506 | Antenatal | *EPDS > or = 10 | 65% |
| Ali et al., 2012 (43) | cross-sectional study | The Aga Khan University Hospital, Karachi | 165 | Antenatal | *HADS 8 | 16.8% |
| Shah et al.,2011 (44) | cross-sectional survey | Community Ghizar district of Gilgit Baltistan | 128 | Antenatal | *EPDS <br><br> > or = 13 | 48.4% |
| Zahidie et al.,2011 (45) | cross-sectional study | Rural Sindh | 375 | Antenatal | *CES-D | 62% |
| Husain et al., 2011 (46) | Cohort study | Urban clinic, Karachi | 1,357 | Third trimester <br><br> 3 months postnatal | *EPDS <br><br> 12 | 38.3% <br><br> 25.8% |
| Asad et al.,2010 (47) | Prospective cohort study | Community ( home visits), Hyderabad | 1,369 | 2nd trimster | *AKUADS-SF <br><br> Cut off 13 | 18% |
| Imran etal.,2010 (48) | Prospective cohort | Tertiary care hospital in Lahore | 213 | Third Trimester | *EPDS <br><br> >12 | 42.7% |

| Ali et al., 2009 (49) | quasi-experimental study | semi-urban communities (Qayoomabad and Manzoor Colony) Karachi | 420 | 1, 2, 6, 12 months postnatal | *AKUADS >or =17 | 28.8% |
|---|---|---|---|---|---|---|
| Karmaliani et al., 2009 (50) | Cross sectional data –cohort study | Urban Community Hyderabad | 1,368 | 20-26 weeks of gestation. | *AKUADS >13 | 18% |
| Muneer A et al., 2009 (51) | cross-sectional study | Benazir Bhutto Hospital ,Rawalpindi | 154 women | 6 wks postpartum | *EPDS | 13.1% |
| Rahman et al., 2007 (34) | Prospective cohort | Community-Sub Districts Rawalpindi | 701 | Third trimester Postnatal 3m,6m,12m | *SCAN ICD-10 | 56% |
| Karmaliani et al., 2007 (52) | Validity study | Civil Hospital Hyderabad | 200 | Antenatal | *AKUADS How I feel scale | 40% 47% |
| Husain etal.,2006  (53) | survey | Population based,Kallar Syedan, sub district, Rawalpindi | 149 | 12 weeks Postnatal | *EPDS > or = 12 | 36% |
| Hamirani et al., 2006 (54) | Cross sectional study | Abbasi Shaheed Hospital, Karachi, | 75 | second and third trimester of pregnancy | *EPDS >or = 12 | 34.6% |

| Karmaliani et al., 2004 (55) | cross-sectional study | Civil hospital, Hyderabad | 1000 | 2nd Trimester | *AKUADS and<br><br>How I feel scale | 11.5%<br><br>13.5% |
|---|---|---|---|---|---|---|
| Kazi et al.,2006<br><br>(56) | cross-sectional study | 4 hospitals in Karachi | 292 | Antenatal | *CES-D<br><br>16 or > | 39.4 % |
| Niaz et al., 2004 (57) | Cross sectional study | Lady Atchison Hospital, Lahore | 200 | Antenatal | *ICD-10 | 25% |
| Rahman et al., 2003 (58) | cross-sectional study | Rural sub district, southern Kahuta | 632 | 3rd Trimester<br><br>10-12 wks postnatal | *SCAN<br><br>ICD-10 | 25%<br><br>28% |
| Kalyani et al., 2001 (59) | cross-sectional study | Rawalpindi General hospital | 120 | 2nd postnatal week | *EPDS<br><br>>10 | 37.50% |

*Edinburgh Postnatal Depression Scale (EPDS), Schedules for Clinical Assessment in Neuropsychiatry (SCAN), Centre for Epidemiologic Studies Depression Scale (CES-D), Agha Khan University Antenatal Depression Scale (AKUADS) and Hospital Anxiety and Depression Scale (HADS)

The above studies show that the prevalence of depression in antenatal women in Pakistan ranges from 11.5% to 75% and in postnatal women from 13.1% to 63.3 %. As discussed in the previous section, the wide range of prevalence could be due to a variety of reasons, including methodological differences in the form of the settings, population selected, the sample sizes, the measurement instruments used and their cut-off values, the timing of administering the tools and assessors being mental health specialist or non mental health personnel. The individual studies are discussed in further detail below.

The four provinces of Pakistan are quite different culturally, economically and their health indicators, e.g. maternal mortality, under five mortality, stunting etc. Important indicators of women autonomy, education and social support also vary widely.  It is interesting to note that all the studies on depression except one (Baltistan) were conducted in the Punjab and the Sindh provinces, which may not be representative of the other two less privileged and conflict hit provinces. The majority (10/18) of the studies were conducted in teaching hospitals or antenatal clinics that are not representative of the general population which is mainly rural in Pakistan. The community based studies (8/18) were conducted in the rural, semi urban or urban communities.

The various measurement instruments used in these studies to diagnose depression include Edinburgh Postnatal Depression Scale (EPDS) (60), Schedules for Clinical Assessment in Neuropsychiatry (SCAN) (58) , Center for Epidemiologic Studies Depression Scale (CES-D) (56), Agha Khan University Antenatal Depression Scale (AKUADS) (52) and Hospital Anxiety and Depression Scale (HADS) (43). EPDS, was the most commonly used instrument, however the cut offs for diagnosing depression varied from 10 to 13 in different studies (46, 54, 59) and hence the inconsistent scores. The time points in the antenatal or postnatal periods also vary a lot among studies.

The largest urban hospital based, cohort study was conducted using EPDS on 1,357 women by Husain et al., in 2011(46). This scientifically rigorous study tried to document the persistence of depression from the antenatal to the postnatal period in

urban Pakistan. The screening tool was administered by experienced researchers, in a private clinical setting. Since the data was collected from only one clinic, from an economically stable population, with low follow up rates for measurement of postnatal depression, the prevalence rates may have been underestimated.

The two large urban community based studies in Hyderabad by (Asad et al.,2010) (47) and (Karmaliani et al., 2007) (52) derived data from the same cohort of women and essentially are a duplication. These report prevalence of antenatal depression as 18%, which may not be nationally representative, as the study population included educated women mainly from a prosperous community.

The largest rural community based study (Rahman et al., 2007)(34), collected data on 701 antenatal women through experienced clinicians from 10 union councils, and was generally a representative sample. The most significant finding of this study with a robust methodology was that over half of mothers depressed in the third trimester of pregnancy continued to be depressed one year after giving birth.

In view of the variability, the exact prevalence rates of maternal depression in Pakistan are difficult to estimate. However, it might be rational to take an average of the prevalence reported in the studies conducted in the community, i.e., about 36% of women in suffering from depression during the perinatal period in Pakistan. The above studies however support a high prevalence of depression in the Pakistan and that makes a strong argument for integrating a universal intervention for maternal wellbeing into a general maternal and child health programme.

## 3.5. Risk factors for maternal depression in Pakistan

A study of factors contributing to these high rates of maternal depression in Pakistan would be important in informing us about the various psychosocial stressors that could be targeted by an intervention. A systematic review of 17 low and middle-income countries by Fisher and colleagues (37) has identified a number of psychosocial risk factors for maternal depression, including: socioeconomic disadvantage, unintended pregnancy; young age; being unmarried; lacking intimate partner empathy and support; having hostile in-laws; intimate partner violence, having insufficient emotional and practical support; giving birth to a female; child

and having a history of mental health problems. However, being educated, of the ethnic majority, in a permanent job and kind and trustworthy intimate partner are some of the protective factors (37). We review studies from Pakistan to understand in greater detail the factors that might be more specific to the Pakistani context.

I conducted a literature search to review the determinants of maternal depression in Pakistan. The following data bases were systematically searched using the key words (maternal or postnatal, pregnancy, antenatal) and depression and (factors, or determinants, reasons, risks) science citation index (19 studies), Medline (16 studies), Social sciences citation index (14 studies), Global Health (9 studies) and Psych INFO (4 studies) from 2003 till 2013. These studies were assessed for quality in terms of a clearly stated problem and relevant methodology, explicit assumptions and limitations and adequate documentation.  A total of 8 studies were identified, of which four were cohort studies and 4 were cross-sectional (Table 4). The findings of the studies are summarized in Table 5- Table 11.

TABLE 4: RISK FACTORS FOR MATERNAL DEPRESSION IN PAKISTAN

| Studies in Pakistan, reporting the risk factors for maternal depression | | | |
|------|------|------|------|
| S.NO | Author and year | Study design | Sample size |
| 1 | Ali et al., 2012(43) | Cross sectional | 165 |
| 2 | Kalar et al., 2012(61) | Cross sectional | 450 |
| 3 | Husain et al., 2011(46) | Cohort | 1357 |
| 4 | Shah et al., 2011(44) | Cross sectional | 128 |
| 5 | Karmaliani et al.,2009(50) | Cohort | 1,368 |
| 6 | Rahman et al.,2007(34) | Cohort | 129 |
| 7 | Husain et al 2006 (53) | Cross sectional | 763 |
| 8 | Rahman et al., 2003(58) | Cohort | 1173 |

### 3.5.1.    Economic factors

Economic factors have been reported as risk for maternal depression in many of the studies. The cohort study by Husain and colleagues (46) reported a monthly income of less than the minimum wages in Pakistan (< Rs 6000) and low family income as risk factors. Financial difficulties in the previous year were significantly associated with antenatal depression.

However, in another cohort study by Rahman and colleagues, the household's income or socioeconomic status rated subjectively by local community health worker was not found to be a risk factor for postnatal depression measured at 12 weeks after birth, but was a risk factor for depression that persisted one year after giving birth (58). It may be that economic status contributes to chronic depression, but not to an acute episode of depression (34).

Another important indicator of economic status, the husband's unemployment status, was a found to be a risk factor reported by majority of the cohort studies (50, 62, 63). Thus, financial hardships play an important contributory role in persistent depression.

TABLE 5 : ECONOMIC RISK FACTORS FOR MATERNAL DEPRESSION IN PAKISTAN

| ECONOMIC RISK FACTORS FOR MATERNAL DEPRESSION IN PAKISTAN | |
| --- | --- |
| AUTHOR AND YEAR | RISK FACTORS |
| Rahman, 2003 (58) | Financial difficulties |
| Husain N, 2011(46) | Low family income |
| Husain, 2011 (46) | Monthly income: <6,000 Rs |
| Rahman 2007 (34) | Poverty  * |
| Husain 2011, Karmaliani 2009, Rahman 2003 (46, 50, 58) | Unemployed husband |
| Ali 2012 (43) | >5 People living in the house |

### 3.5.2. Socio-demographic factors

**TABLE 6: SOCIO-DEMOGRAPHIC FACTORS FOR MATERNAL DEPRESSION IN PAKISTAN**

| Socio-demographic risk factors for maternal depression in Pakistan | |
|---|---|
| **AUTHOR AND YEAR** | **RISK FACTORS** |
| Ali 2012 (43) | Age |
| Husain 2011 (46) | Low education |
| Rahman 2007 and Husain 2011 (34, 46) | Uneducated husband |
| Karmaliani 2009 (50) | 10 or >years of formal education |
| Rahman 2003 (58) | Two or more girl-children |
| Rahman 2007 (34) | 5 or more children |

### 3.5.3. Social and family relationships

Social and family support is an important factor for maternal depression globally. In Pakistan, maternal depression was found to be more prevalent in nuclear families (46, 58), and the reasons discussed were that in extended families mothers are supported and helped by other family members during the postnatal period and in child care, which is protective against depression (58, 61). Similarly lack of social support, friends and confidants and difficult relationships or family arguments contribute to depression (34, 46, 53, 58). One cross sectional study highlights the lack of maternal involvement in decision making in family matters as a risk factor (43).

Globally, social support, including few friends or confiding relationship and lack of assistance in crises is related to maternal depression. General dissatisfaction with

support, rather than specific characteristics of number or quality of relationships appears to be relevant (64-66).

While not investigated in detail in the Pakistan studies (possibly due to difficulties in accessing husbands), poor relationship with a partner is also regarded in the global literature as a major predictor of depression after childbirth in women (Romito, 1989; O'Hara and Swain, 1996; Cooper and Murray, 1997, Beck, 2001; Scottish Intercollegiate Guidelines Network, 2002). Dimensions of this association are: increased marital conflict (Kumar and Robson, 1984), men being less available after delivery, and providing insufficient practical support (O'Hara, 1986) or poor emotional support (Paykel et al., 1980; Dimitrovsky, Perez-Hirshberg and Istkowitz, 1987), poor adjustment or an unhappy relationship (Webster et al., 1994) low satisfaction (Beck, 2001), insufficient involvement in infant care (Romito, 1989) or holding traditional rigid sex role expectations (Wilson et al., 1996).

In summary, social and family (including the husband) support is an important risk factor that needs to be strengthened to improve maternal wellbeing.

## TABLE 7: SOCIAL AND FAMILY RELATIONSHIPS AS RISK FACTORS FOR MATERNAL DEPRESSION IN PAKISTAN

| Social and family relationships as risk factors for maternal depression in Pakistan | |
| --- | --- |
| AUTHOR AND YEAR | RISK FACTORS |
| Ali 2012 (43) | Lack of involvement in household decisions |
| Husain 2011(46) Rahman 2003 (58) | Nuclear family structure |
| Rahman 2007 and Husain 2011 (34, 46) | Lack of confidant or friend |
| Husain 2006 (53) | Lack of social support |

### 3.5.4.    Previous life events and obstetric outcomes

Stressful life events in the previous years, for example husband made redundant (58), housing difficulties (58) and husband away from home for more than one month (46) were measured by a questionnaire (34, 53).Adverse pregnancy outcomes, complications including operative delivery, multiparity, or gravidity, being primigravida, were risks for maternal depression (43, 46, 50, 61) (Table 9).

**TABLE 8: LIFE EVENTS AS RISK FACTORS FOR MATERNAL DEPRESSION IN PAKISTAN**

| **Life events** as risk factors for maternal depression in Pakistan | |
| --- | --- |
| AUTHOR AND YEAR | RISK FACTORS |
| Husain 2011 (46) | Husband away from home for more than one month |
| Rahman 2007 and Husain 2006 (34, 53) | Stressful life events in the previous years |
| Rahman 2003 (58) | Husband made redundant |
| Rahman 2003 (58) | Housing difficulties |

### 3.5.5.    Reproductive risk factors

Certain obstetric and reproductive health issues and events have been shown to increase the risk of maternal depression and are outlined in the table below.

| Reproductive risk factors for maternal depression in Pakistan | |
|---|---|
| **AUTHOR AND YEAR** | **RISK FACTORS** |
| Ali 2012 (43) | Adverse pregnancy outcomes |
| Husain 2011 (46) | Problem during a previous delivery |
| Kalar 2012 (61) | Cesarean delivery |
| Karmaliani 2003 (50) | Unwanted pregnancy |
| Karmaliani 2003 (50) | First Pregnancy |
| Ali 2012 (43) | Total no of pregnancies |
| Ali 2012 (43) | No of live births |
| Husain 2011 (46) | Taking medication during pregnancy |

### 3.5.6.    Domestic maltreatment and abuse

Some of the studies measured domestic violence (physical, sexual, or verbal abuse) and found that there was a significant association with depression (43, 50, 53, 67), whereas a supportive husband was found to be a protective factor (61). Similarly, marital problems in the previous year were another risk factor for maternal depression (58).

The global literature reports similar findings: Violence against women by their intimate partners has been described as *the most prevalent …gender based cause of depression in women* (68).    The experience of criticism, coercion, control, humiliation or verbal or physical violence in an intimate relationship perpetrated by a partner on whom an individual is dependent is causally linked to the development of depression and anxiety in women. A prospective cohort study of 838 parturient

Chinese women in Hong Kong (69) found using the Abuse Assessment Screen that 16.6% had been abused in the previous year.

TABLE 10: DOMESTIC ABUSE AS A RISK FACTOR FOR MATERNAL DEPRESSION IN PAKISTAN

| Domestic abuse as risk factor for maternal depression in Pakistan | |
|---|---|
| AUTHOR AND YEAR | RISK FACTORS |
| Ali 2012 (43),<br>Karmaliani 2009 (50),<br>Husain 2006 (53)<br>Shah 2011 (67) | Domestic violence/ Physical / verbal/ sexual abuse |
| Rahman 2003 (58) | Serious marital problems |

## 3.5.7.     Protective factors for maternal depression

A few studies have discussed some of the protective factors for maternal depression. Rahman et al., 2003 reported in their cross sectional study in Kahutta Pakistan that family support was protective for depression. The traditional practice of confinement of women during the postnatal 40 days (Chilla), was a protective factor as during this period the responsibilities are taken over by other family members. Presence of infant's grandmother and family support for child care were also found to be protective.

Another cross sectional study in Karachi, Pakistan by Kalar.et.al identified planned pregnancy (odds ratio=0.63) and help from family members (Odds ratio=0.62) or husband (odds ratio= 0.59) as protective factors.

**TABLE 11: PROTECTIVE FACTORS FOR MATERNAL DEPRESSION IN PAKISTAN**

| Protective factors for maternal depression in Pakistan | |
| --- | --- |
| **AUTHOR AND YEAR** | **PROTECTIVE FACTORS** |
| Rahman 2003 (58) | Practice of the traditional ' chilla |
| Rahman 2003 (58) | Presence of the infant's grandmother |
| Rahman 2003 (58) | Support by family with routine child-care |
| Kalar 2012 (61) | Planned pregnancy |
| Kalar 2012 (61) | Help from family members And Help from husband |

## 3.6. Conclusions and Summary

A review of the limited literature from Pakistan, together with the wider global literature, indicates that maternal mental health, and more specifically maternal depression, is related inextricably to an individual's life circumstances and personal experiences and also to wider contextual factors. These include a society's concern for gender, ethnicity and the human rights to education, equal social and economic participation, safety, individual autonomy and freedom from discrimination (70). A psychosocial model of health takes all these factors into account and presumes that an individual's state of health or experience of illness is determined by personal experiences, social circumstances, family environment in addition to inherited or biological factors (71). Reflecting this social model of health (20), the WHO proposed a useful definition of mental health that could guide efforts to intervene to promote maternal psychosocial wellbeing:

*… the capacity of the individual, the group and the environment to interact with one another in ways that promote subjective well-being, the optimal development and use*

*of mental abilities (cognitive, affective and relational), the achievement of individual and collective goals consistent with justice and the attainment and preservation of conditions of fundamental equality.* (page 1) *(72)*

This definition makes it clear that daily experiences regarding opportunities to use individual abilities and skills; to experience personal achievement and a sense of effectiveness are fundamental to experiencing an inner, subjective sense of wellbeing that is in turn the basis of effective functioning. The definition also emphasises the importance of development over the whole course of life. Early experiences and opportunities influence later capacities for participation. Relationships with other people are centrally important to individuals, allowing trust, intimacy and the giving and receiving of affection, support and care; collaboration and the opportunity to work together to achieve common goals and to have shared experiences. The social, cultural, economic and family living environment is crucial and maternal mental health live (70), and  particularly important to mothering, which will be the focus of the next chapter.

**4. Chapter Four: Impact of psychosocial factors on child health and development in low and middle income countries**

*"Can you see me mama..?*

*Through the tears in your eyes*

*Because I am a reflection of you"*

*(By Author)*

## 4.1. Introduction

We have seen from previous chapters that psychosocial factors, particularly maternal depression, affect a large number of mothers in low and middle-income countries. We now explore the evidence that psychosocial factors, mediated thorough maternal depression, have a negative impact on child health, development and growth. Through this evidence, a case is made for the importance of integrating interventions for maternal psychosocial wellbeing into child health programmes.

## 4.2. Impact of psychosocial factors on child health and development – an overview

According to Grantham-McGregor and colleagues, in their influential Lancet Series on global early child development (73), 200 million children in developing countries do not develop to their full potential. A review on the social determinants of early child development highlights the importance of the complex interplay between biological, genetic, and environmental conditions that impact child development (74). This review is a useful starting point to examine the contribution of psychosocial factors to child development in a global context.

Social factors such as poverty have been reported to be important determinant of maternal psychosocial wellbeing and child health and development. There are certain poverty associated family and environmental stressors that are associated with young children's poor health and cognitive development and high health care use (75). For example poor women's access to maternal health services compromises their own and their children's health in the LMICs (76). A selective review of key studies (77)

looked at the conceptual and empirical challenges to measuring the effects of poverty on children's mental, emotional, and behavioural health and developed a conceptual framework that incorporates mechanisms through which poverty appears to influence child and youth mental health. This conceptual framework was used to review the literature on the mechanisms through which family poverty influences the mental, emotional, and behavioural health of children and concluded that family poverty has a causal negative effect on child health (77).

Another important family-level factor is maternal education which is associated with child survival and health (78). The family health behaviours, for example child immunization practices, are also positively influenced by maternal education (79). Stunting was found to be lower in children of mothers who had had a primary education compared to mothers with no education (79). A study in Pakistan reported that maternal education compared to the father's education is more critically important for longer term child health outcomes and maternal empowerment within the home through education actually translates into better child growth (80).

Families have a central position as primary care givers and have an important role to play in child health and development. Lack of family networks have long been demonstrated to pose risks to early child development (81). Two types of family social support networks have been identified; formal (e.g. health care professionals), and informal (family, friends, neighbours). The importance of family context for the development of socio-cognitive skills not only include the factors like family's socioeconomic status and the mother's occupational level, but also level of stimulation provided by the family, physical environment and general family situation (82). The benefit of social support appears to influence the competence even when they are adolescents (83).

## 4.3. Maternal depression as a potential mediator of child health and development outcomes

Outcomes such as infant growth and cognitive development are the result of complex causal chains, and there may be a variety of pathways through which risk factors work together to influence the outcome. Kraemer and colleagues (2001), building on

the theoretical approaches from sociology, psychology, epidemiology, clinical trials and basic sciences, classified risk factors as moderators, mediators, proxy risk factors and overlapping risk factors to help understand the aetiology of complex disorders. Conceptually, a *mediator* is a variable that explains how or why another variable affects the outcome. For example, in the context of maternal depression, disability in depressed mothers (and consequent deficiency in child care) may explain why their infants are more malnourished, and thus act as a mediator. A *moderator* specifies on whom and under what conditions another variable will operate to produce the outcome. Thus, mothers lacking social support, when depressed, may not be able to cope with child care on their own, leading to poor health outcomes in their infants. Lack of social support would then be a moderator in the association between maternal depression and infant health. Terms such as "vulnerability" or "resiliency" may correspond to moderators.

A *"proxy"* risk factor may be defined as any correlate of a strong risk factor that may also appear to be a risk factor for the same outcome. Thus, lack of social support may itself be a risk factor for poor infant health, but could more appropriately be termed a proxy risk factor because of its association with maternal depression, which is the more dominant or proximal risk factor. Finally, *"overlapping"* risk factors may be two factors that are correlated and co-dominant, and neither has temporal precedence. Maternal and paternal educational status may be overlapping risk factors: each on its own may not be sufficient to produce an outcome but their combined effect might suffice. Many of the psychoscial risk factors reviewed in chapter 3, could potentially be independant, proxy, or overlapping risk factors, while at the same time  be on the pathway of maternal depression mediating the negative outcomes. Figure 7, illustrates a conceptual framework of the possible relationship between maternal depression, other risk factors and child outcomes, based on this classification:

**Moderators and proxy risk factors**

- Socio-economic status
- Social support
- Protective traditional practices
- Maternal status and empowerment
- Parental education
- Four or more children
- Life events
- Maternal physical health

**Maternal depression**

**Mediators**

- Disability in mother
- Quality of child care including feeding
- Mother-child interaction
- Health seeking behaviour

**Infant physical health outcomes**

Malnutrition

Poor cognitive development

FIGURE 7: A CONCEPTUAL FRAMEWORK, ILLUSTRATING RELATIONSHIP OF MATERNAL DEPRESSION WITH INFANT HEALTH

Elaborating upon the above model, it is possible to discuss mechanisms that potentially link maternal depression to child health before the evidence on the impact of maternal depression on child health is presented. Rahman and colleagues hypothesize three such potential sets of mechanisms (84).

First, in low income settings, access to antenatal care is difficult and maternal depression could influence the woman's health seeking behaviours (84) – for example a lack of motivation to seek antenatal care. This could lead to problems at the time of childbirth and hence increased chances of infant morbidity and mortality. Moreover, depression is also associated with unhealthy life styles including smoking and substance abuse, which could increase the risk to the foetus (85).

The second set of mechanisms involves the direct impact of depression on parenting, especially the lack of interaction with the child and inability to provide optimal care. This is supported by evidence from low-income countries - a review in 2004 concluded that postnatal depression is associated with disability among mothers in South Asia (86), which directly impacts the quality of parenting.

A third potential mechanism is negative life events such as financial hardships, or marital and family conflicts associated with maternal depression. Such adversities could contribute to poor self esteem and a lack of confidence in one's abilities to provide care (84). This is supported by a study from Jamaica suggesting that depressed mood, poor parenting, low self esteem, and inability to provide a stimulating environment to children aged 9-30 months (87). Others have described similar models (88) with a number of proposed mechanisms summarized in

Figure 8.
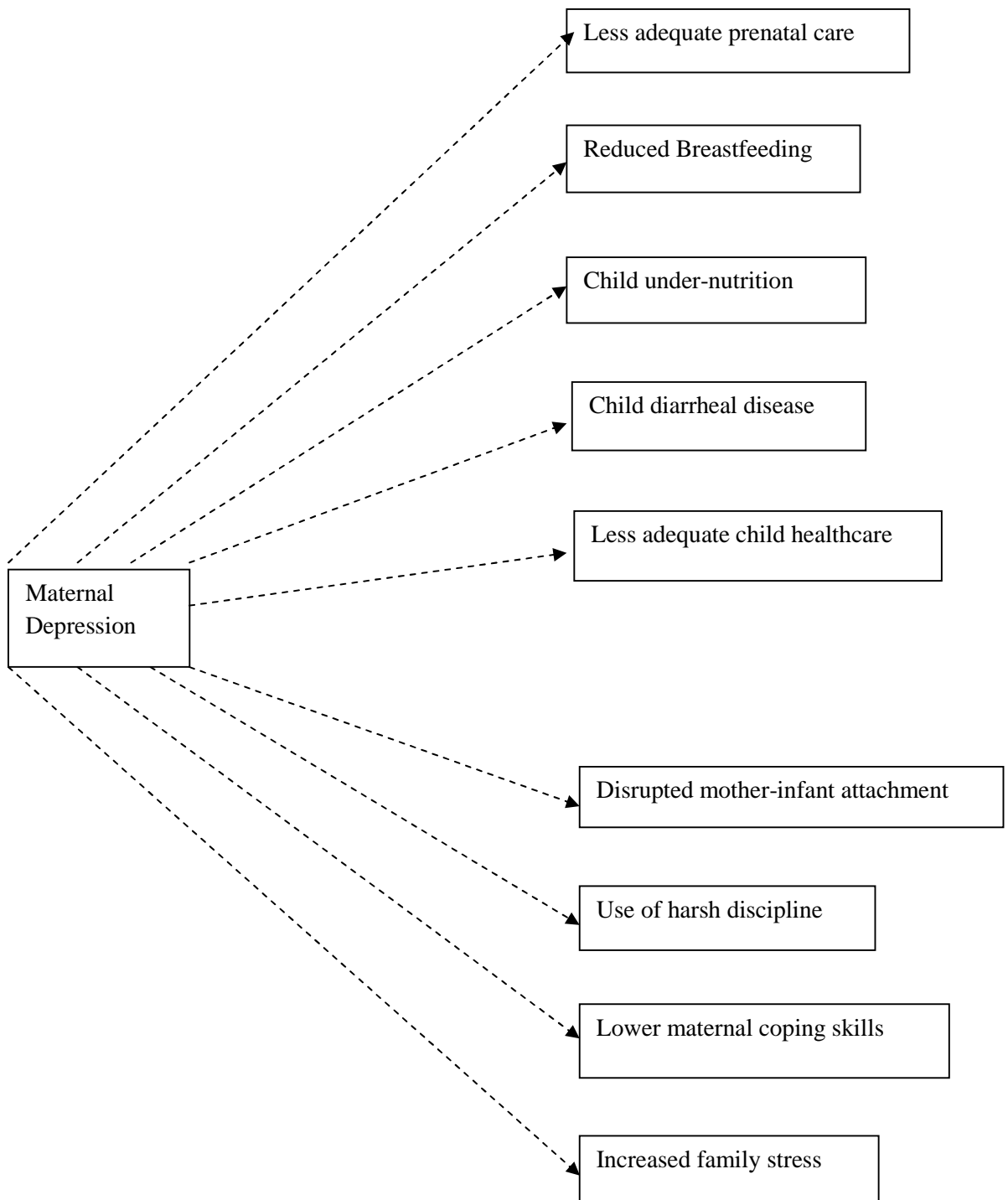
**FIGURE 8: PROPOSED MECHANISMS FOR CHILD OUTCOMES RESULTING FROM MATERNAL DEPRESSION**

These models stand up to available global evidence linking maternal depression to child growth. A systematic review and meta-analysis examined this relationship in studies conducted in low and middle-income countries (89). Six databases were searched for studies from LMIC on maternal depression and child growth. Data of 13,923 mother and child pairs from 11 countries, up to 2010 were analyzed. Rigorous meta-analytical methods were followed and pooled odds ratios (ORs) were calculated for the subsets that met a strict criteria on study design, exposure to maternal depression and outcome variables. The study revealed a significant positive association between maternal depression and impaired child growth (89). The children of mothers with depression or depressive symptoms were more likely to be underweight (OR: 1.5; 95% confidence interval, CI: 1.2-1.8) or stunted (OR: 1.4; 95% CI: 1.2-1.7). The selected studies indicated that if the infant population were entirely unexposed to maternal depressive symptoms 23% to 29% fewer children would be underweight or stunted (89).

The review included two studies from Pakistan (one case control and a cohort study) conducted in the study area of the current research (90, 91) (Table 12). In the case control study SRQ (self reporting questionnaire) was used at 9.7 m postnatal in a representative sample which revealed an unadjusted Odds ratio (OR) of 3.9 (95% CI: 1.9–7.8) and adjusted OR of 2.8 (95% CI: 1.2–6.8) for depression in underweight infants (90).

In the cohort study prenatal depression lead to underweight at 6 months (adjusted OR: 3.5, 95% CI: 1.5–8.6) and stunting at 6 months (adjusted OR: 3.2, 95% CI: 1.1–9.9); underweight at 12 months (adjusted OR: 3.0, 95% CI: 1.5–6.0); and stunting at 12 months (adjusted OR: 2.8, 95% CI: 1.3–6.1) (91).

## TABLE 12: EFFECT OF MATERNAL DEPRESSION ON CHILD WEIGHT AND STUNTING IN PAKISTAN

| Study | Measure of Depressive symptoms | Mothers with depressive symptoms ( %) | Underweight or stunted children (%) | Adjusted OR |
|-------|-------|-------|-------|-------|
| **Underweight** | | | | |
| Rahman 2004 Case-control | SRQ* | 40% | 48% | 2.8 (95% CI: 1.2–6.8) |
| Rahman 2004 Cohort | SCAN* | 25% | 18% | At 6 m= 3.5, 95% CI: 1.5–8.6 |
| **Stunting** | | | | |
| Rahman 2004 | SCAN | 25% | 10% | At 6 m= 3.2, 95% CI: 1.1–9.9 |

* Self reported questionnaire (SRQ) *Schedules for Clinical Assessment in Neuropsychiatry (SCAN)

In addition to child growth, maternal depression has also been identified as a risk factor for poor **child cognitive development** in a review paper exploring the biological and psychosocial risk factors for children under 5 years of age in developing countries who are not fulfilling their developmental potential (92).

In addition to child growth and cognitive development, maternal depression has been linked to other negative physical and socio-emotional outcomes in low and middle-

income countries (33). These include behaviour problems, childhood depression, low academic performance, and problems in breast feeding (33).

## 4.4. Conclusions and Summary

In this chapter, the impact of various psychosocial risk factors including maternal depression, on an array of child health and developmental outcomes, has been examined. An integrated model has been suggested, where psychosocial risk factors act both independently, and by mediation through maternal depression, to produce these outcomes. In the last decade, impressive evidence has accumulated from systematic reviews and meta-analyses that support such a model. This evidence indicates that psychosocial factors, particularly maternal depression, need to be addressed if child health and development programmes are to succeed. The current state of evidence about the effectiveness of interventions targeting maternal depression is reviewed in the next chapter, and a case is made for the development of universal interventions that can be integrated into child health programmes.

**5. Chapter Five: Interventions addressing maternal depression and psychosocial wellbeing in low and middle income countries**

## 5.1. Introduction

This chapter reviews recent evidence on interventions that have been used for maternal depression in LMICs. Various psychosocial approaches used in these interventions are examined. In the light of the existing evidence the plausibility of interventions that can be used to develop a universal approach for maternal psychosocial wellbeing is discussed. This is followed by a brief description of the Thinking Healthy Program (THP), which forms the theoretical basis for the intervention developed for this PhD research, and reasons why this intervention was selected for adaptation. Finally maternal psychosocial wellbeing and its integration into child nutrition and development interventions are reviewed.

## 5.2. Interventions for maternal depression in low and middle income countries

A scoping exercise using Medline and Psych Info was conducted using the key words 'intervention,' 'therapy,' 'treatment,' 'counselling,' in combination with 'maternal depression,' 'antenatal depression', 'perinatal depression,' and 'postnatal depression', and 'low and middle-income countries,' and 'developing countries'. Four review articles (two narrative and 2 systematic) were found on interventions for maternal depression in LMICs, and are discussed below.

A narrative review in 2009 by Wachs and colleagues gave examples of successful psychosocial interventions in LMICs that targeted maternal depression and utilized existing health and community resources (33). A key strategy in many of the interventions reviewed was strengthening social support for the mothers who were depressed or at risk of depression. Evidence of effectiveness of such strategies included a randomized controlled trial from Pakistan conducted in 2003 where trained women from the local community provided weekly social support-based counselling for 8 weeks to depressed women, resulting in a significant reduction in depressive symptoms (33).

More recently, a systematic review of interventions for common perinatal mental disorders (CPMDs), which include anxiety and depression, examined the effectiveness of 13 randomized controlled trials representing 20092 participants in

LMICs (2) in the past 20 years (up to Dec 2012). The pooled effect size for maternal depression was –0.38 (95% confidence interval: –0.56 to –0.21; $I2$ = 79.9%). Where assessed, benefits to the child included improved mother–infant interaction, better cognitive development and growth, reduced diarrhoeal episodes and increased immunization rates. The review concluded that the burden of CPMDs can be reduced through mental health interventions delivered by supervised non-specialists, and such interventions are also beneficial for their children (2). The interventional strategies used are summarized in Table 13 and discussed below.

TABLE 13: PSYCHOLOGICAL APPROACHES USED TO TREAT MATERNAL DEPRESSION IN LMICS

| Psychosocial approaches used to treat maternal depression in LMICs | |
|---|---|
| Author/year/country | Intervention |
| Mao et al., 2012. China (93) | Emotional self- management |
| Gao et al., 2011. China (94) | Interpersonal therapy |
| Rojas et al., 2007. Chile (95) | psycho-education and pharmacotherapy |
| Tezel, 2005. Turkey (96) | Problem solving skills |
| Chen et al., 2000. Taiwan (97) | Support group |
| Cooper et al., 2009 (98), South Africa | Health visitor delivered responsive parenting programme |
| Rahman et al., 2008, Pakistan | Cognitive Behaviour Therapy |

In China, Mao et al. (93) used emotional self-management with women attending antenatal clinics. The intervention comprised of psycho-education to help the women recognize the psychological symptoms related to depression and use culturally adapted cognitive behaviour approaches of problem solving, improving self

confidence and positive communication. Both group sessions and individual counselling sessions were utilized.

In another study in China by Gao et al., 2012 (94) employed Interpersonal therapy and integrated the counselling into an existing hospital-based antenatal education programme. The psycho-education included information about transition to motherhood, other health information, skills to communicate about one's distress, developing social support networks, and skills for resolving interpersonal conflicts.

Rojas et al (95) used psycho-education to improve the pharmacotherapy and treatment compliance for perinatal depression. The intervention was delivered by professionals, and focused on symptom recognition and management, including problem-solving and behavioural strategies.

In Turkey, Tezel et al compared a simple problem-solving approach with nursing care (96) and both were found to be effective. In South Africa, Cooper and colleagues (98) did not address maternal depression directly, but used individual parenting education provided by a supportive home visitor. The intervention only slightly improved maternal depression but had a significantly positive effect on mother-infant interactions. In Taiwan, Chen et al., (97) utilized support groups to help in stress management and communication in depressed postnatal women.

Rahman et al.'s (11) approach in the Thinking Healthy Programme (THP) was included in the review. It consisted of cognitive behaviour therapy principles to identify and modify maladaptive thinking styles and substitute them with positive thinking, in addition to providing psycho-education, support and problem-solving strategies to mothers. It is discussed in further detail in section 5.3.

The narrative review by Chowdhary et al published in 2014 (99), examined the content and delivery of some of the psychological interventions for perinatal depression by non-specialist health workers in low and middle income countries that were reviewed in earlier systematic reviews, in further detail. Nine studies were selected which shared some key features of content and delivery. The review concluded that interventions were more likely to be successful if they included the child as the benefiter and engaged other family members. Moreover, if the delivery of intervention was implemented through routine maternal and child health care,

starting in the antenatal period and extending in the postnatal period, it was more successful.

The most recent systematic review and meta-analysis by Clarke et al. (100), published in 2013, reviews most of the studies included in previous reviews, and comes to similar conclusions. The meta-analysis found stronger evidence for the efficacy of psychological interventions (like CBT and interpersonal therapy), compared to health promotion interventions (100), and interventions delivered during pregnancy and in the postnatal period had a significant overall effect compared to usual care. It also supported the evidence-base for effectiveness of psychosocial interventions implemented by non-mental health specialists in LMICs.

## 5.3. The Thinking Healthy Program (THP)

The theoretical basis for this research project, i.e., the development of an evidence-based, feasible and acceptable intervention for maternal psychosocial wellbeing, originated from the Thinking Healthy Programme (THP), developed for the management of maternal depression, in a low-income rural setting in Rawalpindi, Pakistan (11). The THP is based on principles of cognitive behavioural therapy (CBT), which is the most widely researched and evidence-based form of talking therapy (101). THP adapted the techniques of CBT so that these could be used by CHWs working with women suffering from perinatal depression in rural Pakistan. Briefly, the intervention consisted of 16 home delivered individual sessions—four weekly sessions in the last month of pregnancy, three fortnightly sessions in the first postnatal month, and nine monthly sessions there- after.

THP was a targeted intervention for women suffering from perinatal depression. The author's aim in this project was to adapt the THP so it could be delivered as a *universal* intervention to all women living in conditions of psychosocial adversity. The aims and objectives of this project are further elaborated in the next chapter, but some of the strategies used in the Thinking Healthy Programme are described in further detail below.

### 5.3.1. Cognitive Behavioural Therapy

CBT is one of the fastest developing fields in psychotherapy (102). The therapy, delivered by trained mental health specialists helps people recognize and gently challenge the thoughts and emotions that lead to the unhelpful behaviour patterns that characterize depression. The word 'Cognitive' refers to thoughts and 'behaviour' refers to actions that take place as a reaction to the thoughts. This talking therapy aids clients in altering the unhealthy or unhelpful thinking patterns and as a result brings about a change in unhelpful or undesirable patterns of behaviour. CBT has proved to be very effective in breaking this unhealthy cycle especially in people who have lack of confidence, depression, and difficulty with relationships. The cognitive approach of the therapy focuses on altering the ways of thinking into more helpful or adaptive patterns. In the case of mothers, this can help change their perceptions, beliefs, fears and opinions about themselves, significant others, and their parenting abilities. The behavioural aspect of CBT helps the mother in taking actions that have desirable results. The clients in CBT are given "homework" or assignments to speed up the progress. Imagery is a powerful tool that is utilized in CBT. The client recalls an image and then is encouraged to modify the image by thinking positively. Further details of the Thinking Healthy Programme can be found in the THP Training Manual available at http://hdrfoundation.org/docs/training/THINKING%20HEALTHY%20PROGRAMME%20FULL%20MANUAL.pdf.

### 5.3.2. Adaptation of Cognitive Behaviour Therapy in Thinking Healthy Program

The main adaptations to the CBT approach included the following;

- A child focused approach to address maternal depression because of the stigma attached to mental health issues
- Illustrations that were culturally appropriate were used as imagery that helped mothers easily form their own mental images. Active involvement of the whole family to support the mother

The three areas of THP include the mother's personal health, mother infant relationship and relationship with others for social support. The THP cognitive behaviour therapy techniques include training LHWs to use active listening skills while communicating with mothers so that they can learn about the unhealthy or unhelpful thinking patterns and then guiding mothers to gently consider alternative healthy or more helpful patterns of thinking. Collaboration with the family is considered an important component to gain their support. To practice new behaviours between sessions, "homework" and activities are suggested to the mothers to practice in between the sessions and putting what has been learned into practice. These were applied to health workers' routine practice.

The strength of the THP intervention lies in its simplicity and applicability in the community settings through community health workers. It is also an evidence-based intervention, tested through one of the largest cluster randomized trials of a psychological intervention in low-income settings (11) . The target population in the trial was representative of rural population and hence the intervention can be generalized to other rural settings. The intervention, control and the outcomes were explicitly described and standard tools were used for measurement. The randomization was adequate and both intervention and control groups were treated in the same way, by providing routine care to the control. The cluster-randomized trial revealed that the intervention more than halved the rates of depression in prenatally depressed women compared with those receiving enhanced routine care.

Moreover the intervention had some other affects that are important in the context of early child development. These included higher immunization rates, less episodes of diarrhoea, parents spending more time playing with their infants and higher contraceptive use than those in the control group.

In summary, of all the interventions reviewed, the Thinking Healthy Programme was based on the therapy with the strongest evidence-base, achieved the best effect size, and had been delivered in real-life settings, largely integrated into a community-based health system in a low-income setting. For these reasons, the intervention was selected for adaptation from a targeted intervention for depressed mothers to a universal intervention for all mothers.

## 5.4. The case for integrating interventions for maternal psychosocial wellbeing into maternal and child health platforms

We have seen from subsequent sections that maternal mental health, specifically maternal depression, is a significant public health problem, which is associated with negative outcomes for women, their children and families. Maternal psychosocial wellbeing, maternal depression and child outcomes are inextricably linked through multiple pathways, some of which have been captured in Figure 7. It would therefore make sense to have interventions that are integrated so that these can have a synergistic effect, and benefit not just maternal and child health programmes but also mental health programmes. The case for integration is gaining considerable momentum in recent years (1). Some of the advantages have been discussed before. These include; integrated MCH and mental health approach prevents working in 'silos'(103), integrated approach being more attractive to community, MCH platforms is suited to taking into account the psychosocial wellbeing across the life course and MCH programmes becoming more effective as a result of integrating mental health care. Conversely, there are benefits for mental health programmes – we have seen from this chapter that effective treatments exist for maternal depression, but few patients have access to such treatments. In many low-and middle-income countries, the ratio of specialist to population is 1:0.5 million and in some, as low as 1:4 million. Even in high income countries only 2 in 10 adults and an even less children, with common mental health problems receive care from a mental health specialist in any given year. As MCH programmes are population and community-based, these are more likely to provide equitable care, especially to rural and difficult-to-access communities.

The challenges of integrated interventions include workload, communication, coordination, common language and measurement (104). These are not insurmountable, and it is likely that the benefits will outweigh the costs. In spite of these benefits, there are no interventions for maternal psychosocial wellbeing that can be integrated into maternal and child health platforms at scale. The research is an attempt to develop and pilot such an intervention.

## 5.5. Summary and conclusions

A review of research over the last 2 decades shows that there has been impressive progress in the development and evaluation of psychosocial interventions for maternal mental health, specifically maternal depression, in low and middle-income countries. Most of these interventions are delivered by non-specialists, and have reasonable evidence for effectiveness. Such interventions benefit not only the mother but also the child. There is a strong case for integrating these interventions into maternal and child health programmes. However, there is a large gap in research in this area. This PhD research is an attempt to address this gap. The aims and objectives of this research are described in the next chapter.

# 6. Chapter Six: Aims and Objectives

## 6.1. Summary of the literature review

The literature review began with an examination of the various dimensions of maternal psychosocial wellbeing – from the sociological, psychological and public health perspectives. Social factors, such as social support, interpersonal relationships, gender discrimination and lack of empowerment; and psychological factors such as poor self-esteem and motivation, poor coping and problem-solving abilities and unhealthy lifestyles were discussed.

From a public maternal health perspective, maternal depression was identified as an important outcome as well as indicator of poor maternal psychosocial wellbeing. The contemporary epidemiological research on maternal depression was reviewed, both to gauge the public health significance of the problem as well as to explore its associations with various dimensions of wellbeing. It was established that every third to fifth woman in low-income settings has clinical depression.

The impact of maternal depression on infant outcomes, including physical and cognitive development was reviewed, and found to be strongly and independently associated. The high prevalence of maternal depression coupled with its serious negative impact on child development, made a compelling argument for intervention in this area.

A review of research over the last 2 decades shows that there has been impressive progress in the development and evaluation of psychosocial interventions for maternal mental health, specifically maternal depression, in low and middle-income countries. Most of these interventions are delivered by non-specialists, and have reasonable evidence for effectiveness. Such interventions benefit not only the mother but also the child. One particular intervention, the Thinking Healthy Programme, evaluated in Pakistan, was discussed in greater detail due to its relevance to the current research. There is a strong case for integrating these interventions into maternal and child health programmes. However, there is a large gap in research in this area. This PhD research is an attempt to address this gap.

## 6.2. The SPRING Study – the setting for the research

In April 2011, work began in Pakistan on SPRING (Sustainable Program Incorporating Nutrition & Games), a 5-year program to develop an innovative, feasible, affordable and sustainable community-based approach that could achieve delivery at scale of known effective interventions that would maximize child development, growth and survival. The program would be delivered by existing cadres of low-cost community based health workers called Lady Health Workers (LHWs) in Pakistan; through home visits carried out during pregnancy, immediately post birth, the postpartum period and infancy. SPRING would incorporate the WHO/UNICEF Care for Development Package which provided comprehensive guidance on counseling families on care to improve feeding practices and interactions with children.

This provided an opportunity as a platform through which an intervention for maternal psychosocial wellbeing could be developed and integrated into SPRING, and a pilot study conducted to test its feasibility.

## 6.3. Aims of the study

The study has two broad aims:

1.      To adapt and integrate an intervention for maternal depression (the Thinking Healthy Programme) into a universal intervention for maternal psychosocial wellbeing and integrate it into a programme for child health, care and development (The SPRING Programme).

2.  To evaluate the feasibility of the intervention through a pilot feasibility study in one rural area in Pakistan.

### 6.4. Objectives of the study

To address these broader aims, the study is conducted in two phases, each phase having its specific objectives.

**Objectives of Phase 1 (Development Phase)**

a) To conduct qualitative studies with intended recipients, family members and care providers to:

- Understand the potential maternal psychosocial stressors that impact upon child care and development.
- Inform the selection and adaptation of strategies from the Thinking Healthy programme that could address the maternal psychosocial issues identified, and,
- Understand the delivery context.

b) Based on the above information, integrate the intervention for maternal psychosocial wellbeing into the child development intervention.

**Objectives of Phase 2 (feasibility study)**

- To assess the feasibility and acceptability of the intervention when delivered by trained community health workers in real life settings.

# 7. Chapter Seven: Development phase: Qualitative study

## A) Methods

## 7.1. Introduction

This chapter describes the first phase of the study i.e. the **development phase**. The key methods related to this phase are shown in Figure 9, and Table 14. This phase is the key to selecting appropriate evidence-based strategies that can be implemented in the real world, and in understanding the influence and impact of contextual factors, perceptions and acceptance of the stakeholders' and the need for adaptation.
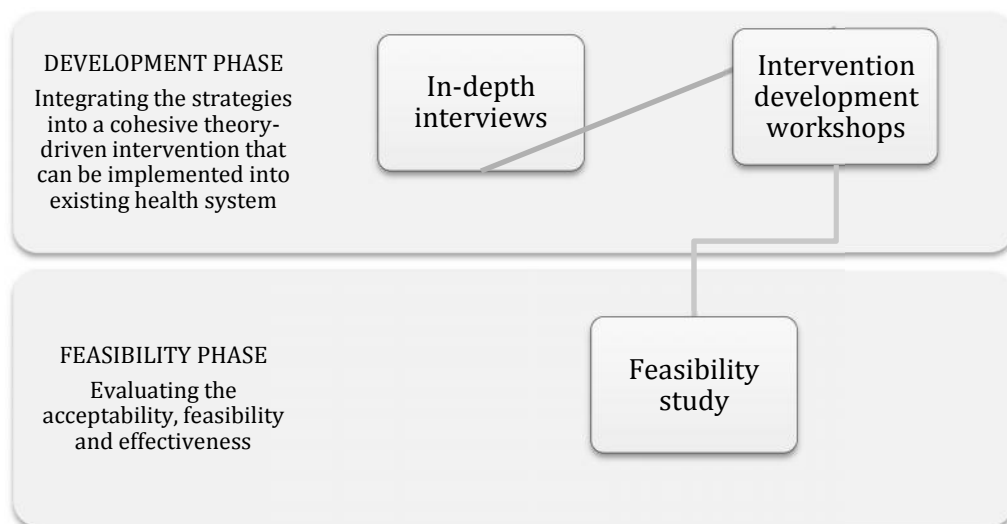


**FIGURE 9: PHASES OF THE PHD STUDY**

**TABLE 14: METHODS USED FOR THE TWO PHASES OF THE PHD STUDY**

| Phase | Method | Explanation |
|---|---|---|
| Integrating the strategies into a cohesive theory-driven intervention that can be implemented into existing health system | In-depth interviews | Conducted with intended recipients, family members and care providers to a) inform selection of strategies that address key issues, and; b) understand the delivery context |
| | Intervention development workshops | Workshops with local and international and with the International Investigators to design the psychological treatment based on the strategies identified in IDIs |
| Evaluating the acceptability, feasibility and effectiveness | Pilot study | Evaluation of the treatment when delivered by trained non-specialists in real life settings |

The choice of the study design is discussed. The methods are reported in detail according to the consolidated criteria for reporting in qualitative studies (COREQ) (Appendix 2) (105). The study area and the process of obtaining the sample for this phase of the study are described. This is followed by a description of the instruments used for this phase.

## 7.2. Methods

### 7.2.1. Methodological approaches

As described in chapter one, the choice of methods was underpinned by the MRC Guidelines for development and evaluation of complex interventions, and informed by the PREMIUM Programme, a major Wellcome Trust funded study in neighbouring India, with aim to develop protocols for adaptation and implementation of psychological treatments for mental disorders (99, 106, 107) . The PREMIUM protocol is summarized in Figure 3, and Table 1. The protocol was developed after a systematic review of studies where an existing psychosocial intervention had been adapted to the local culture, context or specific population (107). A key part of this process was the qualitative research required to inform any subsequent adaptations. The qualitative research is focused on understanding what evidence-based strategies are required, and would work in a particular context and population. The qualitative research would also help understand the delivery context, so that the psychosocial intervention could be tailored to the educational and skills level of the person who would deliver it.

The methodological approach underlying the qualitative research was based on the principles of Grounded Theory. Grounded theory was developed by Glaser and Strauss (108). Its main thrust is to generate information regarding social phenomena: that is, to develop higher level understanding that is "grounded" in, or derived from, a systematic collection and analysis of data. Grounded theory is appropriate when the study of social interactions or experiences aims to explain a process, not to test or verify an existing theory (109).  In the context of health services or intervention research, Grounded theory might involve interviewing various stakeholders who are key persons in the care trajectory, who might offer different perspectives. Data collection proceeds in an iterative fashion, leading to further adaptations of the data collection process to refine and inform the emerging theory how the intervention needs to be adapted to fit the context of this particular population and problem. The questions are approached with some background assumptions and familiarity with

the literature in the domain. The 'theory', or information required to achieve the key objectives of the study, emerges through a close and careful analysis of the data.

Key features of grounded theory as applied to health services research are its iterative study design, theoretical (purposive) sampling, and system of analysis by constant comparison (109). An iterative study design entails cycles of simultaneous data collection and analysis, where analysis informs the next cycle of data collection. In this study of psychosocial stressors while caring for a young child, for instance, preliminary analysis of interviews with key participants may suggest a theme of "lack of support," and this theme could be refined by interviewing different participants who might be involved in supporting the mother in child care, who might offer different perspectives. This information can help explore how mother can use her time more effectively for the child, using the opportunity of shared care.

Analysis of the subsequent phase of data collection will lead to further adaptations of the data collection process to refine and inform the emerging information about social support. The central principle of data analysis in grounded theory research is constant comparison. As issues of interest are noted in the data, they are compared with other examples for similarities and differences. Through the process of constant comparison, emerging new information is continually refined through comparisons with "fresh" examples from ongoing data collection, which produces the richness that is typical of grounded theory analysis.

In the present study, the manner in which the key steps of the grounded theory were approached (iterative process of data collection, theoretical sampling, and system of analysis were applied in practice) are described in the relevant sections.

**7.2.2.** **Study area**

The study was conducted in the Punjab province of Pakistan. Out of the four provinces of Pakistan, Punjab (Figure 10) is the most developed, populous, and prosperous, with approximately 55% of the country's total population living in this province (110).



**FIGURE 10: PROVINCES AND DISTRICTS OF PAKISTAN (HTTP://GUJRATCAFE.WORDPRESS.COM)**

District Rawalpindi is one of the 36 districts of Punjab province and Gujar Khan is its largest sub-district, the locale where the current study was conducted (Figure 11).
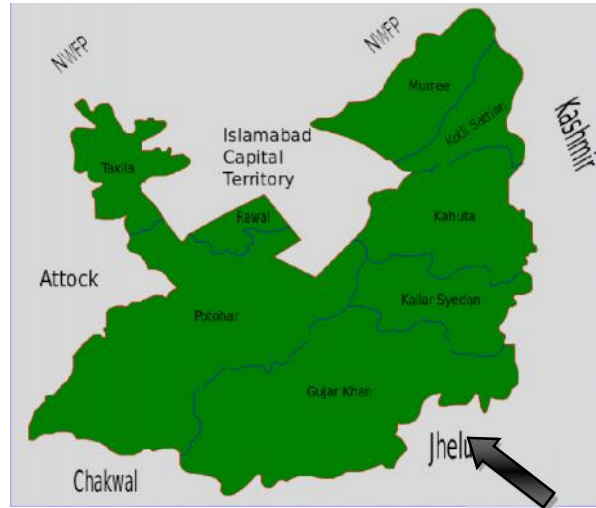
**FIGURE 11: ADMINISTRATIVE SUB-DIVISIONS OF RAWALPINDI DISTRICT**

**(SOURCE;HTTP://EN.WIKIPEDIA.ORG/WIKI/FILE:RAWALPINDI_DISTRICT_SUB_D IV.SVG)**

The sub-district (*Tehsil)* Gujar khan has a population of 493,000 and has 33 union councils (the smallest administrative unit). The union councils of Gujar Khan have mixed percentages of different demographic indicators (Appendix 3).

### 7.2.2.1.    *Union Councils selected for the study*

For the study, four union councils located at variable distance from the main town of Gujar Khan were selected to ensure maximum geographical representation of the study area. Selected union councils according to this criterion have been shown with red circles in the figure (Figure 12). These include Jatli, Kalyam, Sukhoand Jand Melo. The proposed union councils are located at a distance ranging from a minimum of 10 kilometres (Jand Melo) to a maximum of 40 kilometers (Jatli) from the central point.
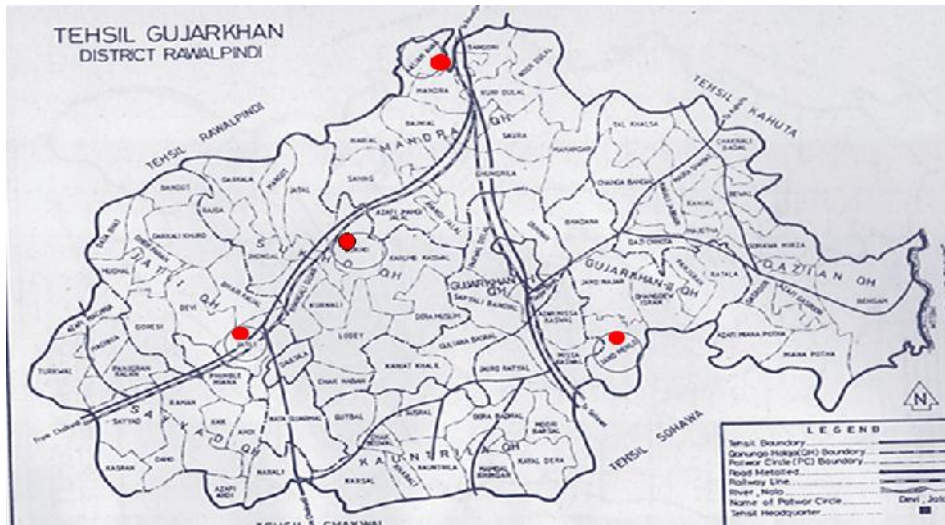
**FIGURE 12: STUDY UNION COUNCILS**



**FIGURE 13: THE STUDY AREA**

The four union councils have similar gender distribution and educational status (Table 15). Majority of the households have brick construction and have electricity. Majority use wood as cooking fuel and wells are used as the primary source of water.

**TABLE 15: SOCIOECONOMIC INDICATORS OF THE SELECTED UNION COUNCILS**

**(SOURCE: CENSUS REPORT, DISTRICT RAWALPINDI, 1998)**

| Union Councils | | Jatli | Kaliam Awan | Sukho | Jhand Mahlo |
|---|---|---|---|---|---|
| Total Population | | 13606 | 13661 | 15154 | 14705 |
| Male % | | 46 % | 48% | 46% | 48% |
| Female % | | 53% | 52% | 54% | 52% |
| Literacy ratio % | | 70% | 67% | 70% | 63% |
| Education 5$^{th}$ to 9$^{th}$ grade* | Male | 17% | 19% | 18% | 18% |
| | Female | 11% | 12% | 13% | 11% |
| Education 10$^{th}$ grade & above | Male | 7% | 7% | 7% | 4% |
| | Female | 6% | 4% | 5% | 2% |
| Housing Units by Types | Brick | 85% | 81% | 77% | 74% |
| | Semi Brick | 2% | 16% | 19% | 24% |
| | Mud | 3% | 2% | 4% | 2% |
| | Total | 2275 | 2261 | 2467 | 2380 |
| Source of drinking water | Piped water | 5% | 5% | 8% | 8% |
| | Hand Pump | 26% | 9% | 28% | 18% |
| | Well | 30% | 25% | 26% | 22% |
| Source of Light | Electricity | 90% | 94% | 95% | 91% |
| | oil | 8% | 4% | 4% | 9% |
| Cooking fuel | Wood | 58% | 77% | 63% | 77% |
| | oil | 1% | 3% | 7% | 13% |
| | Gas | 2% | 2% | 3% | 2% |

*Grade 5 means 5 yrs of primary education and 10 means 10 yrs of secondary education.

### 7.2.3.    Qualitative methods used

The qualitative methodology used for the development phase of the study included in-depth interviews, narratives and observations, to get a holistic understanding about the topic. In-depth interviews were used to gather information about maternal psychosocial wellbeing and child care from women, their mothers in law and husbands.

In the development phase, direct unstructured observations were also used for observing practices related to child care and factors that might affect maternal psychosocial wellbeing in the household. These observations were overt and the observer was a non- participant. Narratives are used in the current study to get an idea about a usual day in the routine life of a mother and hence get an insight into the maternal wellbeing and how a mother narrates her interaction with the child and her practices related to this.

### 7.2.4.    Research team

The research team comprised of the PhD student, a field coordinator and two pairs of moderators and note-takers collectively termed as field workers. The author conducted majority of in depth interviews, observations and narratives (36/53).

The student is a Pakistani citizen, residing in Islamabad, about 65 miles from the study area. She has the same first language as the research participants, and is from a similar cultural background. Coming from a clinical reproductive health background (section 1.1 ), she has a deep understanding of maternal health issues. She is experienced in carrying out qualitative interviews.

The field coordinators had more than 5 years' experience of working with communities and lady health workers (LHWs), and coordinating data collection at the research site. The moderators were women, having a background in anthropology or sociology (Masters Degree), and 2-5 years' experience of field-work, and of

exploring various health and social issues among local population. The researchers did not have any interaction with the study population before the study.

A training workshop for the research team was conducted by the author. The team was introduced to the study, its methodology, background of each single question in all the guides, and the way to pose the question was also illustrated. See training module in (Appendix 4).

### 7.2.5. Participant selection

#### 7.2.5.1. *Participants*

Mothers, fathers and grandmothers are the important stakeholders in a household who can influence child development and give insight into maternal psychosocial wellbeing. They were purposively selected for face-to-face in-depth interviews. The challenges that are faced by a pregnant woman can be different from that of a mother who is rearing a young child, hence both were sampled. To get a representation of different age ranges of children, opinions were sought from 3 groups of mothers; mothers of children 0-6 months, 7-12 months and 13-24 months.

Community health workers called lady health workers (LHWs) provide antenatal and child care and each LHW is responsible for a population of 1500. Since the LHWs were proposed to be the main delivery agents for the intervention, their perceptions, and views were important to be captured.

LHW supervisors, who are the LHW programme trainers were sampled to get an idea about LHW work and their views.

### 7.2.6. Sampling

The 'purposive' sampling technique (111) was chosen for the current study. This means that the informants were deliberately selected due to certain qualities the

informant possessed or by virtue of knowledge or experience, to get maximum information about the area under research. For example pregnant women, mothers of young children, grandmothers, fathers from various socioeconomic and educational back grounds were chosen purposively to provide useful information about childcare and wellbeing. Purposive sampling was achieved as follows: LHWs maintain a list of households with pregnant women and children. LHWs working in the study area shared the lists of households and these lists were used for the selection of the study participants. The list also included information about the educational level of the women provided by the LHWs. Maternal education can be a determinant of practices at the family-level (112) (e.g. maternal nutrition and psychosocial wellbeing, infant and child's nutrition, child development) in which researcher was interested.

Similarly socioeconomic status of the family can also influence behaviours of our interest (113) and can be a helpful criterion for selecting fathers and grandmothers. A Likert scale (Appendix 5), previously used in the same area (11) was scored by the LHWs to grade the socio-economic status of each family in her list.

The participant selection was then done for each group (pregnant, mothers of 0-6, 7-12, 13-24, grandmothers, fathers) having an equal representation of the lower and upper socioeconomic status as well as educated and uneducated. Fathers and grandmothers were also selected based on the educational level of mother and socio-economic status (SES) of the family. The participant selection was done easily and the houses were approached through LHWs, which helped in attaining negligible refusal.

Lady Health Workers, and their supervisors were purposively selected based on their overall experience in the programme, experience specific to maternal and child health education and willingness to provide input to the intervention development. The sample size was determined by data saturation (114).

### 7.2.7.    Preparation of guides

#### 7.2.7.1.    *Interview, observation and narrative guides*

The psychosocial areas covered in the guides were prepared by the PhD student. In keeping with the grounded theory approach (115), the topics in the guides were informed by the objectives of the study, and the literature review presented in earlier sections. However, questions and probes were open ended, and not meant to test any existing theory but to provide new information that could assist in the adaptation of the psychosocial intervention. Separate guides (Appendix.6) were prepared for interviews with various stakeholders; observation and narrative were prepared in English and then translated into local language (Urdu). The back translation (116) was done by an independent translator.

Considering the objective of the study which was to adapt and integrate an evidence-based intervention, the questions related to the implementation aspect and maternal psychosocial wellbeing were added to the guides prepared for the SPRING trial.

The guides were prepared for in depth interviews with;

a)    Pregnant women

b)    Women with 0-6 m children

c)    Women with 7-24m children

d)    Husbands/ Fathers

e)    Grandmothers

f)    LHW

g)    LHW supervisors

And guides for;

h)    Observations of pregnant women and women with a child <2 yrs

i)    Narratives of pregnant women and women with a child <2 yrs

The ***in-depth interviews with women*** *(Appendix 6)* included questions on mother's general health, healthcare, wellbeing, worries/ stresses, diet and general nutrition, reasons for not getting appropriate nutrition if applicable, husband and family

support, isolation and loneliness, time available to rest, maternal psychological health related to child health, interaction with the child and its impact, family support for child care and decision making.

*Fathers* were asked about communication with the wife, his perception of the stressors for his wife, his role in problem solving, his role in childcare, and role of the family in child care, maternal nutrition and interaction with the child.

**Grandmother's** experiences and her role in child care, her support and role in the daughter in law's health, her relationship with the daughter in law, her worries, views about nutrition, decision making, interaction with the grandchild, and communication with the LHW.

*Lady health supervisors* (LHS) were asked about their work, training, supervision and monitoring of LHWs. *LHW s* were inquired about maternal and child nutrition, routine work and visits, communication with the rest of the family, child development, training and supervision, and their views on maternal psychosocial wellbeing.

The *Narratives* attempted to document a routine day in a woman's life. Mothers were asked to describe the previous day chronologically, in their own words. This mainly looked at her workload, child interaction, the level of support from the family and her feelings and perceptions. The interviewer would probe into the details if needed.

 The *Observations guides* were developed and the duration of observations was 4 hours. The main focus was the environment, mother/ family's interaction with the child, maternal involvement, family dynamics and support system.

### 7.2.7.2.       *Pilot testing of guides*

Piloting comprised of testing, refining and finalizing the qualitative research guides on IDIs, narratives of a day in the life and observations. Pilot testing was done in the field with 3 mothers and 2 LHWs. Additional probes were included in guides after piloting and some words were also rephrased to make those easier and more culturally acceptable.

### 7.2.8. Data collection

#### 7.2.8.1. *Setting for data collection*

Interviews, observations and narratives with mothers, fathers and grandmothers were carried out in the household at a place comfortable for the respondent as well as the research team. IDIs with LHWs were held at a place of their convenience; it was a health house or the respective basic health unit (BHU) if it was preferred by the LHW. Similarly Lady Health Supervisor (LHS) were interviewed at a place of their choice.

#### 7.2.8.2. *Audio Recording and Verbatim Note taking*

A team of two (moderator and note taker) visited each respondent on the agreed date and time. Majority of the interviews were conducted by the PhD student herself. The consent form included consent for audio recording and note taking, for the right of refusal and that the recordings would be used only for the research purpose.

For **in-depth interviews (IDI),** the moderator introduced the research and the team, obtained consent, carried out interview with the help of prompts in the guide, digitally-recorded it, and ensured that all objectives of the inquiry were satisfactorily met with. The note-taker took detailed verbatim notes of the discussions. Additional field notes were also taken. The average time of interviews was approximately an hour. Majority of women understood the questions and talked freely. The fact that interviews were conducted in a corner of the house helped in giving confidence to women to talk freely. In some cases the mother in law or other family members would join in, and then the interviewer would politely let them know that the team will get their view separately as well.

**Unstructured observations** of the case mother along with her child/ children <2 years were carried out in the household at a place where observing the child and mother was convenient, feasible, and the whole environment was comfortable for the

mother and child, and the observers. During the observation, if the mother or the child appeared unwell or needed medical attention, the observer would stop the observation and immediately refer the patient to the respective LHW. Notes were recorded according to the observation guide developed for this purpose. These notes were recorded on paper. The duration of the observations was 4 hours. The challenge was that women would treat the interviewer as a guest and would prefer to sit with them, which is the local culture .The interviewer had to explain, and that the mother should continue with her routine work, still at times this was difficult.

**Narratives** of pregnant women and the ones with children younger than 24 months were recorded to get a picture about a routine day. They were asked to narrate the previous day chronologically. This was audio-recorded and verbatim note taking was also done. Sometimes the narrative was too short, and then the interviewer had to probe to get relevant information. Whereas, some women would start with the previous day, but while describing would talk about their past experiences, which was useful information but keeping them focused was an issue.

## 7.3. Ethical considerations

The study was conducted after getting approval from the ethics committee of University of Liverpool and from the ethics department of Human Development Research Foundation. Permission of the family was sought through LHWs a day before the interviews. After the verbal consent was given by the family, research team visited the house next morning along with the local LHW.

Using an information and consent sheet in Urdu the research team introduced themselves and their organization, objectives of the research and what is expected of the participant, confidentiality, and respondent's right to disengage at any point during the process. The research team read out loud the information sheet and answered any relevant questions. Majority of the respondents lived in a joint family system and about 48% of the respondent women were educated and could read the information themselves. The information sheet and consent form are attached (Appendix-7). Special permission was obtained for photographs if any. This

information was presented in a manner and language that was understandable for rural populations. Since the family was always informed a day before the interview, there was no issue in getting written consent from women. However majority of women did this after informing the husband or the mother in law. Written consent was taken from the family prior to interview, observations and narratives. Interviews were done taking care of privacy of respondent and if some other family members tried to be part of the interview; situation was dealt by politely requesting privacy.

## 7.4. Data management

The notes and audio recordings were handed over to the data manager at the main office on the day of the interviews. The audio files were transferred onto a computer and the files were labelled. The raw data and the digital files were kept under lock and key at the research office.

## 7.5. Data analysis

### 7.5.1. Transcription
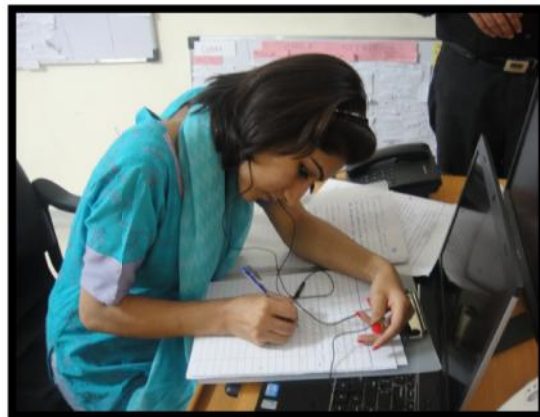


FIGURE 14: TRANSCRIPTION BEING DONE BY A RESEARCH ASSISTANT

Copies of digital recording and the notes were handed over to the interviewers for transcription on the same day. The interviewer would listen to the whole audio recording (Figure 14) and add to the verbatim notes wherever some information was

missing. The transcribed notes were photocopied and scanned to share with an independent reviewer through drop box. In the qualitative analysis, solitary process is not encouraged and involvement of an independent reviewer helps as a cross check, source of new ideas and cross fertilization.

### 7.5.1.1. *Daily Reflection Sessions and Data saturation*

To keep close to the objectives of the study, and to consider new areas that might emerge during the data collection process, daily reflections with the research team were carried out (Figure 15).



**FIGURE 15: REFLECTION SESSIONS IN PROGRESS**

The reflective sessions were attended by all the research team. The sessions were conducted to check if the research activities were unfolding as planned, collection of required information was taking place, to add additional probes if necessary, and to decide about data saturation. Sequential interviews were done and the process was iterative. The interviews were discussed and researchers reviewed each line of the notes, and gave comments to the research team for next interviews. A decision about data saturation was reached after discussion with all team members. The iterative nature of the process is a key feature of the Grounded theory approach.

### 7.5.1.2. *Method of analysis*

The method of data analysis was thematic. Thematic analysis focuses on deriving themes from the data (117). Thematic analysis is a feature of the grounded theory approach underlying the research, and the process is illustrated in Figure 16.
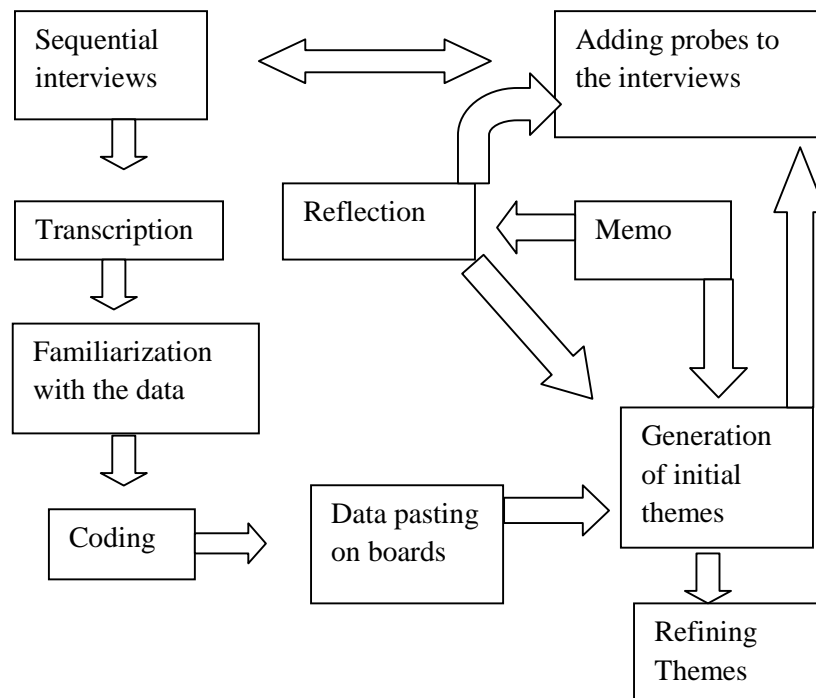
**FIGURE 16: PROCESS OF SIMULTANEOUS DATA COLLECTION AND ANALYSIS**

Following steps were followed for the thematic analysis.

1. *Familiarization with the data:* As a first step the interview notes were read and re-read to gain familiarity with the content. Data that addressed any of the research questions was marked. Preliminary start codes were listed in a journal, along with a description of each code.

2. *Generating initial codes:* Depending upon the research question, the data was then reduced into comprehensive codes by the researcher and an independent reviewer.

Data at this stage was reduced to categories that included segments of the data that shared a common category or code. The interviews were coded on photocopies of transcribed notes after highlighting the text (Figure 17). The codes developed independently by each interviewer were compared for inter coder reliability. About 90 % of the codes were similar and the rest were agreed upon after discussion. A description of the codes was prepared.
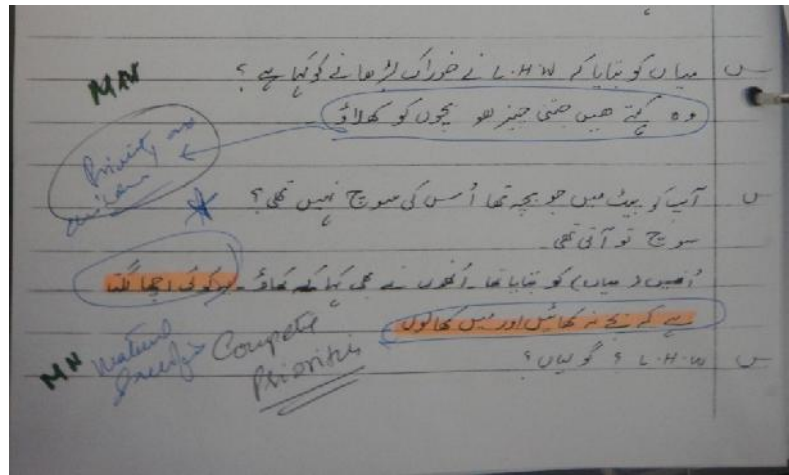


**FIGURE 17: CODING OF THE TRANSCRIPTS**

3. The data was simultaneously coded and analyzed (**constant comparative analysis**) so that concepts were developed by continually comparing specific incidents in the data, and after exploring the relationship to one another, an explanation was developed. This helped in deciding what data to gather next.

4. *Searching for Themes;* The data was photocopied and was cut and pasted on boards (Figure 18) under various codes, to stay as near to the raw data in original language while developing the themes. The various themes were developed, keeping the validity in check, by referring to the data again and again.
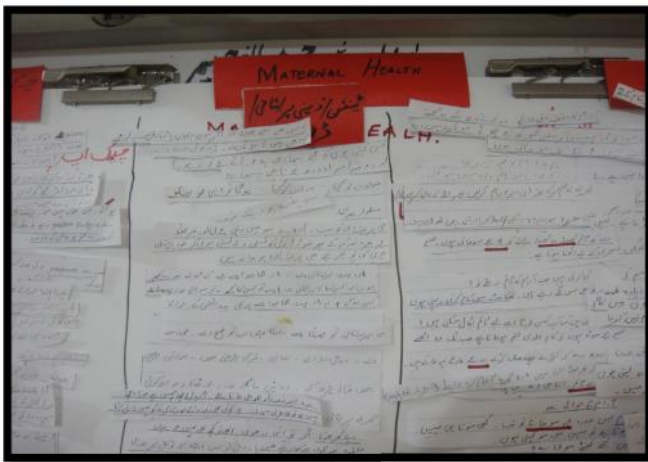
**FIGURE 18: RAW DATA PASTED ON BOARDS UNDER VARIOUS CODES**

5. *Refining the themes*

While refining the themes, and to add reflexivity, the PhD student consulted with colleagues and mentors. Memos were written throughout the analysis to help examine how the author's thoughts and ideas evolved.

6. The data was ***triangulated*** for validity. Triangulation was done at the following levels:

- Data sources included various stakeholders: health workers, pregnant women, and mothers of young children, grandmothers and fathers. The data from these sources was triangulated for common themes.

- Data from various methods of data collection e.g., interviews, narratives and observations was also triangulated

6. ***Final Themes*** were then formulated, which are presented in the following chapter.

An Example of Codes and Themes

In response to the interviewer's question, "What information does the LHW provide you about your health?" the woman replies;

1. She (LHW) keeps telling
2. When we ask about something , she tells us
3. She only told me , when I was pregnant
4. About what things I should carry with me for delivery
5. Mother should herself also know, since she has children

The initial coding in this example was line 1 and 2 as LHW interaction with women, Timing of interaction 3 and 4 and perceived demand of LHW in 5. This is simple descriptive coding; however categorizing and analytical coding helps formulate a theme. The emerging themes here are

LHW provides information only if asked

Information is mostly provided during pregnancy

Inadequate health information by LHW

# 8. Chapter Eight: Development Phase: Qualitative study

## B) Results

## 8.1. Results

### 8.1.1. Study participants

The data was collected on 53 individuals, including in depth interviews, observations and narratives. Table 16 gives numbers of various categories of participants and the technique of data collection.

TABLE 16: PARTICIPANTS OF INTERVIEWS, OBSERVATIONS AND NARRATIVES

| Participants | Method | Numbers |
|---|---|---|
| Pregnant | IDI | 8 |
| Mothers 0-6 m | IDI | 5 |
| Mothers 7-12m | IDI | 4 |
| Mothers 13-24m | IDI | 4 |
| Mothers of malnourished children | IDI | 4 |
| Mothers 0-24 m | Observations | 6 |
| Mothers 0-24 m | Narratives | 6 |
| Fathers | IDI | 4 |
| Grandmothers | IDI | 4 |
| LHWs | IDI | 5 |
| LHSs | IDI | 3 |
| Total | | 53 |

## 8.1.2.        Non- participation

There were two refusals by the mothers to give interview because of a reservation to share information. One woman consented for mother-child narrative and observation but she was not available on the agreed time and date because of a family emergency. One woman refused for audio recording during the in-depth interview as her husband would not allow audio recording.

## 8.1.3.        Demographics of the sample

The demographics of all the mothers included in the study are given in Table 17. More than half had no education and the majority lived in a joint family system. Socioeconomic status, rated on a 5-point Likert scale by the local village-based Lady Health Worker, showed that there was representation from all the ratings, but the majority belonged in the middle rating. This scale was found to be reliable in a previous study in Pakistan when compared to asset questionnaire.

The sample of fathers and grandmothers/ mother in law was drawn from the same families who were approached for in-depth interviews with women. The average age of fathers was thirty and majority were educated, belonging mainly to families rated in the middle on the SES scale. The grandmothers (mothers in law of women) were in their fifties and all of them were uneducated and belonged to relatively poorer families.

.

Table 17: Demographics of pregnant women and mothers

| Demographic Variables | Statistics | Values |
|---|---|---|
| Age in years | Number | 31 |
| | Mean | 27.8 |
| | Median | 28 |
| | Standard deviation | 5.948 |
| Education | Educated | 15 (48.4%) |
| | Uneducated | 16 (51.6%) |
| Number of children | Mean | 2 |
| Family structure | Joint | 21 (68%) |
| | Nuclear | 10 (32.2%) |
| Socioeconomic status | Very poor | 3 (10.3%) |
| | Poor | 7 (24.1%) |
| | Middle class | 13 (44.8%) |
| | Rich | 4 (13.8%) |
| | Very rich | 2 (6.9%) |
| Monthly Income | Mean | Rs.12,648 |
| | Range | Rs.2000-100,000 |

The LHWs included in the study were married and from an older age group (37 yrs average). The average duration of their experience as LHW was 13 yrs, minimum duration being 8 years. Average education was 9 years of schooling. Similarly the LHS had an average age of 38 yrs; all were married, with 12.5 yrs of schooling and 13 yrs of experience.

## 8.2. Themes emerging from the data after triangulation

The themes and sub-themes emerging from the data are summarized in Table 18, followed by their detailed description.

TABLE 18: MATERNAL PSYCHOSOCIAL FACTORS IMPACTING CARE FOR CHILD DEVELOPMENT-CATEGORIES, THEMES AND SUBTHEMES

| Categories | Themes | Subthemes |
|---|---|---|
| Individual-level factors | Stress | Stress- occurrence<br><br>Expression of stress<br><br>Impact on child care |
| | Interpersonal conflicts | Marital<br><br>Family and Mother in law<br><br>Friends and neighbours |
| | Negative events in childhood | Having lost a parent<br><br>Moving out of one's home |
| | Negative behaviours | Child abuse<br><br>Delayed health seeking |
| Family/Community level factors | Joint/ extended family<br><br>Family support and stress | Support by mother in law, husband, extended family |
| | Autonomy | Decision maker-mother in law-important to involve her<br><br>Control on reproductive decisions |
| | Repeated and unwanted pregnancies | Repeated pregnancies impact maternal wellbeing, child nutrition and interaction. |
| | Work load | Examples of families sharing workload<br><br>Workload impacts wellbeing and child care |

| | Economic issues | Poverty |
| | | Competing priorities |
| Role of community health workers | Maternal wellbeing | Knowledge about maternal psychosocial wellbeing |
| | Community and LHW | Community perceptions about LHWs |
| | | Relationship with the community |
| | | Communication skills of LHW |
| | Visits | Visits frequency |
| | | Family involvement |
| | Supervision | Field Supervision |
| | | Monitoring |

## 8.2.1. Individual-level factors impacting care

### 8.2.1.1. Stress

**TABLE 19: SUMMARY OF STRESS AS A THEME**

| Theme-Stress | | |
| --- | --- | --- |
| Sub-themes | Quotes | Implications for intervention |
| Stress-occurrence | *"There are many tensions at home"(IDI-mother)* | Stress is common (10/23) |
| Expression of stress | *"It's not life, it's just a compromise"(IDI with a mother)* | Stress is expressed as unhappiness, tiredness, and isolation |
| | *"She was quiet and withdrawn and looked tired"(Observation of a* | |

113

| | | |
|---|---|---|
| | *pregnant woman)* | |
| | *"I don't have a heart to sit with anyone"(IDI-pregnant mother)* | |
| Impact on child care | *"Honestly speaking; he keeps on lying on the bed all the time"(mother of a 6 month old)* | Stress impacts maternal interaction with child |
| | *"Above the head of the child, mother has hung an orange coloured scarf with mirrors"(observation of a non-stressed mother)* | Non stressed women are innovative in child care |

The literature shows a strong evidence of maternal depression being very common in Pakistan measured through clinical interviews; however our objective was to explore the women's own perceptions about their wellbeing. Instead of asking leading questions like do you feel depressed, we asked, open ended questions such as, "How are you feeling?" This approach also helped put women at ease and built a rapport with the interviewer. Women would respond by talking about their physical health first, but would then move on to talking about psychosocial stresses when they became comfortable. Since the idea was to develop a universal intervention, the aim of the study was neither to diagnose depression nor to differentiate it from stress or anxiety. Various terms were used to express distress in the local language, translating to "sadness", "worry", "unhappiness", "tension" and "stress". All of the interviewers were conducted by women and this made it easier for the participants to open up and share their problems.

*"There are many tensions at home"*

*(IDI-7-12M-U-260912; 3:4)*

Sometimes even when mothers did not use these words, they conveyed their psychological state by expressing unhappiness with life in general, loneliness or social isolation. For example in the following quote an educated mother of a young child expresses her unhappiness with her financial and social circumstances by stating that her life is a compromise.

*"It's not life, it's just a compromise"*

*(IDI-13-24M-E-300912; 14:7')*

During the reflective sessions that were conducted daily with the interviewing team, it was noted that during interviewing, the body language of women and their facial expressions often gave an indication of their internal mood state. However, this was felt to be subjective, as women sometimes may have masked their unhappiness. Privacy was ensured when the women were being interviewed by politely explaining this to the other household members. Nevertheless, on occasions, the household members would not be willing to leave, and this may have discouraged the women from revealing their true feelings. Fortunately, this happened on very few occasions.

The following quote from a pregnant woman clearly demonstrates her state of mind isolation that may be a feature of depression.

*"I stay alone. I have this habit.*

*I don't sit with them (family).*

*I don't have a heart to sit with anyone."*

*(IDI-PM-E-050912; 5: 3)*

On the contrary, women who were not stressed expressed satisfaction and happiness with their life. They used words like "happy" "satisfied" "alright" "thankful to God" etc.

The husband's support was felt to be important in most cases:

*"I am happy. All depends upon the husband, mine is supportive"*

*(IDI-06M-E-120912; 4:11)*

When women were asked to narrate the previous day's experience with childcare, they sometimes conveyed feelings of stress related to this. However, such stresses were very common, and to a large extent normal in women looking after young children. However, women who had good extended support networks reported less stress with childcare.

*"He (child) irritated me when he demanded to buy something from the market, it made me feel stressed."*
*(N-06M-E-031012; 11:7)*

Another important indicator of stress was found to be tiredness or fatigue. Many women expressed feelings of excessive tiredness or fatigue most of the time. Such tiredness might have a physical rather than psychological origin – for e.g., anaemia is quite prevalent in rural women in Pakistan. Nevertheless we cannot say with confidence that the physical symptoms were due to health issues or related to stress. However women who had expressed stress also complained of tiredness.

Tiredness and fatigue in mothers were also observed during the direct observations at their homes. In many cases, the women had multiple responsibilities, including tending to the livestock, working in the field, cooking and cleaning, in addition to looking after more than one young child. In the example below, the woman could have been physically tired or simply overwhelmed by her workload and responsibilities.

*The pregnant mother was washing clothes, the younger child was crying and the older child was pulling at her, she was quiet and withdrawn and looked tired.*

*(O-PM-U-031012; 11:7)*

The example above also demonstrates that women stressed by their circumstances spend less time with their children whereas women who are happy are more proactive in child care. A mother of a 6 months old child in the following example expressed her stress, and admitted that she did not spend much time with the child.

*"I do feel like picking him up, honestly speaking; he keeps on lying on the bed all the time"*

*(IDI- 06M-U-111012; 7:11)*

The observations carried out in the household also helped in getting a real picture of how women interact or take care of the child. For example in the following example it was noted that the mother was quiet and withdrawn and looked sad. She was not attending to the hygiene of the child.

*The child's face and clothes are dirty and flies are sitting on his face. Mother looks depressed.*

*(O2-06M-U-051012; 1:6)*

Mothers who seemed happy and contented during observations were interacting with their children and were creative in playing and engaging with the child of any age. The children in turn were responsive to such mothers. This is evident from the observation given below (Figure 19).

*Exactly above the head of the child, mother has hung an orange coloured scarf with mirrors embedded on it. When that scarf waves in the air child gets attracted and is trying to reach it.*

*(O2-06M-U-051012; 2:7).*

.

**FIGURE 19: MOTHER'S INNOVATIVE WAY OF MAKING THE CHILD HAPPY**

There were some very good examples of how women, who were reporting less stress, were making homemade toys for children (Figure 20).



**FIGURE 20: A HOMEMADE TOY**

## 8.2.1.2.    *Interpersonal Conflicts*

**TABLE 20: SUMMARY OF INTERPERSONAL CONFLICTS AS A THEME**

| Theme-Interpersonal Conflicts | | |
|---|---|---|
| Sub-themes | Quotes | Implications for intervention |
| Marital | *"Husband should be good if he is not with you nothing is fine."(IDI-mother)* | Pregnant women and mothers are stressed because of interpersonal conflicts. |
| Family and Mother in law | *"My parents did not want me to marry him that's why they are unhappy with me and I feel very stressed"(IDI-mother)*<br><br>*"When my mother in law says nasty things I get very stressed"(IDI-pregnant woman)* | |
| Friends and neighbours | *"We do not mix with our neighbours. They do not like us" (IDI-mother)* | |

Interpersonal conflicts (predominantly with the husband, the mother in law or the family) were frequently mentioned, which affected a woman's psychosocial health as well as her ability to take care of her own as well as her child's health.

> **"***I am very upset. My husband does not trust me. He used to trust me before. He does not come home anymore"*
>
> *(IDI-PM-U-050912; 21:6)*

Some women were living with their **parents**, because of conflicts with the husband or his family. Women were not only stressed because of the conflict itself, but also because of the financial burden on her parents and her own situation and dynamics in her family.

*"I moved in with my father after I developed some conflict with my in laws. But my father was also not supportive, and we often had little to eat.*

*(IDI-06M-U-111012; 3:12)*

A large source of distress in many cases was disagreement with key decision makers in the family – one's own parents, or within the extended family.

*"My parents did not want me to marry him that's why they are unhappy with me and I feel much stressed"*

*(IDI-06M-U-140912; 2:7)*

Conflicts with the mother-in-law, who is a dominant figure in the rural hierarchical system, were also common. For some women, these stresses interfered with childcare responsibilities.

*"When my mother in law says nasty things I get very stressed and angry and don't want to do anything, even care for my infant"*

*(IDI-PM-U-260812; 8:10)*

In the rural Pakistani society, extended kinships are a great source of support, and people are generally very close to their **neighbours** who take on the role of extended family (in many cases, whole villages are related). The downside of these enmeshed relationships is that any interpersonal conflict between individuals could get magnified to include a whole neighbourhood.

*"We do not mix with our neighbours. They do not like us"*

*(IDI-0-6M-U-210912; 5:3)*

### 8.2.1.3. *Negative events in childhood*

**TABLE 21: NEGATIVE EVENTS -SUBTHEMES**

| Sub-themes | Quotes | Implications for intervention |
|---|---|---|
| Losing a parent | *"I have never been happy, my father died and we had to live with our grandparents. I have a bad Qismat (fate)"*(IDI-mother) | Previous life events make a woman susceptible- needs more support |
| Moving out of home | *"we are living in my sister in law's house, it's hard to adjust"* (IDI-pregnant mother) | |

The literature on depression indicates that negative events in early life have a long-lasting effect on women and their psychological state. These include losing a parent, being abused, or moving out of one's home at a very young age (underage marriage). These events were often attributed to current feelings of poor self-esteem, lack of motivation, resignation, irritability and argumentativeness.

*"I have never been happy, my father died and we had to live with our grandparents.*

*I have a bad Qismat (fate)"*

*(IDI-07-12M-U-231112; 5:6)*

| Sub-themes | Quotes | Implications for intervention |
|---|---|---|
| Child abuse | *"I beat my child when I am upset with my mother-in-law"(IDI-mother)*<br><br>*"When I am angry I slap him" (IDI-mother)* | Maternal stress may lead to child abuse and delayed health seeking for the child |
| Delayed health seeking | *"I am not happy. There are so many problems. I do not have the energy to take her for vaccination and father is too busy" (IDI – mother of a 6 m old)* | |

**Child abuse**

Many women who reported stress and felt unsupported also reported scolding and hitting the children more than the women who were not stressed and felt supported. Some women abused their children as a way of letting off steam from their stressors: for e.g., a woman, upset with her mother-in-law would misdirect her frustration and hit the child.

*"I scold her; if I get more irritated I hit her"*

*(IDI-1324M-U-81012; 8:10)*

*"I beat my child when I am upset with my mother-in-law"*

*(IDI-PM-E-260812; 1:13.)*

**Delayed health seeking**

Women who reported stress or lack of support also reported poor health-seeking behaviours, both for themselves as well as their children.

*"No....I did not think about getting the child vaccinated....too much on my mind..."*

*(IDI-1324M-U-081012; 13:9)*

*"Neither had we taken Waqas to doctor nor we got him vaccinated...no one cares"*

*(IDI-06M-U-111012; 5:14)*

Women who had had poor experience of the obstetric health services were also stressed in the current pregnancy, and avoided antenatal health care.

*"I am scared of operation that's why I said I won't go to the hospital no matter how severe the pain may get."*
*(N-712M-U-031012, 9:3)*

### 8.2.2. Family/Community level factors

#### 8.2.2.1. *Family support*

TABLE 23: SUMMARY OF FAMILY SUPPORT AS A THEME

| Sub-themes | Quotes | Implications for intervention |
|---|---|---|
| Joint/ extended families | *"3 brother's families were living together, with the parents" (observation)* | There is a potential extended family support available to women |
| Family support and stress | *"I don't get stressed, I have mother, sisters and sister in law and I share my problems with them" (IDI mother)*<br><br>*" My sister in laws do not help me at all and that and the work gives me tension"(pregnant mother)* | |
| Sharing of workload | *"My sister in law helps me in taking care of amna (daughter)and also in kitchen as she is unmarried"(IDI- mother of 11 m old)*<br><br>*"If she (daughter in law) is unwell, I do the work I also look after the kids …. How can I ask to her to get up and work? (IDI-grandmother)* | |
| Sharing in child care | *" Husband's sister was feeding the child with a banana"(Observation)*<br><br>*"My husband's aunt brought the child to me after the delivery so that I could breast feed her"(IDI-mother)* | |
| Husband's support | *"I am very happy. There is only me and my husband. He helps me even in household work"*<br><br>*( pregnant woman from a nuclear family)*<br><br>**"***Father goes out for earning; mother who stays home is responsible for the child care"(IDI-father)*<br><br>*"My husband (who works abroad) calls every third or fourth day and enquires about my diet, medicines, and talks about everything in detail…If husband is good everything is fine" ( IDI-pregnant woman)* | |

Majority of the respondents lived in a joint family or an extended family unit and in this context, the support of the extended family mattered for women. If the family and particularly mother-in-law were supportive, the women felt more able to cope with everyday stresses, even if they were financially not well off. On the other hand, unsupportive relationships, especially with the mother-in-law caused stress and impaired functioning.

*"My mother in law says nasty things about me, which makes me very angry and stressed...so much that I cannot work."*
*(IDI-PM-U-21012; 3:6)*

*"There are many tensions at home, sisters-in-law are old enough to understand my problems, but instead of supporting me they cause me a lot of trouble"*

*(IDI-712M-U-260912; 3:4)*

Conversely, support from the family during pregnancy and after birth was important played an important role in child care. Women who were supported by the family felt better, more able to share their problems with the family, and had better emotional and physical capacity to feed and interact with the child.

*"I am happy as I have no tension from the in-laws"*

*(IDI-06M-E-210912; 2:17)*

The support of the extended family, including sisters- or brothers-in-law was important in helping the mothers deal with their stresses.

*"I don't get stressed, I have mother, sisters and sister in law and I share my problems with them.*

*(IDI-1324M-E-280912; 10: 2)*

Many families provided actual support to the mothers, sharing some of their tasks of looking after the child, or contributing to their daily chores. This relieved the

workload of the women, allowing them some time for themselves and having a positive impact on their wellbeing.

*"Everyone here is good natured. If they (sisters-in-law) are giving a bath to their children, they will bathe mine too. If they are washing clothes, they will wash mine too. If I am not feeling well they will share my work and if they are not well I will do theirs.*

*(IDI-1324M-E-280912; 15:9)*

Early initiation of breastfeeding, an important function of infant nutrition, also appeared to depend on support of other female family members. There were many examples of the extended family helping women in achieving this goal.

*"My husband's aunt brought the child to me after the delivery so that I could breast feed her"*

*(IDI-06M-U-210912; 13:8)*

During the observations, it was noticed that in some of the families, other relatives also contributed to childcare activities – spending time interacting with the child.

*The paternal uncle spent time with the child outdoors - stroking a lamb and encouraging the child to do the same – like a game*

*(O2-1324M-U-051012; 5: 7)*

Again, many extended family members shared the woman's workload and provided them the opportunity to rest. A mother-in-law expressed her thoughts in the following quote:

*"If she (daughter in law) is unwell, I do the work I also look after the kids …. How can I ask to her to get up and work?*

(IDI-GM-U-151012; 2:8)

Women also mentioned the importance of the mother-in-law's support:

*"My mother in law is very cooperative; she often takes care of my daughter and asks me to have some rest"*

*(IDI-06M-E-120912; 5:13)*



**FIGURE 21: GRANDMOTHER INTERACTING WITH THE CHILD**

**Husbands' Support**

**Good Communication with the husband reduced stress**

Husband's support contributed substantially to the women's wellbeing.

*"If the husband is good everything is fine."*

*(IDI-1324M-E-300912; 12:2)*

Women who could easily communicate with the husbands and discuss their problems felt supported and were able to deal with the stresses and burdens of life, even if they had financial hardships, whereas women who were not supported by their husbands were very stressed, even if they were financially better off.

*"He does not realize that his wife is in such a condition (pregnant), why does he leave her? Why does he come late in the evening, my husband does not care about any of this"*

*(IDI-PM-U-050912; 2:6)*

In this rural setting, as is typical of many other areas in the Punjab, there were many families where husbands were working abroad to earn a living, and women were either living alone or with the extended families. These women particularly felt supported if there was regular communication with the husband.

*"My husband (who works abroad) calls every third or fourth day and enquires about my diet, medicines, and talks about everything in detail…"*

*(IDI-PM-E-090912; 11: 13)*

It was also clear that in many cases, financial hardships and the nature of available employment did not allow fathers to spend time with the family. Such 'absent' husbands contributed little to the mother's wellbeing other than providing a livelihood, more important in these cases.

*"My husband has no time. He comes home late and goes to work early"*
*(IDI-PM-E-070912; 14: 5)*

**Fathers think childcare is the mother's responsibility**

Continuing on the theme of husband's support, one sub-theme that emerged related to the attitude of some fathers towards childcare – many felt that this was purely the 'women's domain' and it would be somewhat demeaning for fathers to contribute.

**"***Father goes out for earning; mother who stays home is responsible for the child care".*

*(IDI-F-U-191012; 2:4)*

*"If I ask him to hold the child, he says what are you for?"*

*(IDI-712M-U-230912; 12:6)*

It appeared this attitude was an accepted norm and largely accepted by the mothers. Some women did not ask for the husband's help even if they were unwell.

*"Even if I am sick, I have never asked my husband to wake up and take care of the child."*

*(N-712M-U-011012, 5:2)*

*"My husband would shout if the child cried at night. I would take him to the other room, now the child does not let the father sit on his bed"*

*(IDI-PM-E-070912; 23:6)*

**Some fathers were helpful**

However, there were many positive examples, and they made a considerable impact on the mother's wellbeing (Figure 22).



FIGURE 22: FATHER INTERACTING WITH HIS CHILD DURING AN OBSERVATION.

*"My husband cooperates with me. When he is at home he looks after the child."*

*(IDI-1324M-E-300912; 10:4)*

*"We talk to each other, I accompany her for checkups"*

*(IDI-F-U-131012; 6:19)*

### 8.2.2.2.    *Maternal autonomy*

**TABLE 24: SUBTHEMES OF MATERNAL AUTONOMY**

| Sub-themes | Quotes | Implication for intervention |
|---|---|---|
| Decision making and stress | *"My mother-in-law directs everything – if she says have tea with your meal, I can't refuse even if I don't, feel like having tea"(IDI-mother)*<br><br>*"I cannot make any decisions as I am living in my sister's home. I don't own a house and this stresses me a lot" (IDI-pregnant woman)* | Lack of autonomy and control over the reproductive life impacts child care and stresses women |
| Control over reproductive life | *"I told my husband that contraception should be used but I am helpless, he does not favour it"(IDI-mother of an infant)*<br><br>*"Because of repeated child births I cannot take care of them properly. This is why I fight with my husband"(IDI-pregnant mother of 3)* | |

A number of women lived in an extended family setup, not out of choice but as an economic necessity. While living in extended families was beneficial in terms of the support, in many cases, women felt that it hampered their autonomy.

**Lack of participation in decision making**

Many women felt they did not have the autonomy to take decisions about themselves or their children. Even simple decisions, such as what to feed the child, were often dictated by the family elders. Many women felt stressed because of this:

*"My mother-in-law directs everything – if she says have tea with your meal, I can't refuse even if I don't, feel like having tea"*

*(IDI-712M-U-230912; 4:9)*

*"My mother-in-law tells me what should be given to the child; she gets upset if I do something on my own"*

*(IDI-712M-U-260912; 12:18)*

**Shared households**

Many families did not own a house and had a room in a shared household with a joint kitchen. This affected their autonomy and "Not owning a house" was often reported as being a reason for stress.

*"I have this tension that this is my sister's house and I do not have my own house"*

*(IDI-PM-E-050912; 2:2)*

*"It's obvious, if we had our own home, I would not have been that much worried."*

*(IDI-1324M-E-300912; 14:7)*

### Autonomy and happiness

Some women, even in extended families, were given the autonomy to make their own decisions, and they were less stressed and more in control of their lives.

*"I am happy as I do not listen to anyone; I only listen to my heart"*

*(IDI-712M-E-260912; 24:8)*

### Decision about birth spacing

An important subtheme was the woman's autonomy and control over her reproductive life. In many cases, decisions about family-planning were taken by the husband, and sometimes against the woman's own wishes. Women usually refrained from discussing these matters with the husband and often blamed it on their fate. Some women had unwanted pregnancies as a consequence, leading to a lot of stress and unhappiness.

*"I told my husband that contraception should be used but I am helpless, he does not favour it"*

*(IDI-712M-U-230912; 13:18)*

*"I keep telling my husband that this child has come with his will, not mine"*

*(IDI-0712M-E-260912; 10:2)*

At times, birth spacing was compromised due to the pressures on the couple to have a male child.

*"My husband demands for another male child although I do not have the energy now"*

*(IDI-MN-06M-111012; 24:3)*

### Repeated unwanted pregnancies

Related to the above subtheme, another important reason for psychosocial distress was repeated and unwanted pregnancies.Women did not have the independence to take a decision about birth spacing .

*I only have this tension that I have repeated births, one after the other and I cannot take care of them (children)"*

*(IDI-PM-E-260812; 2:6)*

An extreme example of stress due to repeated births is the following quote where the pregnant woman wished her child was not born:

*"I am stressed, I think even now (at 6 months of pregnancy) this child should not be born. I am overworked, and other children demand my attention.*

*(IDI-PM-E-070912; 2:8)*

Women feel that repeated and multiple births compromise their ability to take care of the nutritional or developmental needs of the individual child. They feel physically weak after repeated births, can't find time to rest or to care for the child and become irritable. This is sometimes a reason for conflict with the husband.

*"Repeated pregnancies cause weakness, what remains in women after that?"*

*(IDI-1324M-U-280912; 6:4.)*

*"If I were not pregnant again, I would be feeling much better. I would be taking better care of my children"*

*(IDI-1324M-E-300912; 3:14)*

Women acknowledged the fact that childcare was neglected because of repeated pregnancies.

*"Because of repeated child births I cannot take care of them properly. This is why I fight with my husband"*

*(IDI-PM-U-260812; 2:6)*

### 8.2.2.3. *Excessive work load, competing demands on time and poor health*

**TABLE 25: WORKLOAD AND COMPETING DEMANDS**

| Sub-themes | Quotes | Implications for intervention |
|---|---|---|
| Workload | *"I do not have time to rest, even for 5 min, Only at night. That also if Imran ( child) is sleeping"( Narrative –mother)*<br><br>*"My mother in law is very good. She takes care of my son and asks me to rest in the afternoon" (IDI-pregnant woman)* | Family can help relieving maternal stress by sharing workload<br><br>Competing demands on a woman's time include other children |
| Competing Demands on time | *"My sister has 10 children and cannot rest at all"(IDI-mother)* | |

The excessive workload for women who are pregnant or have young children was counterproductive for child care. This compromised their physical health and women had no time to rest.

*"I have to do all the work. I do not have the time to play with my children or to think about myself"*

*(IDI-1324M-U-051012; 5: 7)*

There were competing demands on a woman's time, which included household chores, child care, care of the elderly and the husband.

*"My sister has 10 children and cannot rest at all. She has no choice."*

*(IDI-PM-E-050912; 7:1)*

*"I am unable to take rest in day time because children are young and they do not let me take rest"*

*(IDI-06M-E-210912; 6:1)*

### 8.2.2.4. *Economic issues*

**TABLE 26: THEME- ECONOMIC ISSUES**

| Sub-themes | Quotes | Implications for intervention |
|---|---|---|
| Poverty and maternal wellbeing | " *I am really very worried about the loan"(IDI-mother)*<br><br>" *I cannot eat good food, as we are poor"(IDI- pregnant woman)* | Maternal wellbeing is affected by economic issues |
| Resigned adjustment to circumstances | *"In my opinion, if one does not have the resources one is helpless...no point trying"*<br><br>*( IDI-mother)* | |

**Financial difficulties**

In some cases, financial worries were a major source of psychosocial stress.

*"I can't sleep at night, thinking of the loan and how to get rid of it."*
*(IDI-1324 M- U-081012; 4:20)*

Husband's unemployment was a source of stress for the women as they worried about their and their children's future.

*"I often worry about what will happen to their (children's) education? We don't have any source of income and my husband is also not educated. What would happen?"*

*(N-712M-U-031012; 12:7)*

Financial hardships also affected the interpersonal relationships within households.

*"An aunt of mine was also poor like me, her husband was also a labourer like mine, and my mother in law did not like her as well because she was poor"*

*(IDI-712M-U-230912; 6:14)*

In some of the extremely poor households, food insecurity was a major challenge for maternal diet during pregnancy and child nutrition.

*"My health worker told me to increase my diet, but I can't afford the things she tells me to eat"*

*(IDIMN-06M-111012; 4:15)*

*"Many people, like us, cannot eat well because of poverty"*

*(IDI-1324M-U-280912; 14:7)*

Some of the women stressed because of family, financial or other circumstances, showed helplessness about their situation. They failed to seek help of other family members and were convinced that nothing could be done to change their lives.

*"In my opinion, if one does not have the resources one is helpless…no point trying"*

### 8.2.2.5. *Stress and child care*

**TABLE 27: SUBTHEMES OF STRESS AND CHILD CARE**

| Sub-themes | Quotes | Implications for intervention |
|---|---|---|
| Delayed health seeking | *"I had so many other problems, and no one helps. So I did not take her to the doctor"(IDI- mother)* | Child care is affected if women are stressed |
| Child health and hygiene | *"Mother was sitting in front of the stove and looked depressed, her child had passed urine on the floor and was playing with it, but she did not attempt to clean"*<br><br>*(Observation)* | |
| Interaction with the child | *"I am not happy and I do not like to play with my son. I have too much on my mind"*<br><br>*( IDI –a stressed mother)* | |

Households where mothers reported more stress were generally more chaotic, with less education amongst family members, poorer lifestyles, and poorer quality of child care.

*All the male members of the family were smoking in the presence of children"*

*(O2-1324M-U-051012; 12:11)*

In many of these households, standards of hygiene were found to be poor and mothers not motivated, or feeling too helpless, to bring about a change. This phenomenon did not appear to be related to poverty.

*Child's face and clothes are dirty and flies are hovering around his face*

*(O2-06M-U-051012; 1: 6)*

*Milk is in a pot that is uncovered. The mother puts more milk in the feeder that is still a quarter full with old milk, and gives it to the child*

*(O3-1324M-U-061012; 7:15)*

It was also found that many mothers visited faith healers when stressed. Some were so trusting of the faith healer that they would take their very sick child to the faith healer first before seeking medical attention.

*"I took my child to the faith healer' of my area, she said your child is possessed-- take him to my brother he will give you a charm against possession"*

*(IDI-06M-U-111012; 9:14)*

A lack of awareness about the health benefits of vaccination or the misconceptions about it lead to harmful health practices.

*"He was very weak that's why he was not vaccinated. I thought where he would get the injection because there is no muscle"*

*(IDI-06M-U111011; 11:5)*

### 8.2.3. Understanding the delivery context: Role of the Community Health Workers as delivery agents

TABLE 28: ROLE OF COMMUNITY HEALTH WORKERS

| Sub-themes | Quotes | Implications for intervention |
|---|---|---|
| Knowledge about maternal psychosocial wellbeing | *"We always thought about anaemia and tetanus, and not about her wellbeing, because we were not told"(IDI- lady health worker)*<br><br>*"I think mental wellbeing of the mother is important –it is related to our work"(IDI- LHW)* | LHWs if sensitized for maternal wellbeing can work for it |
| Community perceptions about LHWs | *" We respect them as they are the only ones who talk about health"(IDI- father)* | LHWs are well respected in the community |
| Relationship with the community | *"She does not discuss anything, she visits only because it's her duty"(IDI- mother)* | LHWs need to learn develop friendly relationship with women |
| Communication skills of LHW | *"LHW has told me to take fruits, eggs and milk and large quantities of meat but we can't afford all this. She did not listen or offer any solutions to my problem"(IDI- mother)*<br><br>*" She only stays for five minutes, tells us to have good food and goes away"* | Communication skills and problem solving needs to be strengthened |
| Visits frequency | *" She comes every month"( IDI- pregnant woman)*<br><br>*"LHWs are supposed to visit each household monthly but not all of them do it"(IDI-lady health supervisor)* | LHWs visit the families regularly most of the times |
| Family involvement | *"She only talks to my daughter in law and goes away"(IDI-grandmother)*<br><br>*" We are not shy of talking to the husband, but we never did" (IDI-LHW)* | Family involvement by LHW is non-existent |
| Supervision and monitoring | *"I cannot go for supervision visits to the field as I have so much paper work to do. But we have regular monthly meetings with the medical officer in-charge"(IDI-Supervisor)* | Monthly supervision meetings is an opportunity for supervision of intervention |

### 8.2.3.1.    *Community perceptions about LHWs*

The LHWs, who have been working in the community for over 35 years now, were well accepted and respected in most cases. Most respondents were of the view that the LHWs were important professionals in the health system and played a significant role workers working in the community. The LHWs had a similar view about the community's perception.

> *"Yes, they (community) give us respect"*
>
> *(IDI-LHW-1161012; 8:10)*

### 8.2.3.2.    **The lady health workers'** *understanding of maternal wellbeing*

When open-ended inquiries about the LHWs concept of wellbeing were made, there was hardly ever a mention of psychosocial issues – rather the responses were related to their physical health or nutritional intake.

> *"Women's wellbeing is about their health, for example no high blood pressure or anaemia"*
>
> *(IDI2-LHW--051012; 1: 6)*
>
> *"A good diet is the only way to ensure maternal wellbeing"*
>
> *(IDI3-LHW--051012; 1: 6)*

When asked about psychosocial wellbeing directly, the LHWs said this was not covered in their curriculum and antenatal care, as far as they knew, was all about safe motherhood and nutrition.

> *"We never thought about the psychological wellbeing. We are only told about antenatal care."*

### 8.2.3.3.    Relationship of LHWs with their clients and their families

The LHWs were mostly didactic in their communications with their clients. The majority of the respondents interviewed felt that the main purpose of the LHWs visit was to deliver a set of health messages or give the child vaccination. They did not possess any counselling skills, and the women found it difficult to share their problems with them.

*"She does not discuss thing, she visits only because it's her duty"*

*(IDI-06M-U-140912; 3:15)*

*"I have not talked to the LHW about my problems. I feel quite shy and a bit intimidated"*

*(IDI-712M-U-260912; 2:20)*

Mothers who had depression or were psychosocially distressed found it difficult to follow the LHW's advice. The LHWs did not help the mothers with problem-solving skills to address the barriers they faced in implementing their advice.

*"LHW has told me to take fruits, eggs and milk and large quantities of meat but we can't afford all this. She did not listen or offer any solutions to my problem"*

*(IDI-712M-E-111012; 8:3)*

However, in few cases, the LHW did have a friendly and confiding relationship, and women felt confident in sharing problems.

*"We have friendly relations with LHW, I ask questions frequently and she listens and provides advice"*

Engagement with families was explored. There was also a common perception that the LHWs avoided visiting families that they felt were difficult to engage. In many cases, these were families that had multiple psychosocial stressors, and the LHWs felt there was little they could do to engage them.

*"Baji (LHW) does not go to their (respondent's neighbours) house, because of their (neighbours) attitude"*

*(IDI-PM-U-050912; 9:12)*

*"They (LHWs) never visit our house, only when there is a campaign for polio vaccination"*

*(IDI-712M-E-111012; 9:10)*

It was also widely perceived that the LHWs did not feel it necessary to talk to other family members. Sometimes they approached the mothers behind the mother-in-law's back, and this often alienated them. The LHWs found talking to men culturally difficult. However, engaging the husband or mother-in-law was not emphasized in their routine training, either.

*"She only talks to my daughter in law and goes away"*

*(IDI-GM-U-181012; 7:5)*

*"LHW does not talk to my husband….I think she feels shy"*

*(IDI-1324M-E-300912; 37, 18)*

### 8.2.3.4. *Supervision and monitoring*

The health workers and their supervisors had a similar opinion about the monitoring and supervision, which were found to be weak and inadequate. The LHS is supposed to visit the LHWs regularly in the field, but failed to do so, because of her other workload. The infrequent field visits if done are mainly to monitor whether the LHWs have been visiting the households or not. The element of supportive supervision was missing.

*"I visit field twice a month; it is not possible to visit all LHWs because of polio days"*

*(IDI-LHS3-161011; 4:15)*

Polio eradication is currently a challenge in Pakistan and Government has placed this as a top priority. Since LHWs are the largest workforce in the community who can easily reach households, their services are utilized for polio eradication. Polio weeks are monthly cycles, during which LHSs and LHWs are only working for polio.

*"Sometimes we go directly to the field, visit two or three households and ask them whether LHW visits"*

*(IDI-LHS4-161012; 24:1)*

The LHW programme conducts monthly supervision meetings at the health facility which are attended by the doctor in charge, LHS and all the LHWs regularly. Though the original purpose of these meetings was supportive supervision and continued training, in reality it only serves the purpose of collecting and compiling paper work on the data collected by the LHWs, with infrequent training sessions

*"I supervise 13 LHWs I check their reports, some of the items are shared with doctor at facility"*

*(IDI-LHS3-161012; 1:13)*

*"Monthly reporting is the most time consuming"*

*(IDI-LHS3-161012; 1:7)*

The element of continuing education or refresher trainings of LHWs is not practiced regularly, because of other activities.

*"Sometime after four months, sometime after three months, or after a year, we give refresher trainings"*

*(IDI-LHW3-161011; 7:17)*

## 8.3. Summary of the qualitative part of the development phase

In summary; the qualitative phase explored the psychosocial factors impacting maternal psychosocial wellbeing and child care in a rural setting of Rawalpindi, Pakistan through a qualitative methodology. A variety of data collection methods were triangulated and a thematic analysis was performed.

The study highlighted the fact that maternal psychosocial wellbeing is not only compromised, it has never been the focus of the health workers. Major psychosocial factors that affect maternal psychosocial wellbeing were lack of family support and conflicts, economic issues, and lack of maternal autonomy, repeated child births and workload. It is also somewhat clear from the results that maternal psychosocial wellbeing influences child nutrition and development.

Lady health workers are well respected in the community and have regular home visits. Their main function is delivering health care messages only to the women, without involving the families. There is a need that LHWs learn to develop empathic relationships with the families to be more effective. The communication skills specifically problem solving of the LHWs, needs to be improved. The monthly supervision meetings can be utilized for the supervision of the maternal psychosocial wellbeing intervention.

In conclusion, maternal psychosocial wellbeing influences the child care practices, and we have identified key areas to be included in the intervention. Moreover the qualitative study has helped us understand the health worker's role and dynamics that will help in devising the delivery mechanism of the intervention.

# 9. Chapter Nine: Development Phase:  Intervention development workshops

## 9.1. Introduction

The qualitative interviews conducted in the development phase emphasized the need of adapting a simple yet universal psychosocial intervention that can be delivered through LHWs as part of their routine work in the community. In this chapter, the development of an approach for maternal psychosocial wellbeing is described that has the potential for integration at scale in a combined nutrition and early child development (ECD) program. The approach is designed to be delivered by a community health worker as part of any maternal or child health program.

The approach was developed from the Thinking Healthy Program (THP), which is described in chapter 5. The current chapter describes the methodology for adaptation of the THP into a universal maternal psychosocial wellbeing approach and process of integration of the maternal psychosocial wellbeing approach into an early child development program.

This piece of work was done in collaboration with the expert group that developed the original THP and conducted the randomized trial (Atif Rahman, Siham Sikander, Ikhlaq Ahmad, Najia Atif, and Zaeem Haq). Although it did not constitute a major part of the author's PhD work, it is being reported here, because a basic understanding of this step and the intervention developed is important in understanding the next major phase of the PhD, feasibility and pilot testing.

## 9.2. Development and integration of a universal maternal psychosocial wellbeing intervention

It has already been discussed in chapter 5, as to why Thinking Healthy Program (THP) was found to be a useful intervention to be adapted for universal maternal psychosocial wellbeing intervention. To develop a universal approach for maternal psychosocial wellbeing we utilized the findings of a qualitative study that was conducted by the THP group of researchers. They had identified the components of the THP approach for depressed mothers that were being utilized by the LHWs for their routine work by conducting focus group discussions with the THP LHWs. After

reviewing the findings of the THP qualitative study, to get a deeper understanding about THP intervention and to develop a universal approach, a series of workshops were conducted which were attended by the THP researchers. The findings from the qualitative interviews were utilized to identify the key behavioural targets that impact maternal psychosocial wellbeing in the study area (Table 18). An intervention addressing key maternal psychosocial wellbeing concerns was developed. This was followed by integration of this approach into a child nutrition and child development program being developed (SPRING), described in section 1.3.

### 9.2.1. Development of a universal maternal psychosocial wellbeing approach from the Thinking Healthy Program

The THP intervention was applied to depressed mothers in a cluster randomized trial, conducted in rural Rawalpindi, Pakistan. For the development of a universal approach it was important to explore whether the health workers who delivered the approach, found this useful for non depressed mothers as well. Three years after the trial ended, the developers of the intervention conducted a series of focus group discussion (FGDs) with the LHWs who had delivered the intervention. The methodology of the FGDs conducted by the THP researchers is summarized below and the key results of these FGDs are summarized in Table 29.

#### 9.2.1.1. *Focus group discussion with LHWs who delivered the original THP*

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The **objective** of this qualitative study was to explore if the LHWs who were trained through THP were still using the techniques taught to them in the THP in their day-to-day health education work, with women who were not depressed but could benefit from these techniques. The FGDs allowed the THP researchers to draw upon the LHWs' experiences of using the techniques after the THP trial had ended. The researchers asked the LHWs if they continued to use the techniques they had learned during the trial, and the types of problems for which they found these techniques useful, and any variation in the manner in which they employed them.

The THP researchers reported that the focus group discussions, which followed a semi-structured format (steered by a field guide), served to channel the discussion while permitting maximum elaboration of participant response. The interaction also enabled the LHWs to ask questions to each other, as well as to re-examine and reassess their own understandings of their specific experiences. Moreover LHWs felt valued as their opinion was sought and were happy to be given the chance to work collaboratively with researchers.

Four focus group discussions were conducted by the THP team with 40 LHWS (out of 42 trained) who had delivered the THP intervention and were still working 3 years after the intervention.
A limitation of the methodology used is that since the THP researchers themselves were the moderators, the LHWs may have failed to share negative experiences if any. However they were allowed to express freely and were given the confidence that the research was for learning from their experiences and not for their monitoring.

### 9.2.1.2.    *Review of analysis*

I reviewed the coding matrix and the method of analysis used by the THP researchers in their qualitative study. This was done primarily to have a deeper understanding of the results and also to report the methodology and quality of the study. An example of the observed coding is given next.

| A sample analysis | | |
|---|---|---|
| Q: *Which of the techniques taught to you in the THP are you using in your day-to-day work?* | | |
| Response | Initial coding | Focused codes |
| *One thing that I do now is that I* <u>*try to listen*</u> *to what they are saying first and* <u>*do not just give the health message.*</u> *This has* <u>*helped a lot*</u>; <br><br> *They have become* <u>*friendlier*</u> *and* <u>*tell me everything*</u>. | Learnt to listen <br><br> No didactic communication <br><br><br> Has helped in their work <br><br><br> Friendly relationship <br><br> Confides | Listening skill <br><br><br><br> Feel supported <br><br><br> Empathic Relationship |

During the initial coding the researchers had identified and labelled repeated ideas and summarized the ones that seemed most meaningful. Manual thematic analysis had been performed.

### 9.2.1.3.     Review of the results

The results of the qualitative study conducted by the THP researchers are summarized in Table 29. Formal permission was obtained from the THP researchers to include the summary of these results in the thesis. This analysis helped understand that many skills that were taught to LHWs during THP were still in use, as those had become a habit. The best example is the skill of empathic listening that has helped them to develop a stronger relationship with women and also their families. This has helped LHWs achieve their own programme targets. Family engagement is important in the settings where majority of the families have a joint or extended family system.

LHWs have felt the need for a continued family involvement, as this impacts decision making in the homes.

TABLE 29: SUMMARY OF SELECTED RESULTS OF FOCUS GROUP DISCUSSION CONDUCTED BY THP RESEARCHERS

| Summary of selected results of focus group discussion conducted by THP researchers | |
|---|---|
| **Themes** | **Quotes** |
| Use of THP skills | " *Some of the things that we learnt then, we use even now*" <br><br> "*Even now our family oriented approach taught in THP helps accessing various issues like providing proper nutrition. It has been fed into our mind.*" |
| Family engagement – used frequently | "*During THP training I involved the other family members for the first time to help stressed mothers, now I do not feel shy of involving the family for example for child illness*" |
| Family engagement - usefulness | "*Mother in laws would show a temper previously, but our approach of engaging the family members through THP helped us in delivering the messages to the mother and get support from the family. Women were very happy; they said they never knew how to deal with their problems until now. Through this approach we positively influenced those men who used to beat their wives*" |
| Use of listening and problem solving approach | "*I am able to work in a better way because of the training that we received. Specially that I ask women about their problems now, listen carefully and try to solve them instead of just telling them*" |
| Use of pictures | "*Some women still have those calendars, they like the pictures. We liked this approach very much*" |
| THP skills not in use | "*The homework books did not work. Women did not follow those*" |

Though the LHWs currently were not using the counselling cards and the pictures that were provided to them during the THP project, they admitted the usefulness of picture messages. The behavioural activation achieved through dividing the tasks

into small doable steps and appreciation of women for achievements, was appreciated and was used while talking to women about immunization, breastfeeding and other MCH outcomes. Though the problem solving skill taught to LHWs was specific to depression, that could be applied to other areas and be useful. More specifically, five techniques were identified for universal use from the FGDs that are summarized in Table 30.

**TABLE 30: THINKING HEALTHY PROGRAM TECHNIQUES FOUND USEFUL FOR ALL WOMEN BY LHWS**

| Techniques | Brief description |
|---|---|
| Empathic listening | LHWs previously used didactic methods of communication. Skills of active listening (conveying interest and empathy, giving feedback) helped them develop a trusting, safe, 'therapeutic' relationship, not just with the mother but the whole family |
| Improving family support | LHWs were investing time on convincing key family members to support the mother. Using the shared agenda of the child's optimal development, they could successfully engage with husbands and mothers-in-law. These alliances were useful both to 'sell' the programme (thus improving the LHW's access to the household), and to improve support for the mother |
| Guided discovery using pictures | The LHWs found the use of pictures for communicating new ideas a powerful tool for engagement and behaviour change communication. Using characters depicting mothers, infants and other family members, the pictures help the LHWs and families discuss deeply held beliefs and undesired behaviours without alienating them. The images are also helpful with less literate women. This technique therefore served as a health communication tool for the LHWs and a powerful visual cue for the clients, to convey a new message |
| Behavioural activation | Building on the therapeutic relationship, alliance with the family, and identification of undesired behaviours that need to be changed or new behaviours that need to be adopted, the LHWs found this fourth technique useful to motivate mothers to put things into practice. The LHWs found this structured approach of breaking tasks into small manageable activities, and then working with the mother and other family members to develop a schedule in which these activities could be conducted. A simple 'health calendar' was found useful to record progress or problems |
| Problem solving | Problems and barriers in putting new knowledge and skills into practice are analyzed. Taking the time to listen to problems, and then work with the clients and their families to generate solutions was found to be more effective than the didactic approach |

### 9.2.1.4. *Intervention development workshops*

Following the adapted PREMIUM methodology, the findings from the literature review, in-depth interviews and the FGDs with the THP health workers were discussed by the THP researchers, local experts and community health workers in a series of **intervention development workshops**. All of these workshops were part of the PhD work, conducted by me, but included discussions on SPRING intervention as well.

The universal approach developed was named '**five pillars approach' or 5 pillars for short**. During this workshop the components of the THP technique which could be useful for targeting each area of maternal psychosocial wellbeing identified in the qualitative research were identified (Table 31 and Table 32 )

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TABLE 31: INDIVIDUAL-LEVEL MATERNAL PSYCHOSOCIAL FACTORS AND THE RELEVANT THP TECHNIQUE

| Individual-level maternal psychosocial factors and the relevant THP technique | |
|---|---|
| **Factor impacting care for child development** | **THP technique identified as useful** |
| 'Stress' (very common in women) | Empathic listening, family support |
| Interpersonal conflicts, such as marital disharmony, falling out with neighbours | Empathic listening, family support and problem solving: |
| Negative events in childhood (eg, poverty, losing a parent) leading to poor self-esteem, lack of motivation, resignation, irritability and argumentativeness | Behavioural activation |
| Negative behaviours, eg., neglecting and abusing children, delayed help-seeking if ill | Guided discovery, behavioural activation & problem solving |

| Family/Community level maternal psychosocial factors and the relevant THP technique | |
|---|---|
| **Factor impacting care for child development** | **THP technique identified as useful** |
| Lack of family support; expected to 'do everything' | Family support |
| Repeated unwanted pregnancies; too many children; no time to play with child | Guided discovery, family support, problem solving |
| Not empowered to take appropriate steps if child unwell | Guided discovery, family support, problem solving |
| Excessive work load, competing demands on time, poor health | Family support, problem solving |
| Economic issues, including poverty, competing priorities | Problem solving |
| Poorly educated women, traditional societies | Guided discovery |

### 9.2.2. Integration of the Five Pillars approach into a combined nutrition and early child development program

The next task of the workshop participants was to integrate these key components of the 5 pillars approach identified above into the SPRING programme (Table 33).

#### *9.2.2.1. Developing key messages and illustrations*

The participants of these meetings included the PhD student, the THP researchers, and local experts in psychology and anthropology, public health and primary care representatives. The mix of expertise not only brought different perspectives to the discussions; it also helped remove any individual or group biases.

Each psychosocial stressor identified through the literature review, the in-depth interviews, and the focus groups with the LHWs was selected one by one and a detailed discussion was carried out.



**FIGURE 23: BRAIN STORMING SESSIONS**

The findings from the in-depth interviews on each area/ topic were discussed and the qualitative research matrices and pasted quotes were referred to and cited if needed.

Relevant literature and best practice materials were consulted and used as a reference.

Based on the learning from the literature review, qualitative research and the 5 pillars identified through the focus group discussions, key messages were developed in the local language and hand drawn rough illustrations were prepared for the step of Guided Discovery. For example the draft illustration drawn by the PhD student in Figure 24 is an introduction to the SPRING program and the maternal psychosocial wellbeing component is highlighted by mother being supported by the family, which leads to a healthy and bright child. Final illustrations were then developed by an artist and those were used to get feedback from the key informants as a next step (Figure 24: Draft illustration developed during brainstorming session (Figure 24).

These key messages and illustrations were then weaved into the child development and nutrition message so that the maternal psychosocial strategies became a seamless part of the child intervention. The next section explains this in further detail.

**Development of the training and supervision manuals**

These were developed during the workshop, keeping in mind the findings of the qualitative research, which indicated the particular deficiencies and gaps in the LHWs' skill-set and training in dealing with psychosocial problems.
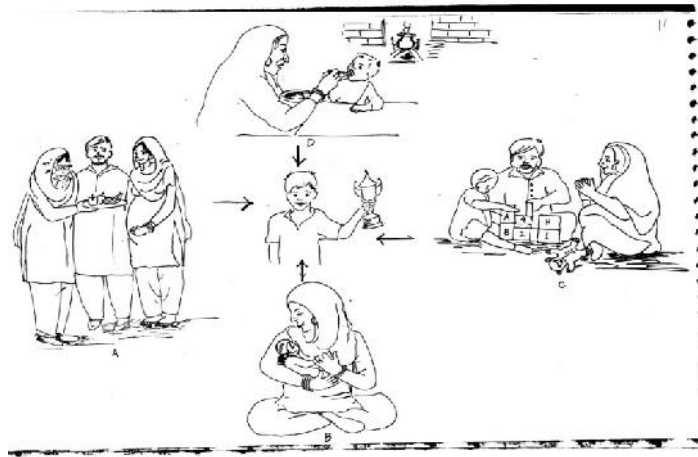
**FIGURE 24: DRAFT ILLUSTRATION DEVELOPED DURING BRAINSTORMING SESSION**



**FIGURE 25: ILLUSTRATION OF A MOTHER INTERACTING WITH A CHILD**

### 9.2.2.2.    *The integrated intervention*

The key feature of the integrated approach is that it underpins the delivery of the key nutrition and early development messages of the SPRING Programme. Thus, it is integrated into the main intervention, rather than being a stand-alone element.  Each individual session targeting a specific child development message uses the 5 pillars approach for its delivery. In practice, the approach works as follows:

Pillar 1: **Family support/ engagement**: The initial home visits emphasize family participation, and the training manual gives specific instructions on how this can be facilitated. Family members are encouraged to be active partners for the whole duration of the program.

To address maternal psychosocial wellbeing during pregnancy, childbirth and early childhood the family's participation is ensured by selecting a **support person** from the family. This person is supposed to assist the mother with her nutritional requirements, rest, and breastfeeding (Figure 26).



**FIGURE 26: ILLUSTRATIONS DEPICTING FAMILY SUPPORT**

Pillar 2: **Empathic listening**: Each session begins in an open-ended fashion, with the LHW allowing the woman to talk freely. She uses active listening skills to convey

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empathy, and makes a list of problems the woman faced in performing the tasks set in the previous session.

The focus is on developing an empathic relationship, showing skills of active listening and listening to the problems and then providing possible solutions. Below is the English translation of a page of the counselling card which explains the approach.

---

**Instructions for the LHWs**

Decide an appropriate time with the mother before the visit.

Talk to the mother, the appointed helper, and other family members if possible.

Remember! The LHW must keep in mind the integral five pillars of Roshan Kal counselling while talking to the pregnant mother.

**Beginning of the discussion between the LHW and the pregnant mother**:

LHW should start with greetings

Start the discussion by reminding about the discussion in the previous visit about the cooperation of the family for the mental and physical wellbeing of the arriving baby. Family was asked to identify such an individual from the family who will be there to help the pregnant mother during pregnancy and delivery. Ask them if such a person has been identified? If yes, appreciate them. And if not, ask them about any problem in doing so. Listen carefully and provide possible solutions. Help them to identify a helper as soon as possible.

Ask the pregnant mother how she's feeling and if she has any problems related to her general health, listen carefully, list the problems and provide the possible solution.

---

Pillar 3: **Guided discovery**: Guided discovery, as described in education and learning, is characterized by convergent thinking. The facilitator or teacher gives a series of statements or questions that guide the learner, step by step, making a series

of discoveries during the process leading to a goal (118). In our intervention each new health message related to play, stimulation or nutrition is conveyed using this approach. Using carefully researched pictures, the LHW discusses both undesired and desired behaviours. She is trained not to impose her views but to allow the mother and family to consider each viewpoint and come to their own conclusions. The idea is that the basis of any behaviour change begins at the cognitive level.

For example, to bring the family to support a lactating woman, two pictures were developed. One is showing the mother to be busy doing household chores while the family is aloof and the child is being ignored, while the other picture shows the family members doing the household chores and the mother breast feeding her child. The LHW first shows the pictures to the family and asks for their views on it. The difference in the two families in the pictures is discussed keeping the child as the focus and the family is encouraged to come to a logical conclusion.
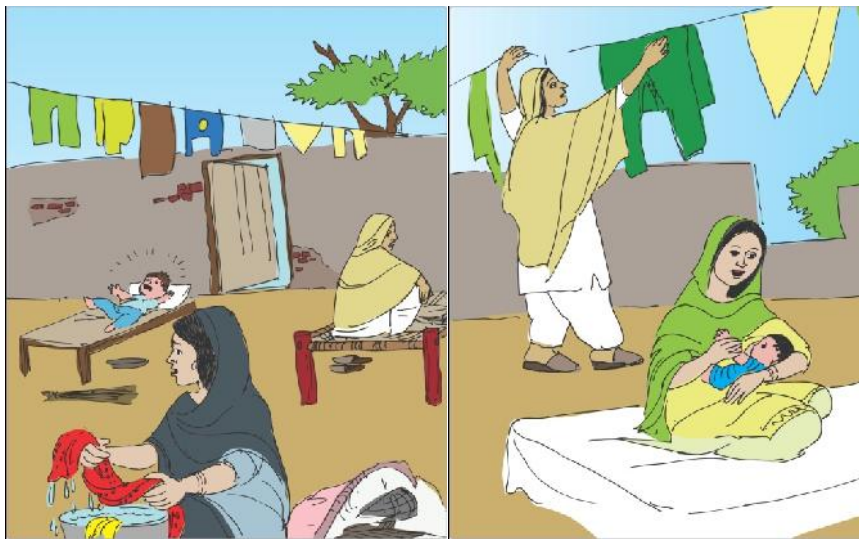


**FIGURE 27: PICTURES FOR GUIDED DISCOVERY**

In a similar way, to bring the family to think about the concept of birth spacing which is a key issue affecting maternal psychosocial wellbeing, the picture below is shown (Figure 28).

**FIGURE 28: PICTURE ACTIVATING ALTERNATIVE THOUGHTS ABOUT A SUITABLE ENVIRONMENT FOR THE CHILD**

The family is asked to comment on this picture and is encouraged to talk about a suitable environment for child rearing. The picture clearly demonstrates a worried pregnant woman, bottle-feeding an infant, whereas another young child is being ignored. Bringing the family's focus to the suitable environment for the child will make them think about birth spacing.

Pillar 4: **Behavioural activation**: Once the message is received and accepted, the activities related to it have to be made manageable so that a sense of mastery is achieved. The training manual has suggestions for how each nutrition or play-related task can be broken down and monitored with the help of family members. For this health calendars have been developed, that are left with the family. These include the pictures with captions and boxes for behaviours that need to be practiced and are then ticked by them (Figure 29).

For example the following picture carries a caption about family support.

*"Family support- key to child development"*



**FIGURE 29: A PICTURE ON THE CALENDAR**

This is followed by giving the family tasks to do and tick the boxes if those are achieved. For example,

☐ We have selected the support person for the pregnant mother

☐ We took care of maternal diet and rest.

Pillar 5: **Problem solving**: The LHW spends time discussing the problems the woman faced in carrying out the tasks suggested in the previous session. She discusses possible solutions, which she can generate through discussion with the family, or through her supervision.

### 9.2.2.3. *Training materials*

The following **materials** were developed.

o **LHW Training Manual**: Will help LHW in planning a visit in an organized way and are for background reading and problem solving.

o **Counselling Cards**: These will facilitate the home visits of the LHW and the pictures will be used for the guided discovery. The counselling cards consist of two pages facing each other, one is meant for the women and the other for the LHW. The LHW page has objectives of the visit and key instructions. Whereas page for the community, comprises of pictures and slogans.

o **Calendars**: The calendars will serve as reminders, a source of information for the family and community will help activate the key actions desired after the behaviour change through tick boxes and help the LHW in identifying, counselling for and problem solving the hard to change behaviours .

### 9.2.2.4.     *Feedback on intervention materials from stakeholders*

Although our qualitative research findings allowed us to incorporate the community perspectives in the development of the intervention, we thought it was equally important to get a regular and iterative feedback from the community stakeholders during the process of intervention development.

### *Community Stakeholders*

The key messages for each session were taken for refinement and acceptability to a selected group of key informants (mothers, grandmothers, fathers, LHWs, LHS). Using the prepared illustrations and messages helped refine the materials for cultural context, acceptability and feasibility of the intervention. This was done in weekly cycles.

The objective of the feedback was to check the understanding, acceptability, difficulties in delivery of the messages, how can the message/ illustration be modified to be more acceptable and how much training / supervision a LHW may need to deliver this message. The draft illustrations and slogans which are part of the counselling cards were shared with them. Majority of the messages and illustrations were easily understood by the people in the community.

The key informants were approached and explained about the objectives of the session being evaluated. They were then given some time to look at the draft two page outline and illustrations (it was read out to illiterate respondents). The respondent were then asked for their views using probes such as

1.      What do you understand by this picture/ message?

2.      Will this message be acceptable in the community? (Cultural appropriateness, / language).

3.      Is this the best way to deliver this message?

4.      Will there be any issues in the delivery of message (for LHW and LHS) .What are those issues? How to address these issues/ modify the message?

5.      What are your suggestions to improve the message?

Most of the messages were easily understood by the families and LHWs, since the messages were developed by the team members who belonged to the similar setting in Rawalpindi. So they were well versed with the local language and culture. Some of the pictures did not clearly send the message across and some women had different interpretation, which were then re drawn and modified. For example in the picture showing a pregnant mother to be bottle feeding the child, women could not point out that the woman was pregnant, which was then re-drawn.

Some of the cultural issues were also addressed in the pictures after the feedback from the families. LHWs gave suggestions to improve some slogans or captions used with the pictures, to make these more effective. For example in the family support picture the mother in law was shown to be washing clothes while the pregnant woman was resting. This was thought to be inappropriate by LHWs as this picture might have annoyed the mother in law.

**LHW Programme Feedback**

The intervention material was shared with the LHW programme and their written comments were sought. The perspective of the LHW programme personnel was extremely important for as the suggestions were useful and helped in understanding the implementation issues. This helped integrate the intervention with the LHW work.

*9.2.2.5.      Refinement and Final intervention*

The draft intervention was refined to include all the suggestions and reviews provided by various stake holders. All the training materials and session delivery

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tools such as counselling cards have cues to remind the LHWs to use the 5 pillar techniques. The key features of the 5 pillars approach to maternal wellbeing are shown in Table 33.

**TABLE 33: KEY COMPONENTS OF THE 5 PILLARS APPROACH INTEGRATED INTO THE SPRING**

| Item | Key features |
|---|---|
| Theoretical framework | Uses techniques derived from Cognitive Behaviour Therapy including empathic listening, challenging beliefs using pictures, behavioural activation and problem solving. Involves family members and is participatory. |
| Delivery agent | Community-based health workers called Lady Health Workers (LHWs). Generally educated to 10th Grade, and have one-year training. No prior training in psychosocial care or counselling. |
| Sessions | The approach is integrated into each of the 24 monthly SPRING sessions delivered at home to mother and family; 3 sessions in pregnancy; 1 immediately after birth; 23 monthly sessions thereafter. Sessions integrated into the routine visits of the LHWs. |
| Tools | Training manual for health workers and trainers with step-wise instructions for every visit; pictorial counselling cards to use during home visits; a 'health calendar' for families. |
| Training | 1.5 days out of the 5 days of SPRING training - including lectures, discussions, and role plays followed by one day of field training. |
| Supervision | Monthly 2-hour sessions in groups of 10-15 conducted by LHWs own supervisors trained by the intervention team. |
| Other features | Integrated with routine monthly training and supervision programme; compatible with existing district-level administrative structures. |

## 9.3. Summary

The process of intervention development had much strength. The key areas were identified after a detailed qualitative study, in the rural community, that helped the intervention to be nearer to the local and contextual needs. The experiences of the THP workers were utilized through review of the focus group discussions with them, and this vital information about the real world use of various components of THP proved to be very beneficial for the development of a universal intervention. The workshops with various stakeholders, brought richness and varying perspectives during the development phase. The community and LHW programme input provided important information about the delivery and acceptability of the intervention.

The approach developed does have many advantages. First, as suggested above, it is maternal focused. Second, it is integrated and holistic, enabling the health worker to fill the knowledge gaps on maternal psychosocial wellbeing among the target audience. Third, it uses strategic time points and the technique also includes other key family members to support the mother and her infant. Fourth, it enables the worker to listen first, rather than tell, and then analyse the family's beliefs and practices, and gently challenges these with alternative concepts, supported by culturally appropriate and logical explanations.

**10.Chapter Ten: Development phase-Discussion**

## 10.1.     Introduction

Based on the methodology suggested by the MRC Guidelines for the development and evaluation of complex interventions, and the PREMIUM methodology for adaptation of psychosocial interventions to a different context, the development phase of this research was completed. A literature review was conducted to understand psychosocial wellbeing from sociological, psychological and public health angles. A qualitative study was conducted to understand maternal psychosocial stressors associated with caring for a young child in the context of rural Pakistan. This data was used, in conjunction with experts in mental health and other stakeholders, to adapt an existing targeted intervention for maternal depression, into a universal intervention for all women – the 5 Pillars Approach to Maternal Psychosocial Wellbeing.

In this chapter, the focus of the discussion is the qualitative study, beginning with general methodological considerations, followed by a discussion of the key findings in the light of contemporary research. The implications of the finding are then discussed.

## 10.2.     General methodological considerations

### 10.2.1.     Study population

Since the child health outcomes of the developing countries have huge urban- rural disparities, with the rural population faring worse, and having poorer access to services (119, 120), the qualitative research was conducted in a rural community of Pakistan. Moreover the original Thinking Healthy Programme was originally delivered in a rural community, and it would be less problematic to adapt it to similar settings. However, the rural area, selected purposively was near a major town, accessible by road and the majority of the population lived in brick houses with electricity. This was done because of the fact that HDRF has a presence in the area that helped in approaching the population. Hence the findings might not be generalized to the extremely underprivileged areas of the developing world. But the

development indicators of this area are close to the national statistics for example the literacy rate in the study area was 62% compared to the overall national rural literacy rate of 58% (121).

### 10.2.2. Study design

Because an in depth understanding about the beliefs of women and families was needed to answer the questions posed by the research, a qualitative study design was considered the most appropriate. The qualitative interviews and observations aimed to develop concepts that help in the understanding of natural phenomena highlighting the meaning, experiences and views of the participants.

Observations in the household helped in understanding behaviours related to maternal workload, child-care practices, and the parent-child interaction. The narratives gave women an opportunity to describe their personal experiences, which helped the researchers understand how women perceive events.. A triangulation of the three methodologies and the comparison of results provided a more complete understanding of the stressors and behaviours, as has been observed in other studies using the triangulation method (122).

### 10.2.3. Response rate

While response rate is usually a concern of quantitative studies, still, a high rate of non-responders in a purposive sample may lead to biased results. Out of the 57 individuals approached for the qualitative research 53 participated in the study; a response rate of 93% which was achieved by approaching the households through their LHWs who are well respected in the community.

### 10.2.4. Strengths and weaknesses of data collection methods and analysis

The previous experiences and knowledge of the researchers affect the interpretation of qualitative research findings and can be a source of prejudice if the researcher does not reflect upon his or her positioning on the subject. The researchers kept field notes and during the reflection sessions, the researchers made a deliberate effort to

voice any potential assumptions so that these could be challenged and discussed. Working with a team and having regular reflection sessions helped to minimize the subjectivity in the research process. The interviewers were fluent in the local language, and belonged to a similar area. For the field visits they dressed up according to the local culture and remained neutral in body language to minimize interviewer's influence.

The use of various data collection methods and the triangulation of the findings was strength of the study. There may have been a 'Hawthorne effect' (123) on the behaviour and response of families because of the knowledge that they were being observed. The data was collected in the households and the presence of other family members might have affected responses. However, the majority of the interviews were conducted in a place where a private conversation could take place. The questions and probes were designed to be neutral and the sentences and words used were contextual and culturally appropriate. Some of the questions related to sharing of workload or family support may have been sensitive and may reflect the frame of mind of the respondents on the day of the interview. Indirect questions were used to get a picture that was closer to reality.

The purposive sampling of participants to represent various socio-economic and educational levels was a strength. The maximum variation samples documented the diverse perspectives of the study population.


## 10.3.    Discussion of the main findings

The findings that provide evidence for the development of a maternal psychosocial wellbeing intervention are discussed. Maternal psychosocial wellbeing found to be affected by various individual and family/community level factors which in turn impact child health and development.

### 10.3.1.    Individual level factors impacting care for child development

Psychological stress was found to be quite common amongst pregnant women and mothers. This is consistent with various quantitative studies conducted in the area (37, 62). The main reasons for stress were financial worries, interpersonal conflicts, lack of support, and issues related to gender inequality, which is consistent with other studies from South Asia (58). Another factor associated with maternal stress was the fear associated with childbirth, especially if there was a past history of obstetric complications.  The general literature reports the rate of abnormal fear of childbirth at around 15-25%, (124, 125). It has also been reported that perinatal depression might increase the magnitude of the fear (126). Poor socioeconomic status was found to be associated with maternal stress and deficiencies in child-care. The link between poverty and poor child development has also been previously documented (127).

It was found that women reporting stress were withdrawn and interacted less with their children compared to women who reported to be non-stressed. However this has previously been reported in a study on 2,650 mothers which revealed that maternal stress affected the parent-child interaction (128)

Interpersonal conflicts and marital disharmony was found to be an important factor that impacted child-care. Various studies support the impact of marital problems with physical (129) and functional development (130) of the child. However our study did not particularly look into the issue of domestic violence as a contributory factor because of the sensitive nature of the questions. Since LHWs are women from the same community, women would find it difficult to share information about domestic violence with them and the data would not have been reliable.

The qualitative research findings also suggested that women who were stressed reported certain negative behaviours, including child physical abuse, towards the child. Women themselves related the child abuse with stress or conflicts in the family. Other studies have also shown that in high-risk families depression is associated with maternal perpetration of aggression (131). Another unhealthy behaviour is delayed health seeking for the child that was observed more in the

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women reporting stress. Poverty, lack of awareness, and access to health services are other factors previously reported that lead to delayed health seeking (76).

Some of the women who were stressed because of family conflicts or their financial situation, showed a resigned adjustment to their circumstances. This is one of the coping mechanisms that have been documented in relation to stress due to interpersonal conflicts or poverty (132).

### 10.3.2. Family/community level factors

Majority of women were living in a joint family system which is consistent with the rural family system in Pakistan reported previously (133). Family support was a major factor contributing to wellbeing of mothers and child-care. There were positive examples of family supporting the mother and helping in child rearing. Women who enjoyed this support were relaxed and less stressed than those who were not helped by the family. One of the advantages narrated by women was the ability to share their problems with the family, which can contribute to reducing stress in women. It is well documented that the lack of family support to the mothers, especially the support from husband, is an important risk factor of depression (134).

The lack of husband support and its association with stress was also reported in our study. A central aspect of husband's support was communication with the wife, which relieved women's stress. The study also found that fathers had little time to interact with the children and child care was thought to be the primary responsibility of mothers.

A study in Bangladesh looked at the practice of rest during pregnancy and found that failure of the family members to share the workload contributed to inadequate rest (135). Lack of family support was found to be an important reason for increased workload of pregnant women in our study, leading to inability to rest and reduced availability of time for child interaction.

Repeated unwanted pregnancies, was an important theme that emerged from the data, related to maternal stress and lack of time for child care. This depicts the national statistics of family planning and birth spacing. Contraceptive prevalence rate (CPR)

in Pakistan is among the lowest in the region (136). There are 5.7 million women with an unmet need; 2.4 million with a need to space and 3.3 million with a need to limit (137). Moreover shorter birth intervals are known to contribute in higher child mortality (138).

There was a lack of maternal autonomy and ability to take decisions that impacted child care. Even the decisions about the child feeding practices, contraception and maternal diet were influenced by other family members. According to the findings of a study in Pakistani slums, lack of maternal autonomy led to a 2-3 times higher risk of child mortality (139).

Many women were living with their extended families and had no control over the environmental factors that impact childcare. Owning a house was considered to be important and was reported by many women as a factor that was related to their independence. Not owning their own place impaired their autonomy and ability to take decisions about the childcare. This was reported as a reason for maternal stress as well.

The competing demands on a woman's time included household chores; work in the fields, child care, care of the elderly and the husband. Moreover with more children, there was more work and stress. Many of the women reported lethargy and fatigue, which could indicate physical ill health. Maternal anaemia is common in Pakistan (140) and could be a contributory factor. The maternal wellbeing and childcare both are affected by poor health of women, and a focus on psychosocial wellbeing should not detract from the fact that the mind and body are inextricably linked, and the health of one cannot be achieved with the other.

Maternal diet was found to be compromised, because of poverty and also because children and men take priority over women in some households. Mothers themselves gave priority to their children when it came to food and did not think about their own, or their unborn child's needs. This was also found in a qualitative study on maternal food practices in Bangladesh where women consistently received the last and smallest food portions during mealtimes (141). No previous study in Pakistan has reported competing priorities as a risk factor for maternal malnutrition. However, food insecurity and food choices (142) have been reported as major reasons.

Maternal education is reported to have a strong influence on child nutrition (143) and child development (144). Our qualitative research indicated that poor maternal education impacts various childcare practices, but was also associated with maternal stress. The health care of children is affected as treatment for common illnesses was usually sought from faith healers and quacks in case of being uneducated. Adverse cultural practices like giving pre-lacteals (e.g. honey, herbal preparations) to the newborn and discarding colostrum were common behaviours in uneducated women.

It is evident that maternal depression and psychosocial wellbeing has a huge public health importance, specifically in Pakistan. Our intervention that was based on evidence based technique tested in Pakistan, has an advantage of being very contextual. The rich qualitative study findings, involvement of a group of researchers in the reflection of the data collected, workshops with original THP researchers and experts in the field , the sensitivity towards developing an intervention based on local experiences and learning to integrate into existing health systems add vigour and dynamism to our intervention.

The Figure 30 below demonstrates that our results from the qualitative analysis support all the 7 moderators and as risk factors (shown by star sign), outlined by previous studies. It also shows how our integrated intervention is trying to impact mother child interaction, quality of child care and maternal capability and wellbeing.
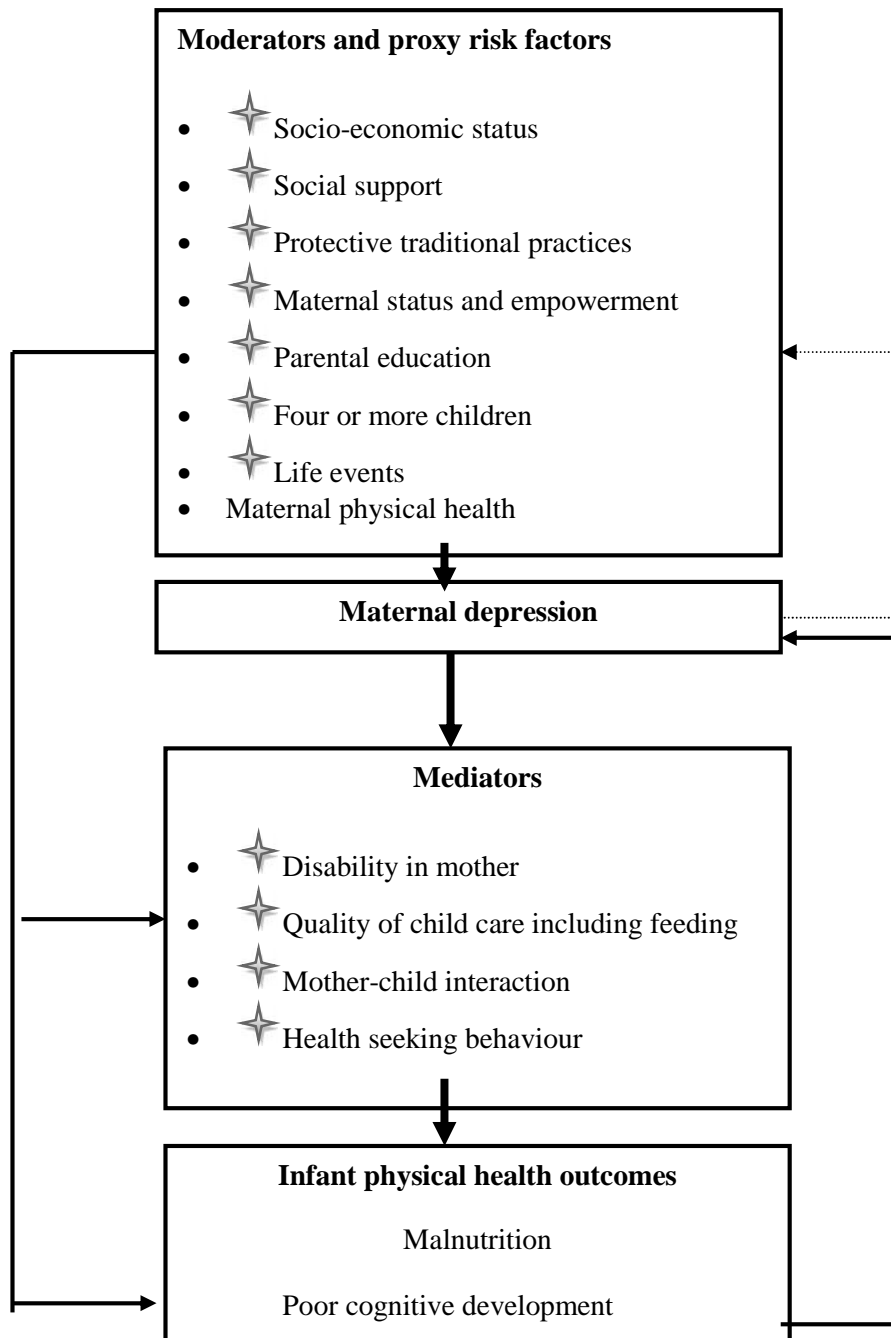
**FIGURE 30: RISK FACTORS SUPPORTED BY OUR QUALITATIVE RESULTS AND MODERATORS THAT OUR INTERVENTION IS TRYING TO IMPACT DENOTED BY** ✦

### 10.3.3.     Role of lady health workers as delivery agents

The lady health workers (LHWs) are the community health workers in Pakistan who have an access to pregnant women and children. More than 60% of the total population of Pakistan, mostly rural, is covered by the LHW programme with more than 90,000 LHWs all over the country (145). The suitability of LHWs as delivery agents for the proposed maternal psychosocial wellbeing intervention was assessed in the qualitative research.

LHWs perceived the wellbeing of the mothers to be the physical wellbeing alone. The psychosocial wellbeing concept was new for them. This could be due to the fact that the focus of the maternal and child health (MCH) has always been the physical and not the mental health of women (1) and LHWs had never received any trainings related to maternal psychosocial wellbeing.

The interviews with the community and the LHWs corroborate that LHWs are accepted in the community. A study in Pakistan outlined the major strengths of the LHW program as providing services at grass root level, and the community acceptability of health workers (146). LHWs expressed that they felt proud for being appreciated and respected by the community, which is also reported in other studies (147).

The visits of the LHW were found to be regular in majority but the duration of the visits was reported to be very short. The reported regularity of the visits could have been due to the polio programme which mandates the LHWs to visit every household monthly with strict monitoring as well as monetary reward. However the visits for polio vaccination are short and the LHWs cannot deliver the health messages effectively during these visits. Moreover the findings suggested that LHWs avoid difficult families and do not engage family members in the household other than the pregnant women. No studies in Pakistan were found that looked into the area of family engagement by the LHWs.

The other important finding from the qualitative research was that the LHWs had poor skills of empathic listening, and problem solving. Previous studies have also pointed out that LHWs were not equipped to communicate effectively with families

(148) and efforts are needed to be directed to enhance the communication and counselling skills of LHWs (149).

Supervision is an important aspect of continued quality control, which was found to be very weak. Lady health supervisor (LHS) visits in the field were few and far between. Weak supervision by the LHS has also been reported by other studies in Pakistan (150).

## 10.4. Strengths and weaknesses

The fact that no previous study has qualitatively looked at the maternal psychosocial factors that impact early child development in the rural areas of Pakistan, renders the findings of this study exceedingly important for developing any ECD or nutrition intervention. Majority of the findings of our study are consistent with previous global research and research conducted in Pakistan.

A major strength of the study is the use of various levels of triangulation that imparts a high degree of validity to the study. The *data triangulation* by using various sources to obtain information including pregnant women, mothers of young children, grand mothers, fathers , community health workers and their supervisors helped bring out the consistencies and inconsistencies in the data. The *investigator triangulation* was achieved by working in a team and having reflective sessions that helped in the broader and deeper understanding of the data. *Methodological triangulation* was achieved through using various qualitative methodologies (IDIs, narratives, observations).

A strength of the study also lies in the fact that the study was conducted in a representative rural area, which are usually deprived and where there is more need for interventions. Also, the study was conducted in the naturalistic environment, giving authenticity to the findings.

One of the strength of the study is the analysis that was performed in the original language in which the data was collected. This helped the researchers to stay close to the raw data and helped in the contextual understanding of issues.

The limitation of the study is its inability to be generalized, as the study was conducted only in one rural area of Pakistan and may not reflect national practices. The impact of various maternal psychosocial factors on child care is studied in-depth, however an association can only be established through quantitative research.

## 10.5.    Implications and future research

The findings of the qualitative research have important implications for researchers in the early child development and for the policy makers. Maternal psychosocial wellbeing and its link to child care have not been previously studied in Pakistan and the findings of this study can provide useful information on the local context. The findings from the qualitative research showing high levels of maternal stress impacting child care are vital to creating effective integrated models of child interventions and to put local information and arguments on the table for discussion and practice among researchers and policy makers. The importance of improving the communication strategy of the LHWs can have huge implications for the maternal and child health.

The study informed the development of a psychosocial intervention that could be integrated into child development programmes in a seamless fashion. Such research improves the chances of success of interventions because these can be tailored to local circumstances and culture (6).

This study paves way for future research exploring the association between maternal wellbeing and child developmental and nutritional outcomes. The various components of maternal psychosocial wellbeing, including autonomy, family support and coping strategies and their relationship to child care can be established through quantitative research.

**11.Chapter Eleven: Feasibility study-Methods**

### 11.1.    Introduction

This chapter describes the feasibility study of the maternal psychosocial wellbeing approach (the 5 Pillars) integrated into an early child development intervention – the SPRING Programme. The rationale, objective and methodology of the feasibility study are described in this chapter.

### 11.2.    Feasibility Study

### 11.2.1.    Rationale

According to the MRC Guidelines for evaluation of complex interventions, such interventions should be tested for feasibility before it can be evaluated through a definitive randomized trial. We wanted to test the feasibility and acceptability of the intervention when delivered by trained community health workers in real life settings.

### 11.2.2.    Objective

The objective of the feasibility study was to evaluate the acceptability, implementation and demand of the 5 Pillars approach, following its implementation in one area of the study setting. The evaluation was conducted at the level of the mothers who received the intervention as well as the Lady Health Workers who delivered it.

### 11.2.3.    Methods

The feasibility study employed a qualitative design, following the MRC guidelines and PREMIUM study (Figure 2), along with direct structured observations of the intervention being delivered in the community. The latter was conducted to evaluate the intervention delivery for fidelity, i.e., to ensure the intervention was being delivered in the manner in which it was designed to.

### 11.2.3.1.    *Setting*

The feasibility study was conducted in a geographical area, which was similar to, but not part of the SPRING trial study area, so that it did not have an effect on the trial outcomes. The site for the feasibility study was the Union Council of Bagga Sheikhan, in the rural area of District Rawalpindi, Pakistan (Figure 31).



**FIGURE 31: SATELLITE VIEW OF A TYPICAL VILLAGE OF THE PILOT STUDY SITE- BAGGA SHEIKHAN**

Bagga Sheikhan has a population of 18,324 and 90% of the population is covered by the LHW programme. According to the information provided by the health department, there were 13 LHWs and one LHS working in the study area. The local language of this area was Punjabi with Potohari and Hindko being the predominant dialects. Majority of the population was dependent on farming and majority of the men were employed in the public or private sectors in the nearby city of Rawalpindi and Islamabad, the army, or working abroad as labourers in the middle-east.

**11.2.4.  Delivery of the 5 Pillars approach for maternal psychosocial wellbeing**

*11.2.4.1.  Participants*

All the 13 LHWs working in the union council Bagga Shiekhan were recruited for the feasibility study. The necessary departmental permissions and informed consent from the LHWs were obtained. There was one lady health supervisor (LHS), supervising these 13 LHWs.

*11.2.5.  Training of the health workers*



FIGURE 32: PARTICIPANTS OF THE TRAINING

After obtaining permission from the LHW program, training of all the 13 LHWs was conducted in the basic health unit (BHU) of Bagga Sheikhan. The training (see Appendix 8 for a detailed program) was delivered by the PhD student along with the intervention team of the SPRING Programme. The 5 pillars training component was integrated into the overall SPRING training programme, and was conducted in first 1.5 days of the 5-day training programme. However the 5 pillar skills learned in the 1.5 days were repeatedly practiced throughout the 5 days as these were integrated into every other aspect of the early child nutrition and development training.

The training emphasized hands-on practice rather than didactic teaching. Thus interactive sessions, and role-plays were utilized extensively throughout the training.

The sessions started with an **interactive discussion** (Figure 33) around one of the pillars, allowing the LHWs to share their views, experiences and suggestions. Flip charts were used for this session, to document their views. This aim of this session was to achieve convey a basic understanding in the LHWs about the approach, and to help them contextualise it to their every-day work.



**FIGURE 33: INTERACTIVE SESSIONS**

**Role plays** (Figure 34 and Figure 35) provided the LHWs with an opportunity to practice these skills. For example, in a typical role-play one of the LHWs would be asked to play herself while another would play the role of a mother or a mother-in-law. The LHW character would then deliver a key child development message using the 5 Pillars approach, The rest of the group were asked to closely observe the interaction and note down points for a constructive discussion about how the approach was similar or different to their usual practice. In this way, new skills and knowledge were gradually assimilated into their existing practice.

**FIGURE 34: ROLE PLAY**

An example illustrating the instructions for a role play focusing on problem solving was as follows:

*Select a participant to play the role of an LHW visiting a pregnant woman, and another to play the role of a pregnant woman. The pregnant woman has heard that it is important to visit the hospital for an antenatal check-up, but her mother-in-law feels it is not necessary and may harm the baby. She asks the LHW what to do. The group observes this interaction, and notes how they would try to solve this problem. Ask other members of the group to role-play the problem solver. In the end ask the LHW playing the mother to comment on the solutions offered, which ones she found most helpful, and why.*



**FIGURE 35: ROLE PLAY UNDERWAY WITH A MOTHER CHILD PAIR**

If actual mothers visiting the BHU wanted to take part in a role play, they were encouraged to do so, adding an element of reality to this exercise.

## 11.2.6. Implementation

After the trainings, the LHWs were asked to use the newly learnt skills in their routine practices and deliver the intervention to pregnant mothers and mothers with young children. The LHWs then proceeded to apply the SPRING intervention incorporating the 5 Pillars approach for maternal psychosocial wellbeing approach in their respective areas. The evaluation of the LHW performance was done 2 months after implementation.

### 11.2.6.1. *Field Training*

In addition to classroom training, each LHW was supervised and trained in the field when she delivered actual sessions to three different women in her catchment area. This was conducted by one trained facilitator, and observed by the PhD researcher. An observation checklist was used by the researcher to rate the performance of LHWs (Appendix 9). The checklist rated the LHWs on how well she was using each of the technique described in the 5 pillars approach. After each home visit, structured feedback was provided to the LHW. Once all the three visits were completed, the trainers provided a detailed feedback to LHWs on the basis of their observations, keeping in mind the following points:

➢ Asking for a self-evaluation of what the LHWs thought they did well and where they could improve.
➢ Describing exactly what they did well and what could be improved, in a positive and constructive manner.
➢ Constructive feedback combined with praise
➢ Avoiding the use of negative words while giving feedback.

### 11.2.7.    Supervision

#### 11.2.7.1.    *Group Supervision*

The LHWs routinely have a monthly supervisory meeting at the basic health unit, with their supervisor (LHS) and the in charge doctor of the basic health unit. This normally consists of all the LHWs from a Basic Health Unit meeting in a group with their supervisor every month for about 2 hours. For integration into the system, the supervision for the feasibility study was included in the routine monthly supervisions.

Supervision sessions for the 5 Pillars were conducted by the PhD student with the intervention team. During supervision, LHWs discussed problems and shared both their successes and difficulties. Solutions were not prescribed by the SPRING supervisors but were generated through 'brainstorming' sessions and discussions within the group. This not only brought solutions from the local context but also gave a level of confidence to the LHWs and strengthened peer supervision. Local language, customs and practices were thus built-in in these solutions.

#### 11.2.7.2.    *Field Supervision*

The PhD student accompanied the lady health supervisor for field supervisory visits. For each LHW one field supervision was carried out, where the LHWs were observed in the household conducting a routine visit. The problems faced by the LHWs were discussed and feedback for improvement was provided after the visit. This helped the supervisor in learning how to supervise appropriately.

### 11.3. Evaluation of feasibility

### 11.3.1. Design

As discussed in chapter 1, there is growing focus on the implementation of evidence-based interventions in public health and it is recommended to adapt and evaluate interventions through pilot or feasibility studies (151) prior to population level evaluation. Feasibility studies mainly answers the question "can this intervention be implemented successfully?" Pilot studies; mainly ask the question "can this study be done?" The main concern of this study was the former, but the difference between pilot and feasibility studies further described below.

#### 11.3.1.1. *Feasibility vs. pilot studies*

Feasibility and pilot studies are terms that are frequently used in the literature, but they are used inconsistently and interchangeably (152). A review of 54 published papers in seven medical journals from 2007-08 found there was no clear distinction between 'feasibility' and 'pilot'(152). The NETSCC (NIHR Evaluation, Trials and Studies Coordinating Centre) define these two types of studies separately. Pilot study is a version of the main study that is run in miniature to test all the procedures in the main study and refine the methodology accordingly. The feasibility study, on the other hand, tests if all the components of a complex intervention work as intended in real life. Feasibility studies might also provide information about important parameters that are needed to design the main study, e.g., the willingness of the participants (153). However, feasibility studies generally do not evaluate the primary outcome of interest as that is left to the main study (153). In view of these differences, the approach taken to evaluate 5 Pillars is best described as a feasibility study.

### 11.3.2. Choice of a qualitative design

Except for the fidelity, which was evaluated using a quantitative checklist, the rest of the feasibility parameters selected were evaluated through qualitative study.

### 11.3.3. Feasibility Parameters

The feasibility parameters were selected from the criteria listed for feasibility studies in a paper by Bowen et.al, 2009 (151). These criteria included acceptability, integration, implementation, demand and practicality. All were relevant to the initial evaluation of the 5 Pillars approach.

The feasibility parameters that were selected to define feasibility for the current study are outlined below. A summary of the criteria and the methods employed to evaluate each criterion are shown in Table 34.

#### *Acceptability*
This explores how the families receiving the intervention and the health worker's implementing the 5 pillars approach reacts to the intervention. Moreover, the views of key management personnel of LHW programme were also assessed.

#### *Demand*
Demand for the 5 pillars approach was assessed by gathering data on estimated use of the approach by the LHW when visiting the households.

#### *Implementation*
This parameter is related to the extent, likelihood, and manner in which 5 Pillars approach can be fully implemented as planned and proposed.

#### *Integration*
This parameter explores the process of integration, and documenting the extent, to which 5 Pillars approach, be integrated within an existing LHW system. The methods used for each feasibility criteria are outlined in Table 34.

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**TABLE 34: FEASIBILITY CRITERIA AND METHODS USED FOR EVALUATION**

| Area of Focus | Feasibility Criteria | Outcome | Methods used |
|---|---|---|---|
| Acceptability | To what extent is 5 Pillars approach judged as suitable, to LHWs?<br><br>To pregnant women and mothers?<br><br>To the LHW programme managers? | Intent to use<br>Perceived appropriateness<br>Fits within LHW routine work culture<br>Perceived positive or negative effects<br>Families think it to be appropriate | Focus group with 13 LHWs<br>In-depth Interviews with 23 mothers<br><br>In depth interviews with the LHW programme manager, District health official. |
| Demand | To what extent is this approach likely to be used by the LHWs | Actual use<br>Expressed interest or intention to use<br>Perceived demand by the community | Focus Group with LHWs<br>IDIs -LHWs<br>IDIs- mothers |
| Implementation | To what extent can 5 pillars approach be successfully delivered to the households? | Degree of execution ( fidelity)<br>Integration of 5 pillars in each session delivered<br>Success or failure of execution\<br>Amount, type of resources needed to implement<br>Factors affecting implementation ease or difficulty | Structured quantitative observations of LHW visits<br>IDIs- LHW<br>IDIs- mothers |
| Integration | To what extent can 5 Pillars, be integrated within an existing system? | Perceived fit with infrastructure<br>Perceived sustainability | IDIs and FGDs with LHW, LHS |

### 11.3.4.    Participants

The participants of the feasibility evaluation included the trained LHWs, 10 pregnant women and 13 mothers of children whose ages were 2 years or below. The demographics of the 13 LHWs have been described in the results section. The respondents from the management included the head of the district health official (EDO) and the LHW programme manager. An in-depth interview was also conducted with the supervisor of the LHWs.

### 11.3.5.    Sampling

Community participants were purposively selected within various socio economic and educational groups, from the LHW list of her households. The socioeconomic Likert scale described in the development phase (Appendix-5) was used and women belonging to rich, poor and middle class were all represented in the sample. LHWs were not aware of the participants to be interviewed or the timings of the interviews, to prevent them from briefing the households about their responses or influencing the households. Consent was obtained from women on the day of the interviews.

All the LHWs and LHSs were also included in the sample. The sample size was decided by data saturation for women who received the intervention whereas for LHWs all were interviewed. Purposive sampling was used for the LHW programme personnel, the key personnel who had worked in the programme for more than 5 years, who were involved in LHW trainings and monitoring.

### 11.3.6.    Data Collection

The feasibility evaluation data was collected using focus group discussions (FGDs), in-depth interviews (IDIs) and observations at various time points (Table 35). Focus group usually comprise of 8- 10 people, however we included all 13 LHWs. Although smaller groups permit for more thoughtfulness and meaningful contributions, they limit the total range of experiences because there are fewer people in the group (154).

**TABLE 35: DATA COLLECTION TIMING**

| Method | Participants | Number | Time point |
|---|---|---|---|
| FGD | 13LHWs | 1 | Immediately after training |
| IDIs | LHWs | 13 | 8 wks post training |
| | Pregnant Women | 10 | 8 wks post training |
| | Mothers of children <2 yrs | 13 | 8 wks post training |
| | LHW programme managers | 1 | Before  trainings |
| | LHS | 1 | 8 wks post training |
| Observations | LHWs | 13 x 4= 52 | 8 wks post training |

### 11.3.7.    Pilot testing of guides

The field guide for the focus group discussion and the questionnaires for in-depth interviews IDIs were developed and pilot tested on 2 LHWs from a different area and 4 women in the community. Revisions were made and final tools were developed (Appendix10).

### 11.3.8.    Training of researchers and data collection

Focus group discussion and in-depth interviews with the LHWs were conducted by the PhD researcher. Women were interviewed at their homes by the PhD researcher (10) as well as the women researchers hired for the purpose. These researchers were experienced in conducting interviews and in qualitative research. They were trained

by the PhD researcher for conducting the interviews. All the observations of 13 LHW performances were conducted by the PhD student (n=52).

### 11.3.9. Focus Group discussion

The Focus Group Discussion (FGD) with the LHWs was conducted at the basic health unit and all the 13 LHWs were invited to take part. Informed consent was obtained and the conversation was audio recorded. The FGD was conducted by the PhD researcher. The field guide (Appendix-9) focused mainly on the LHW's acceptability, practicality and demand for the maternal psychosocial wellbeing approach.

During the focus group discussion LHWs openly discussed their views and quoted examples from their field experiences in implementing the intervention. Active participation from all the LHWs was ensured.

### 11.3.10. In- Depth Interviews

Qualitative feedback using in-depth interviews was obtained from mothers (n=23) and LHWs (n=13) about the usefulness of the intervention. The questionnaires are attached (Appendix 10). The acceptability to the programme managers of the intervention was assessed through IDIs. The sample size was determined by data saturation.

After informed consent, interviews were carried out by women researchers in the home, 8 weeks post-training. These were digitally-recorded and transcribed verbatim. In addition, detailed field-notes were taken by a second researcher. Interviews with LHWs were carried out at their health houses (a designated room at the LHW's house where she sees her clients to provide health education etc.). The interview guides included questions from the family about their perceptions about the intervention by the LHW, its appropriateness, and any parts which they did not appreciate. The questions for the LHWs explored the practicality, challenges in implementation and views about the intervention's impact.

### 11.3.11. Structured Observations

The 13 LHWs were observed by the research team on 4 occasions each, when they were conducting home visits. A structured checklist (Appendix-9) was used to evaluate the level of fidelity in delivering the intervention. The checklist included observation of how LHW communicated and demonstrated listening skills, problem solving, how successful were they in engaging the family and solving problems with their help. The checklist also included items for correct use of pictures and behavioural activation. The checklist covered all the key areas of the 5 pillars approach.

Consent was obtained from the LHWs prior to the observations. The checklist was also pilot-tested and appropriate revisions were made.

Prior to using the checklist, inter-rater reliability was tested by asking two researchers to rate the same observations on 10 different occasions. There was over 80% agreement on the ratings between the two reviewers.

### 11.3.12. Audio recording and verbatim note taking

The focus group discussion and the in-depth interviews were audio recorded by the assistant and verbatim note taking was also done. The same procedure was adopted as described in the development phase.

The observations were carried out, without interrupting or prompting the health worker. The LHWs were told that the results of individual performances would be kept anonymous and confidential.

### 11.3.13. Ethical Issues

Local ethical approval was obtained from Health Services Academy Ethics Review Board, Islamabad, and institutional approval was obtained from the University of Liverpool. Informed written consent describing the purpose of the feasibility study / thumb impressions was obtained prior to the interviews. If the mother (or her child) was found to be too unwell to take the interview, it was postponed and the LHW accompanied them to the nearest basic health unit for medical care.

### 11.3.14.    Data management

The notes and audio recordings were handed over to the data manager at the Human Development Research Foundation office in Islamabad on the day of the interviews. The audio files were transferred into a password protected computer and the files were labelled. The raw data and the digital files were kept under lock and key.

### 11.4.    Analysis

The interviews and focus group discussion were analyzed in the local language using thematic analysis. Analysing in the original language strengthens the process of generation of themes, which were later translated in English. The following steps were followed.

### 11.4.1.    Transcription

The interviews and the focus group discussion FGD were transcribed on the same day. The Focus Group Discussion and half of the interviews were transcribed by the PhD student. The audio recording was heard and data added to the verbatim notes wherever any information was missing. The data were transcribed in the local language (Urdu), in which the data had been collected. The transcribed notes were photocopied and the originals were kept under lock and key.

### 11.4.2.    Familiarization with the data

The transcriptions were read and reread to get a deeper understanding of the data. While reading, preliminary codes were generated and the relevant data was underlined.

### 11.4.3. Coding the data

The data was then coded, and the raw data was pasted on display boards under various codes. The codes were adjusted when analyzing the data.

### 11.4.4. Identification of themes and reflection sessions

The initial themes were generated after careful discussion during the reflective sessions with the team of researchers involved in data collection. The pasted raw data helped in staying nearer to the original quotes. The final themes were developed after all of the interviews were analyzed.

### 11.4.5. Triangulation

The process of triangulation has been described in section Method of analysis 7.5.1.2. The data from focus group discussion, interviews and observations was triangulated to produce final themes.

### 11.4.6. Analysis of the structured observations

Structured observations provide direct access to the phenomenon under study and are complimentary to the other methods. However the drawbacks are the social desirability, which means that people will act differently when observed. Another drawback was practicality of conducting observations. It provides a permanent record that can be compared. The structured observation checklists were analysed by entering the data in STATA and percentages were calculated for each outcome measured. The data was also discussed and comments written down.

### 11.5. Summary

The methodology used for the feasibility study utilized mixed-methods to obtain a holistic picture on various feasibility parameters. In depth interviews, where individual LHWs could express herself freely were coupled with a focus group discussion of all LHWs so that more suggestions and ideas could be generated. The

fidelity of the intervention was tested through observations in real-life settings at the households. The data were analysed manually in the local language to avoid the loss of any subtle detail in translation, and triangulated to extract the best understanding of the parameters being explored.

**12.Chapter Twelve: Feasibility study - Results**

## 12.1.    Introduction

This section discusses the findings of the qualitative feasibility study. The selected parameters were analyzed from multiple perspectives using the qualitative data from different sources and methodological triangulation.

## 12.2.    Study participants

A total of 13 LHWs and 23 women were included in the study, based on data saturation. The demographics of the LHWs are given  in Table 36.

TABLE 36: DEMOGRAPHICS OF PARTICIPATING LADY HEALTH WORKERS

| S. No | Characteristic | values |
|-------|----------------|--------|
| 1 | Mean age ( SD) | 32 yrs (1.8) |
| 2 | Mean years of education (SD) | 11 yrs (2.1) |
| 3 | Marital status in percent | |
| | Married | 85% |
| | Unmarried | 15% |

| Method | Participants | Number |
|---|---|---|
| FGD | 13LHWs | 1 |
| IDIs | LHWs | 13 |
| | Pregnant Women | 10 |
| | Mothers of children <2 yrs | 13 |
| | Lady Health Supervisor | 1 |
| | LHW program manager | 1 |
| Observations | 13LHWs | 52 |

## 12.3.      Response rate

All LHWs who were approached agreed to take part in the focus group discussion. In all, 23 out of the 26 women participants who were approached agreed to be interviewed. There were 2 households, where the respondents were not home at the time of the visit. One woman, a mother of 3, educated and belonging to poor socioeconomic status refused to take part in the study as she was too busy with her household chores. None of the 23 women interviewed refused the audio recording.

## 12.4.      Demographics of the women interviewed

The main demographic features of the women interviewed are given below in Table 38. There is a representation of each socio economic group, educational category and family structure.

| Demographic Variables | Statistics | Values |
|---|---|---|
| Age in years | N | 23 |
| | Mean | 28.2 |
| | Median | 28 |
| | Standard deviation | 4.95 |
| Education | Educated | 10 (43%) |
| | Uneducated | 13 (57%) |
| Number of Children | Mean | 3 |
| Family structure | Joint | 16 (70%) |
| | Nuclear | 7 (30%) |
| Socio-economic status | Very poor | 3 (13%) |
| | Poor | 3 (13%) |
| | Middle Class | 11(48%) |
| | Rich | 3 (13%) |
| | Very Rich | 3(13%) |
| Monthly Income | Mean | Rs.10,340 |
| | Range | Rs.2000-80,000 |

### 12.5. Findings of the qualitative research on feasibility

The findings are discussed according to the 4 parameters discussed above.

### 12.5.1. Acceptability

The sub-themes related to this parameter, along with illustrative quotes are summarized in Table 39.

**TABLE 39: ACCEPTABILITY AS A THEME OF FEASIBILITY**

| Acceptability | | | |
|---|---|---|---|
| **Sub-theme** | **Women respondents** | **Lady health worker respondents** | **Inference** |
| Intention to use | | *"We will definitely use it in our work"(FGD)* | LHWs intend to use intervention |
| Perceived appropriateness | *"This program will help us because if mother is healthy and happy, she can do everything for her child"(IDI)*<br><br>*" My mother in law was saying that this program will help make our children bright" (IDI)* | *"People listen when it is about their children. The good thing is this is helping women too"( IDI)*<br><br>*"It will be difficult to talk to husbands, they might not talk to us" (FGD)* | Majority found the intervention to be appropriate.<br><br>Some raised concerns about engaging with husbands |
| Fits into culture | *" When I looked at the picture, I thought this was about my life" (IDI)* | *" This is just like our work"(FGD)*<br><br>*" I think, I can easily do this with my (routine) visit" (IDI)* | Intervention fits into LHW's routine work. |
| Intervention components | *"After baji told my mother in law that rest is important for the baby, she lets me rest"(IDI)*<br><br>*" Husband is mostly not home when LHW comes to visit"(IDI)* | *"The idea of a support person is excellent"(FGD)*<br><br>*"When I told the mother in law that stress will affect the child she brought her daughter in law back home ( from her mother's place)"(IDI)*<br><br>*" Pictures were very useful* | All the components were found to be useful, by majority of LHWs and women. |

| | | | |
|---|---|---|---|
| | *" My husband looked at the pictures and said that I should follow the advice"(IDI)*<br><br>*" I feel happy after talking to LHW "(IDI)*<br><br>*"I like when LHW praises me if I do as she tells" (IDI)* | *for conveying messages specially for uneducated"(IDI)*<br><br>*"Now I try to listen to women first"(IDI)*<br><br>*"I try to give solutions to their problems but sometimes I ask how to solve the problem from supervisor in supervision meeting"(IDI)* | |

The acceptability of the 5 Pillars approach to maternal psychosocial wellbeing, integrated into the early child intervention, was evaluated for its acceptability by the LHWs, and the women receiving the intervention. The acceptability was measured on commonly employed parameters (155) such as appropriateness of the intervention, its fit, perceived effectiveness, perceived consequences and intention or likelihood of using the intervention in routine work.

### 12.5.1.1.    *The intention to use*

The intention to use an intervention can be a useful indicator of feasibility and has been used in many studies (151). We explored if the LHWs expressed an intention to use the 5 Pillars approach, and the reasons for using, or not using it, in their day-to-day work. Generally, most of the LHWs expressed an interest in the intervention and intended to use it.  The factors motivating this would be important to understand and were explored further.

#### Motivation for the intention to use

The novelty of the approach, and the fact that it addressed issues they faced everyday with their clients, but did not have the skills to address, was a key motivator in the intention to use it.

*"There are some new things that I learnt from this training; for example talking to the mother in law, and listening to women's problems first and making friends with them. I am keen to see if it will work.....we will see"….. (FGD-LHW)*

The above quote suggests the LHWs may have had problems engaging with some mothers or her family members, and the concept of not lecturing but listening to their problems after developing a trusting relationship was a new skill for them.

It also emerged that the LHWs were motivated by the training given to them. The trainers employed many of the 5 Pillars skills (e.g., empathic listening, gently challenging existing beliefs, problem solving) to the LHWs problems in carrying out their work. This learning through 'social modelling', i.e., learning from the behaviour of the trainers, and appreciating the positive effect of the approach on their own selves, helped them imbibe it further.

*"They (trainers) were friendly and treated us as equals; we will try to be like them" (FGD-LHW)*

LHWs could recognize and appreciate the specific 5 Pillars skills used by the trainers who were teaching this approach to them. The quote below indicates the desire to use the approach in their routine work and be like the trainers.

*"They (trainers)….. were very appreciative, encouraging and never cut us short. We have learnt from them and saw in them that we need to listen to mothers and families to try and understand the cause of their problems" (FGD-LHW)*

### 12.5.1.2.   *Perceived appropriateness of the approach*

Perception about the appropriateness of an intervention is important for the success of any new intervention. LHWs were asked about perceived appropriateness as well as potential positive or negative effects of the intervention on the family / community.

**Family support is perceived to be helpful and useful for families**

Majority of the LHW participants perceived the intervention to be simple and helpful for the families. The engagement of the whole family, and the increase in the family's support to the mother as a consequence, was considered to be very useful for pregnant women and mothers of young children.

*"The best thing… that will be very useful for women is the family support. This will please the women and give them some relief"*

*(FGD-LHW)*

It is interesting to note here that LHWs had started to think about not only about the physical health, but also the psychosocial wellbeing of the mothers as demonstrated in the above quote – 'please the women' and 'give them some relief'. There were many similar quotes, indicating that the LHWs were being sensitized to women's psychosocial wellbeing. Since previous research on LHWs has highlighted the need for communication skills (148), the programme managers also endorsed the approach.

*"I think if this approach can improve the communication of LHWs, it will be very useful for the programme"*

*(IDI- LHW Programme manager)*

**Engaging the husbands**

LHWs were not used to engaging families, especially the husbands, in child rearing or for maternal support. While all agreed this would be important, especially in supporting the mother to adopt key behaviours between sessions, many found engaging them particularly challenging. In this conservative society, outside women talking to the men is looked down upon. Many also felt that for the same reasons, many husbands would also find it difficult to communicate with them. Also, many men worked in the nearby cities and town and were simply not available at home.

*"Before, we never talked to the husbands. We just used to ask the wives to convey the message to their husbands, but we know now how important they are in our work and we need to engage them" (FGD-LHW)*

However, the challenges were also strongly felt.

*"Some men don't want to talk to us. Some may like it others may not" (FGD -LHW)*

*"It will be particularly difficult to talk to the first time fathers as they will be shy" (FGD -LHW)*

It also emerged that attitudes towards the LHWs talking to men were changing gradually. Some of the programmes that the LHWs delivered, such as the Tuberculosis programme, required them to engage with the men, and their initial reluctance was changing. However, there was a feeling that the change in the men's attitude was relatively harder to change, but that this was an opportunity to do so.

### Perceived appropriateness of the child-focused approach

In-depth interviews with the LHWs 8-weeks post-training revealed that the child-focused approach to engage families in supporting the mother was readily accepted by the families.

*"They (family) are happy to support the mother as now they know that this programme is about making the child healthy and intelligent"*

*(IDI-LHW4-281013; 3:18)*

In all societies, the new-born child is generally the focus of a family and the aspirations of the whole family revolve around the health and optimal development of the child. LHWs expressed in the interviews that majority of the families had accepted the intervention easily as it was focused on the joint priority of child health.

*"Mothers like this very much as it is focused on her child"*

*(IDI-LHW1-81013; 2:20)*

**The idea of maternal psychosocial wellbeing resonates strongly with the women**

Since LHWs are women and mothers themselves, they could relate easily to the idea of maternal psychosocial wellbeing. The intention to use the approach was evident from the fact that the LHWs were not only sensitized to the concept of maternal psychosocial wellbeing, but they supported the idea strongly.

*"We are mothers as well and understand how important our mental wellbeing is for our children" (FGD)*

While they could easily relate to the importance of psychosocial wellbeing, they had not felt it was their role to try and improve it, and the implications that could have on her other roles.

*"Earlier, we did not know that though a mother has everything but if she is not satisfied mentally she won't be able to take care of her child"*

*(FGD-LHW)*

LHWs began to connect psychosocial wellbeing to childcare, and the role of greater family support to achieve this objective.

*"Mother will feel happy if she is given attention and importance by the husband and mother in law"*

*(FGD-LHW)*

In a very similar way to the LHWs, the mothers also related to the idea of psychosocial wellbeing and through the LHWs, the raised awareness of how these effects their functioning was helpful in seeking appropriate support and care.

*"I understand that it (programme) is for child's health and intelligence. It's about mother's wellbeing if she will be happy her child will be bright and happy" (IDIPM-M-U-4122012)*

**New approach is synergistic to LHWs routine work**

The 5 pillars approach was developed to be integrated into the routine work of the LHWs, and LHWs recognized and acknowledged this fact. The main focus of LHWs work is maternal and child health. The 5 Pillars approach helps LHW to build a relationship with the whole family which facilitates her other work..

*"The new work is close to our work. We are enjoying it"*

*(IDI-LHW11-13913; 5:10)*

*"Families now listen to us more, as we made friends with them"*

*((IDI-LHW10-13913; 6:9)*

**Improves quality of routine supervision**

The Lady Health Supervisor (LHS) attended the trainings and the supervision sessions. She acknowledged that the 5 pillars approach could help her in her routine supervision with the LHWs. The LHS pointed out that some of the skills she had observed during supervision, such as empathic listening and problem solving, when applied to the supervision, had a positive impact on the LHWs. Thus, 'social modelling' was also evident at this level.

*"5 Pillars approach is beneficial as I have learnt how to supervise, using empathic listening, praising and giving tasks in steps as I have seen the 5 pillars supervisors do"*

(IDI-LHS-61213)

Keeping LHWs motivated to continue working with difficult families was a challenge. Traditionally, her role is often not appreciated by her superiors and this leads to de-motivation. The new 'facilitation' approach to supervision could assist the supervisors as well as LHWs maintain motivation and contribute to job satisfaction.

*"The thing I found best about this supervision is encouragement of the workers and this is my duty to keep the workers motivated."*

(IDI-LHS-61213)

### 12.5.1.4. *Acceptability of individual 5 Pillars components*

The 5 Pillars for maternal psychosocial wellbeing are individual strategies that comprise this intervention, and the details of each pillar are given in earlier chapters. In the following section, we describe how each individual pillar was perceived by the stakeholders, and the issues that may have arisen in its practice.

#### Pillar 1: Family Engagement

See, page 158 for a description of this strategy.

As described above, the emphasis on family engagement helped utilizing the family's strengths to support mothers and help them adopt the necessary key behaviours.

##### *LHW visits - perceived differently*

The LHWs also found family engagement very useful. LHWs though the families were more receptive as a result.

*"Our visits are perceived differently now because we involve the whole family, especially the mother-in-law and husband"*

*(IDI-LHW-3-5212; 3:6)*

##### *Acceptance of LHW by the family*

In rural Pakistan, the grandmother/ mother-in-law is a powerful decision maker in the house, and this was also evident from the development phase study. Engagement with this key decision-maker was not emphasized in the LHWs' prior training. Their

focus was the mother and child, and this exclusivity sometimes led to problems of trust with the wider family.

*"The grandmother was always suspicious of me when I talked to her daughter in law alone. Now she feels important and helps her too"*

*(IDI-LHW 2-31213; 2:5)*

The LHWs' supervisor, who routinely supervises the household visits of the LHWs, also reported this shift in approach in relation to engagement of the wider family.

*"After training LHWs are engaging the families, now they are ensuring the participation of mother in law and husband"*

*(IDI-LHS7-61213; 4:11)*

### Engaging with difficult families

The LHWs reported that in their previous work, many families would be resistant to the messages of the programme, especially unpopular ones such as family planning. This often led to conflict, and even further resistance to their work. By using the shared agenda of optimal child development as the entry-point, and gently challenging existing practices through the use of pictures, made the task of engagement relatively easier.

*"The difficult ones have now become easier for me… I used to think that they won't listen as they were always suspicious about my work, but I felt good after engaging them and I think they felt good too"*

*(IDI-LHW5-31213; 7:8)*

Mothers also welcomed the child-focused approach, and understood how their well-being was connected to that of the baby. This allowed them to think of their own needs without feeling they were being 'selfish'.

*"Yes, I look after my diet and rest now because this is important to the development of my child"*

*(IDI-M01-M-E-712213; 5: 13)*

### Selection of a support person

Selection of a key support person from within the family, who could assist with ensuring the mother's diet, rest, antenatal visits during pregnancy, and who could support early initiation and continuation of breast feeding and child care was found to be a useful idea. Women found this particular approach very helpful.

*"I am pregnant and my LHW asked my family to select a person who can support me. My sister-in-law was nominated because she is educated and experienced, and she has begun to give me special attention..."*

*(IDI-PM-E-41213; 5:12)*

### Engaging with husbands

As described earlier, the majority of the LHWs and women respondents reported that since husbands were usually away for work during the daytime, and at times due to cultural reasons, it was difficult for the LHWs to talk to them. Thus, the intervention, despite its emphasis on engaging fathers had limited success due to the above barriers.

*"My husband comes late at night so LHW cannot talk to him"*

*(IDI-PM3-E-51213; 4:23)*

*"Husbands are usually at work at the time of our visit, so when we need to talk to them, we don't find them at home"*

*(IDI-LHW1-31213; 2:9)*

*"My husband was sitting next to me during her visit but LHW did not talk to him"*

*(IDI-M01-E-41213; 2:15)*

### Family support for sharing workload and maternal rest

Poor socioeconomic conditions, too many young children within the household to look after, and multiple roles for all the women in the household were other barriers occasionally faced by the LHWs in trying to bolster family support for the mother.

*"LHW visits frequently and asks my family to give me the time for rest but it is difficult due to the workload even then I try to take rest at least an hour a day"*

*(IDI-PM-U-41213)*

### Pillar 2: Empathic Listening

### LHWs previous didactic way of delivering messages

During the focus group discussions with LHWs, it came across strongly that the previously preferred method of delivering key health messages was in the form of a didactic lecture. This was also established during the qualitative study section, for example, telling women to eat healthy foods in pregnancy, but not trying to understand the reasons for a poor diet. The strategy of listening to the women's problems first before offering advice was new to them.

*"We were accustomed to the "telling" instead of listening to women, but after this training we have learnt to first listen to the problems of a mother and family, and then offer advice..."*

*(FGD –LHWs)*

### Improvement in listening skills

There was a visible change in the practice of the LHWs in how they approached the mothers. This was observed by their supervisor, who routinely observed the household visits of all the LHWs in her area.

*"They (LHW) now listen to them (women) sympathetically, pay attention to what is shared and where necessary ask the questions and encourage the families"(IDI-LHS-61213)*

### Mothers feel relaxed after talking to the LHW

The impact of this changed practice on the mothers was evident from the feedback received from the majority of the mothers interviewed. They reported feeling relaxed and comfortable sharing their problems with the LHWs.

*"It feels good to talk to her; she tells me stuff, but also listens to me and asks me how I am doing."*

*(IDI-M12-311213; 3:22)*

*"She listens to me attentively and I feel relaxed after talking to her" (IDIPM10-M-E-51213; 6:4)*

### Pillar 3: Guided Discovery using pictures

See , page 159 for a description of this strategy.

### Pictures useful, especially for the uneducated

The use of pictures proved to be a powerful tool in changing behaviours. This worked particularly well for the non-literate mothers as it was easier for them to understand the message visually than verbally. This is consistent with previous studies showing the usefulness of pictures for uneducated (156). The majority of the mothers found the pictures useful in understanding the key message, but also as a reminder of the message between sessions.

*"By looking at the pictures, it becomes easier to understand and remember what we are supposed to do"*

*(IDI-M03-U-7122013; 5:9)*

The LHWs also felt that the pictures were useful job-aids and made the task of delivering their key messages more interesting. They found the mothers engaged much more with the pictures and were able to identify the behaviours that needed to be adopted or changed.

*"As the counselling cards sometimes show both positive and negative aspects of various behaviours, a mother therefore will see the impact of adopting a particular behaviour shown in the picture"*

*(FGD-LHW)*

*"For me, I enjoy; conducting play activity, and starting the visit by showing pictures and by asking people's perception about pictures. This is what I like the most"*

*(IDI-LHW5-280213:4; 8)*

It was also felt that other members of the households were also positively influenced by the messages given through pictures.

*"A grandfather when saw the picture about the junk food, has stopped bringing toffees for the kids, instead he brings fruit"*

*(IDILHW8-31213; 4:29)*

### *Difficult messages*

Some maternal health messages were difficult for the LHWs to deliver, because of the deeply held cultural or religious beliefs that were contrary to the message. For example, the messages about birth spacing, was particularly problematic. However, gently challenging these practices through the use of the pictures was helpful in at least initiating a discussion on these sensitive issues.

*"It is easier to communicate our messages with some families because we can talk about the pictures and convey our message through the pictures without offending anyone..."*

*(IDI – LHW)*

*"I like the picture about birth spacing, it conveys the message indirectly. The families who never wanted to talk about birth spacing also looked at the picture and discussed it without feeling offended"*

*(IDILHW2-291213; 3:10)*

**Difficulties in using pictures**

Feedback from some of the households and the LHS revealed that occasionally the use of the pictorial counselling cards for guided discovery was not practiced. This was primarily because the LHWs were not used to carrying job-aids with them, and the practice of just turning up and having a discussion with the mothers was quite well-entrenched. It was felt that with time this would change, especially when the utility of these counselling cards became evident.

*"She never bring any books with her"*

*(IDI-PM-M-E-41213; 8:14)*

*"They did not have counselling cards"*

*(IDI-LHS-61213)*

*"I try to remember to take the counselling cards with me. They help me remember what to talk about and the women seem to like them. Makes my job easier"*

*(IDI-LHW2-3113; 4:2)*

**Pillar 4: Behavioural Activation**

See, page 160 for a description of this strategy.

***Breaking down tasks into small components***

The majority of the women found this strategy to be useful, and helped them deal with their many tasks more effectively, and gave them a sense of control over their lives.

*"I never went for a check-up because I was afraid....my LHW explained what would happen step by step, and I went and it was OK."*

*(IDI-PM-91213; 3:7)*

This strategy was also useful in helping the mothers to structure play activities with the child as part of the early development work. The play activities would start with very simple interaction, leading to scaffolding the activity, stepwise which means taking the child to the next level.

*"First she asked me to try to play with my daughter with glasses and cups. I stacked one on top of other like she told me, Next time LHW asked me to count the cups, like 123. My daughter learnt these and stacking as well"*

*(IDIM14-M-E-280213:10; 9)*

### Positive feedback

Praise and appreciation is an important component of this strategy. The majority of the LHWs felt they did not use this enough in their previous roles, and they could see the benefits of it once they started using it.

*"   It was a struggle to get her to take her iron tablets and I stopped bothering. Then, I asked her to take them as they would make her baby strong and clever. I asked her sister to note every time she took a tablet, and I told her how well she was doing for her baby. She felt good about it....."*

*(IDI-LHW8-91013; 4:7)*

### Pillar 5: Problem solving

### LHW - using problem solving

Previously LHWs would just deliver the health message and would not discuss problems. With the new approach they started to discuss and provide solutions for women's problems. This was clear from the responses of women during interviews.

*I share such problems with her and she (LHW) solves"*

*(IDIPM- U-41213; 2:10)*

*"She is very supportive...she counsels me about my problems and gives me good suggestions"*

*(IDIPM- E-41213; 2:12)*

**Monthly supervisions helped improve problem solving**

Since LHW were not used to problem solving, they sometimes would not have an answer to a particular problem faced by women or their families. The process of supervision, where peer learning and sharing experiences was encouraged, helped her in getting better at it.

*"During supervisions, we discuss where we are stuck with some mothers, and get useful suggestions from the others, which we can take back to the mothers...We also find out we are not the only ones in such situations."*

*(IDI-LHW-101113; 3:10)*

**Summary**

A key parameter of feasibility of any intervention is the extent to which is acceptable to the recipients as well as the delivery agents. The introduction of a new intervention inevitably means change from the way things were being done previously. If there is too much resistance to this change, this would mean there are issues with acceptability, and the intervention is not feasible for this reason. In this case, the intervention would need to be revised. The triangulated findings from the qualitative data indicate that there was intention to use the intervention by the LHWs, and that the intervention was accepted by the mothers and their family members. The new approach fitted well into the LHWs routine work, and this contributed to their motivation to continue to deliver it. The health system also had a favourable view about the intervention. The approach led to improvements in the overall supervisory system of the LHWs, indicating that the effects were trickling down to the systems level. Individual strategies comprising the intervention were also found to be useful. Engaging the husbands was the most problematic aspect of the intervention.

**12.5.2.** **Demand**

Demand, the second parameter to evaluate feasibility for the intervention, can be assessed by gathering data on estimated use or by actually documenting the use of selected intervention activities in a defined population. The collection of quantitative data to document the actual use was beyond the scope of this study. However the demand could be assessed by experiences of the community and LHWs related to specific areas of the intervention.

TABLE 40: DEMAND OF INTERVENTION

<table>
<tr><td colspan="4">Demand</td></tr>
<tr><th>Sub-theme</th><th>Women respondents</th><th>Lady health worker respondents</th><th>Inference</th></tr>
<tr>
<td>Actual use</td>
<td>*"The different thing is that she (LHW) told me to talk to my child. I love it"(IDI-mother of a 3 m old)*<br><br>*" She asks my mother and sister in law to sit with us during her visit" (IDI with a pregnant mother)*<br><br>*"She spends more time with us now"(IDI)*</td>
<td>*" I thought that family did not like me, but when I involved them in the visit, they have become friends with me" (IDI)*</td>
<td>Evidence of take-up of strategies by the family.<br><br>New strategies discussed in supervision by LHWs<br><br>LHWs are spending more time with the household</td>
</tr>
<tr>
<td>Perceived demand</td>
<td>*"My friend saw the calendar and said that she wants it too, as she will show it to her mother in law, so that she will let her take rest"(IDI)*</td>
<td>*"People now know about it. a mother visiting from the other village asked me to give these messages to them as well" (IDI)*</td>
<td>Community demand is perceived to be there.</td>
</tr>
</table>

### 12.5.3. Actual Use

*New strategies discussed in supervision by LHWs*

During the in-depth interviews and the focus group discussions many LHWs shared their experiences and brought out issues related to the intervention, which indirectly confirmed that the intervention was being practiced by the LHWs in the field. In the following example an LHW discussed using the new strategies (selection of a supportive family member, using the health calendar) new additions to the health workers' toolkit.

*"The problem arises when the mother is uneducated. I have found a solution; I asked the nand (sister-in-law) who is educated to guide the mother. And I have asked the sister-in-law to explain things to her and mark things on the health calendar"*

*(IDI-LHW5-31213; 1:11)*

**Evidence of take-up of strategies by the family**

The households shared their experiences of using the intervention components, which included soliciting family support, using the health calendar, and introducing play activities early. In the direct observations, there was evidence that the key messages, health aids and activities suggested were being followed.

*"She told me and I also read in the card that it is good to touch the hands of the child and to look into his eyes while feeding".*

*(IDI-M06-M-E-51213; 4:8)*

In the above example, the mother describes uptake of a key message related to responsive feeding and refers to the pictures used by the LHW to help her understand the behaviour.

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### *Increased duration of home visits*

The 5 Pillars strategies such as empathic listening and problem solving require time to be delivered. This initial investment and the use of the approach can be indirectly assessed gauging change in the duration of a typical visit. The majority of the households, LHWs and their supervisor agreed that LHWs were now spending more time with the families.

*"LHWs are now spending more time with families, earlier they used to have short visits, but now they (LHWs) give more time like carrying out detailed discussions and getting involved"*

*(IDI-LHS-61213)*


### 12.5.3.1.    *Perceived demand by the community*

The qualitative data indicated that the community was receptive to the intervention and there is a demand for it.

The concept of maternal psychosocial wellbeing was new to the community, and it would appear that they imbibed this concept and were able to link it to the child's development. The fact that the intervention was impacting on both the mother and the child was a strong stimulus for demand.

*"I think all families should know that if mother is content and happy, the child will be healthy and intelligent"*

*(IDIPM-M-E-41213; 6:8)*

There was a demand for the job aids that were used to strengthen the maternal wellbeing messages.

*"I have given Health calendars to mothers. And women, who have not received but have seen the calendars, like the messages and have asked if they could have them too"*

*(IDI-LHW2-31213; 7:8)*

**Summary**

The demand of a new intervention can be established by the actual use of an intervention. The feasibility study has established the actual use of new intervention. This is confirmed by the fact that LHWs discussed the new strategies and the related issues during the supervision meetings. Moreover, there was evidence of intervention uptake by the families, and there was a perceived demand as well. An increase in the visit duration of LHWs, particularly pointed towards the use of the intervention strategy.

## 12.5.4.    Implementation

The strength of implementation is a key parameter of feasibility. Even if there is acceptability of the intervention and demand for it, it has to be implemented with sufficient strength so that an adequate dosage of the treatment reaches the end-point recipients – in this case the mothers. Four sub-themes emerged from this parameter, and are summarized in Table 41.

**TABLE 41: IMPLEMENTATION OF THE INTERVENTION**

| Implementation | | | |
|---|---|---|---|
| **Sub-theme** | **Women respondents** | **Lady health worker Respondents** | **Inference** |
| Degree of execution/ Fidelity | Assessed by structured observations of LHW performance in the field | | Majorities have learnt the skills and execute these successfully in the community. |
| Success or failure of execution | *"I have time now to play with my son. I feel very happy now" (IDI)* | *"I could not talk to their husbands, they are seldom home" ( IDI)* | Change in behaviours of the community depicts success of execution though less with males |
| Resources needed | *"LHWs spends more time with me now" (IDI)* | *"Our visit takes more time now. Supervision meeting is also longer"* | LHWs need more time for visits.<br><br>Supervisions have more to discuss and take longer. |
| Factors affecting implementation | | *"We have too much work"(FGD)*<br><br>*" We don't get salaries in time"(FGD)*<br><br>*" Our seniors never appreciate our work"( FGD)* | LHWs are over worked, not appreciated and salary disbursement is irregular. |

### 12.5.5.    *Degree of execution*

The fidelity of the intervention delivery was assessed through direct observations of the LHW delivering a session to a mother. The extent to which the LHW was implementing the strategies was recorded by an independent observer on a structured checklist. Four observations were performed for each LHW trained, so as to increase the validity of the findings. The results of the structured observations are summarized in Table 42.

**TABLE 42: OBSERVATIONS OF LHWS DELIVERING 5 PILLARS IN THE COMMUNITY**

| Observations of LHWs delivering 5 pillars in the community    n=52 | |
|---|---|
| **5 pillars Component / Technique** | **Used routinely** |
| 1. **Family support** | |
| Involves key family members in the discussions | 22/35 (63%) |
| Encourages family members to support mother and infant | 20/35 (57%) |
| 2. **Empathic listening** | |
| Greets the mothers | 51/52 (98%) |
| LHW has a friendly exchange with the mother (e.g. makes eye contact. smiles, friendly tone) | 50/52 (96%) |
| Asks how the mother and/ child is | 50/52 (96%) |
| Shows he/she is listening (nods, eye contact, acknowledging sounds) | 48/52 (92%) |
| 3. **Guided discovery** | |
| Shows the picture and asks the family what the picture shows | 44/51 (86%) |
| Explains the picture and discusses the positive behaviour | 39/50 (76%) |
| 4. **Behavioural activation** | |
| Uses positive words and gestures when the mother says something right | 30/51 (58%) |

| | |
|---|---|
| Counsels in steps rather than only giving advice | 28/50 (56%) |
| **5. Problem solving** | |
| Asks about problems the family may have in putting the advice into practice | 26/50 (52%) |
| Empathizes with the problems | 24/43 (58%) |
| Discusses ways of overcoming the problems | 26/40 (70%) |
| Discusses getting support from the wider family to overcome problems | 20/38(57%) |

It is evident from the observations that although the LHWs had had relatively little time to practice and embed the approach in their day-to-day work, they used a range of these strategies in their day-to-day work. Some of the strategies such as behavioural activation and problem solving require more experience to implement routinely into practice, and this is reflected in the table above. Nevertheless, all strategies were observed to be practiced in the majority of the sessions observed.

The fact that the LHWs were aware of being observed during the visits, they may have altered their behaviour, however the results do show that majority have learnt the skills and can execute these successfully in the community. Some of the skills were still deficient specifically problem solving and more time is needed to master these skills that can be achieved through supervision.

### 12.5.5.1. *Success or failure of execution*

The success of execution of an intervention can be assessed by getting an idea about the uptake or penetration in the target population, which has already been discussed in section on demand. Behaviours of people change when they become concerned about the need to change (157), are convinced that the change is in their best interest, organize a plan of action and take the necessary actions. Women were shown pictures, where they were encouraged to make the process of feeding more interesting by using colourful utensils etc. In the following quote the mother admits to using this technique which corroborates the successful use of behaviour change through pictures.

*"There was a colourful spoon and colourful plate in the picture that I liked very much. So I brought a colourful plate and spoon for my child as well. She becomes very happy looking at those colours while eating"*

*(IDIM09-P-E-280213; 19:3)*

### 12.5.5.2. *Amount, type of resources needed to implement*

The larger issues of resource allocation for health and strengthening of systems to deal with shortage of human resources and increased workloads are beyond the scope of this exploration. Problems at the level of the family and LHW are discussed.

**LHW need more time for their visits**

In our development research we found that the average duration of an LHW's visit was 10 minutes. With the new approach, they had to engage the family, listen to their problems of women and provide solutions. This had a bearing on the duration of their visits. However, there was not too much complaint about this as LHWs and their supervisor felt this was an investment and would yield positive results in terms of improved health outcomes.

*"Yes there is increase in the duration of visits, earlier I used to spend fifteen minutes, now it takes thirty minutes"*

*(IDI-LHW5- 31213; 3:5)*

*"She now spends half an hour usually"*

*(IDIM06-U- 71213; 5:8)*

*"Yes it affected our routine work because now we have to give more time to the families, but if the mothers and children are doing well, we feel satisfied"*

*(IDI-LHW5-280213:2; 8)*

**Supervision visits take longer and there is more to discuss**

The previous supervision meetings of the LHWs largely involved submitting the paper work related to their various field duties. The new approach added about an extra hour of supervision, in which LHWs shared their experiences and discussed problem solving from the peers and the researchers. While, this change in culture

was perceived to be desirable by the majority of the LHWs; it was unclear if this would be a sustained change.

*"The thing I found best about the new supervision is encouragement of the workers, but it takes more of my time because I have to finish my routine work as well"*

*(IDI-LHS-61213)*

### 12.5.5.3. *Factors affecting implementation ease or difficulty*

#### Ownership and Motivation of the LHWs

The ownership and motivation of the LHWs is the key to the success of implementation. Since they are the delivery agent in the community, and have to visit a certain number of households daily, their continued motivation is required. The motivation of LHW comes from various sources, but one of the key motivator described by the majority of the LHWs was being able to bring about a positive change, which was appreciated in the community.

*"My niece is pregnant and when I told her family about your training, you will not believe that her sister-in-law and her husband have started looking after my niece. They do not let her do household chores, her health is better and she is mentally satisfied"*

*(IDI-LHW-9-21013:16; 3)*

#### Extra workload of other programs-an implementation challenge

The LHWs are the largest human resource for primary health care in the community, and although their main work is related to maternal and child health, other primary care community programmes, for example, polio and dengue etc., also add to their work. This sometimes compromised their ability to attend to their main work, including the psychosocial work.

*"I think that our actual work has been side lined and other programs are more in focus like our family planning programme is affected by polio and dengue campaigns every month"*

*(IDI-LHS-61213; 2:7)*

### Poor governance is a de-motivating factor

Poor governance and weak administration was frequently a source of stress for the LHWs and a major source of de-motivation. For example, their salaries were often not paid in time, making them lose interest in their work.

*"We do not get salaries for months. This stresses us a lot"*

*(IDI-LHW5- 31213; 3:5)*

### Summary

Intervention was successfully implemented. The fidelity of the intervention tested by direct observations was satisfactory. The extra workload, governance issues and lack of motivation are the key challenges to implementation that were identified.

## 12.5.6.    Integration

**TABLE 43: INTEGRATION OF INTERVENTION**

| Integration | | | |
|---|---|---|---|
| **Sub-theme** | **Women respondents** | **Lady health worker respondents** | **Inference** |
| Perceived fit with infrastructure | | *"This does not require separate visits, rather this is helping us do our own visits" (IDI)*<br><br>*"We have regular monthly meetings but these are now more interesting and we learn also"(IDI)* | The integration with existing activities puts no pressure on infrastructure. |
| Perceived sustainability | *"We want this program to continue. This is good for our village"(IDI)* | *" We do not get salaries in time"(FGD)*<br><br>*"Supervision is important. We learn so much"(IDI)*<br><br>*" We are never praised" (FGD)* | Strong supervision and appreciation of LHWs is needed<br><br>Irregularities in salary distribution may affect motivation and sustainability |

There is no need for any extra infrastructure, to implement this intervention in the LHW programme.

### 12.5.6.1.   *Perceived sustainability*

Sustainability depends upon the integration with the existing programs, strong training and supervision component, community involvement or acceptance, the political will as well as economy (158). A Cochrane review has suggested 10 key elements of sustainability; planning early, using evidence, commitment and support, community engagement, capacity building, evaluation, making champions and policy (158).

Qualitative interviews of the main stakeholders can help understand the perceived future sustainability of a programme. The following quotes draw attention to perceived sustainability.

*"This work is close to LHW work. We are enjoying it"*

*(FGD-LHW)*

If a strategy is helping LHWs enjoy their work, they will continue using this. Moreover the relationship development with the families will have long lasting effects in the community for any intervention delivered through LHWs.

*"I think we will continue using this approach in our routine work, even if this programme finishes, because it is useful for women"*

*(FGD-LHW)*

Community respects LHWs and this could help sustain the approach.

*"I think my LHW is the only one who helps me during testing times; she explains things to me lovingly and sympathetically. I get moral support; she solves the problems if possible"*

*(IDIM08-M-E-280213:7; 3)*

**Supervision is the key to sustainability**

LHWs expressed that the supportive supervision provided during monthly group and field training is a great help specifically for problem solving.

*"We feel really supported because we know now we can bring the problems in the meetings and when we are giving solutions in the community, they also believe in us now"*

*(IDI-LHW-11-13913: 5; 6)*

Majority of the LHWs expressed the important role of supervision, as well as the role of appreciation of their work. To keep their motivation sustainable some strategies are needed to appreciate their work.

*"This is the first time that I was appreciated, my seniors never do this"*

*(IDI-LHW-8-12912:4; 3)*

However, key obstacles to sustainability are to keep LHWs motivated and engaged. There are administrative, salary and other issues that are counterproductive.

**Summary**

The successful integration of the intervention depends upon the perceived sustainability of the intervention. The intervention was well integrated into the infrastructure of LHW programme. Supportive supervision was considered the key factor for the success of integration and for sustainability.

**13.Chapter Thirteen: Feasibility study - Discussion**

## 13.1. Introduction

This chapter discusses the findings of the feasibility study. The main findings are discussed followed by the discussion on methodological issues, including strengths and limitations. The chapter concludes with a brief discussion of the potential implications of the study.

Maternal psychosocial well-being, with its psychological and social dimensions is strongly linked with child health and development outcomes. As a result the psychosocial wellbeing of mothers can potentially improve the effectiveness of interventions that are targeting child health and development outcomes.

## 13.2. Summary of the key findings

### 13.2.1. Methodological considerations

The study area (Page 181) was selected conveniently, adjacent to the area where the SPRING trial was to be conducted. This was selected to help in understanding the feasibility of the intervention in a population that was similar to the intervention area. So the findings of this study cannot be generalized to other areas of Pakistan.

Although the area was selected conveniently, the purposive selection of the women for interviews helped in getting views from various socio economic and educational groups. Views of both pregnant and mothers of young children were important to get a holistic understanding of every component of the intervention. The representation of various socioeconomic and education groups, helped getting information, both from privileged and underprivileged.

The LHWs had no knowledge about which of the women were to be interviewed and when. The women were told that the information that they provided would be kept confidential. This helped the respondents to convey their true feelings without any fear. However since the LHWs are the residents of the area there is a possibility that the women may have chosen to only provide positive feedback for the LHWs.

The direct observations were carried out by the PhD researcher who had developed the intervention; and there this might be a possible source of bias. However

independent rating of the same observations of 3 LHWs (3x4=12) by independent trained observers showed good agreement (89%).

As the LHWs knew that they were being observed during their home visits, their practices may have improved and might not be representative of their performance during actual visits.

The interpretation and analysis of the data (page 194) can be influenced by the subjectivity of the interpreter. The PhD student tried to be impartial during the analysis and also recorded the opposite views on the intervention. The reflection sessions with other team members were conducted to ensure an in-depth and impartial understanding.

## 13.3.    Discussion on the main findings

This section focuses mainly on a discussion around our findings of the feasibility study. The findings of feasibility study are quite encouraging, in spite of the short embedding period (8 weeks) available to the LHWs to practise their skills in the community and to bring about behaviour change in the households. All the selected criteria of feasibility showed a positive trend towards acceptance, appropriateness, demand, integration and perceived sustainability of the maternal psychosocial wellbeing intervention.

With reference to the evidence presented in the literature review (2.3), maternal psychosocial wellbeing depends upon multiple psychosocial factors; and a comprehensive approach was needed to address these factors. The 5 Pillars is an approach to program delivery that addresses the main psychosocial needs of the mother who is the main delivery agent of child-focused interventions. This approach helps the community health workers to engage with mothers and importantly their families to bring about changes in behaviours that ultimately lead to better child outcomes. The individual feasibility criteria are discussed below.

### 13.3.1. Acceptability of the 5 pillars approach

Acceptability is meant to explore the extent to which an intervention meets the requirements of the target population and organizational setting. The involvement of the key community and programme stakeholders during the process of developing the maternal psychosocial wellbeing intervention helped achieve the acceptability in the current study and there was no negative feedback from the community on intervention material. Though this strategy is short of a holistic participatory approach, in which community actually suggests the key intervention areas (159), the involvement of community participants while preparing the pictures and materials, proved to be helpful.

LHWs perceived the intervention to be appropriate, useful for mothers and synergistic with their own work. The perception of usefulness is consistently cited as the most significant factor involved in the implementation of an intervention (160). Being women themselves, the concept of maternal psychosocial wellbeing was perceived as very useful by LHWs. LHWs expressed an intention to use the intervention and particularly liked the child focused approach of the intervention.

A systematic review of 48 studies on lay health workers (161) looked at the effectiveness of lay health workers in the primary and secondary care in immunization, reducing child morbidity and mortality. The majority of these interventions in the community were found to focus on women or children as recipients (162) but there was no involvement of the family. Similarly the findings of our qualitative studies, show that LHWs were not involving family members during their routine visits before the introduction of our intervention. LHWs were perceived more positively when they engaged the whole family, especially when they were successful in involving the mothers-in-law. It has been suggested in previous studies on patriarchal societies (163) that interventions focusing only on women may be insufficient. A quantitative survey in Mali included mothers, mothers-in-law and husbands to understand constructs towards gender, power and health. The multivariate regression analysis concluded that maternal health behaviours were directly linked to the preferences and opinions of mothers-in-law. This emphasized

the fact that maternal and child health agenda cannot achieve its full potential without the involvement of mothers-in-law in the interventions (163). Some studies have found the role of positive relationships with husbands and in-laws to be associated with the use of maternal health services (164). These findings were consistent with the results of feasibility study that has shown increased acceptability of LHWs in the households after they tried to involve the families. Moreover the families that were perceived to be difficult by LHWs became easy for them.

The finding in the current study that the LHWs find engaging with the husbands difficult, is also reported by other studies in Pakistan in which coming in contact with men was commonly reported as a problem by LHWs (165). This has implications for their role in the maternal psychosocial wellbeing and child care. However the father can be approached through mothers and by leaving reading material for him to reflect on. Another factor highlighted in a few studies is that the LHWs in Pakistan prefer to visit the families within their social networks (165), compared to the ones that are further away or considered 'difficult'. The family engagement emphasized in the 5 Pillars proved to be useful in the engagement of families that were considered difficult by the LHW.

A noteworthy part of the family engagement was the selection of a support person from within the household to support the pregnant women and mothers. This is in line with the cultural practice of many communities (166) where a support person helps the mother to breastfed and impart traditional knowledge about child care. However the exact role of a support person is ill-defined and their knowledge is questionable. The benefits of the presence of a support person during labour and delivery to the mother-infant pair have been pointed out in one study (167). The role of a support person in 5 pillars approach is defined and includes assisting the pregnant woman in taking a balanced diet, sharing her workload and accompanying her for antenatal care. Moreover, the LHWs may not be present during the delivery, and important functions of infant care, such as early initiation of breast feeding, refraining from pre-lacteals and early stimulation can be achieved through a support person. This was evident from the feasibility study that this approach proved useful. Mothers felt happy and supported by the help of the selected support person. The

selection and engagement of the support person was evaluated to be achieved by many LHWs and the mothers described it to be very useful.

The effectiveness of empathic listening, guided discovery, behavioural activation and problem solving has already been proved for depressed mothers in the THP (11). The application of these approaches universally for maternal wellbeing is shown to be feasible in the current study. The art of effective listening and communication with mothers has been emphasized in the literature (168). LHWs found the active listening technique to be very useful and this skill was successfully incorporated in their sessions as observed during the evaluation. The active listening technique when used by community health workers has been proposed to have a potential to empower community wellness (169) . This skill can help the LHWs in developing social skills, and the ability to develop respectful relationships with the community that are considered as fundamental roles of LHWs (170).

The feasibility study gives compelling evidence that guided discovery using pictures that challenge the existing beliefs of mothers and families, was considered useful and helped in behaviour change. A pilot study in Sindh, Pakistan also used embroidered pictures to start a discussion with the community on health matters and found these to be very effective (171). Since the LHWs are not used to carrying the job aids (counselling cards) routinely, in the feasibility study, the paper based job aids were sometimes not used for the household visits, even when the visits were being observed by the researchers. However, since LHWs and the families found these useful, it could be expected that the use of job aids would increase. The job aids were found valuable in addressing sensitive issues, for example birth spacing which has always been a difficult area for the LHWs (172). These counselling cards were found to be more useful for the uneducated population of mothers. Moreover, LHWs expressed its use as an ad memoir, which has been noted in another study on the use of job aids (148, 173).

The behavioural activation through breaking the tasks into smaller steps and including praising the mothers and families when health outcomes were achieved were found to be valuable. The problem solving skills of the LHWs were found to be

weak in the evaluation and the LHWs reported that the monthly supervision assisted in improving this skill.

According to this feasibility study, for problem solving, training alone was not found to be doing well, and a process of supportive supervision was needed. It is clear from the findings that supervision would be necessary to maintain quality. Since the monthly supervision meetings are a regular feature of the LHW program (173), these can be utilized in aiding the LHWs to problem solve. In the SPRING study, the LHWs' supervisors will be trained to facilitate these meetings which will be integrated into the routine monthly group meetings for the program to be sustainable at scale.

The 5 pillars approach is quite similar to the CBT approach used in a study to achieve a hard to achieve outcome of exclusive breast feeding in Pakistan (174). This was a qualitative study, and used a qualitative methodology to interview women and included focus group discussions with the LHW about exclusive breast feeding practices. The approach developed for psycho-education of mothers was similar to our approach in the following areas; involvement of other key household members, listening skills, use of imagery and behavioural activation. The lessons that were learnt from the feasibility study of the above study were also similar to our results. The approach was shown to be useful for the low –literacy population, was acceptable by families, supervision was considered important and tools were found to be useful.

The cognitive behaviour techniques used in our intervention have features in common with other Behaviour Change Techniques (175). However, the 5 pillars approach is broader in its scope. It places the mother at the centre of early child development programs and acknowledges that maternal wellbeing is a vital requirement to intervention-delivery

### 13.3.2.    Demand, and implementation

The feasibility study has underscored the demand of the maternal psychosocial wellbeing intervention by the community, and by the health workers –who find it to be useful in their own work. The actual use of the approach in the visits was indirectly confirmed by the evidence showing increased duration of LHW visits, involvement of family members as narrated by mothers, selection of support persons and by the awareness of women about the importance of maternal psychosocial wellbeing for child heath.

The 5 pillars approach was easily implemented by the LHWs and although the study was not looking particularly at measuring final outcomes, a few intermediate outcomes of behaviour change were reported during the evaluation. For example, mothers feeling relaxed after talking to LHW, LHWs spending more time during the visits and the involvement of family members.

The feasibility study helped to understand the implementation issues, variations and bottle necks. The RE-AIM framework of Glasgow and colleagues highlighted crucial information on a study's potential for translation into practice (176). If we consider the definition of implementation science defined by the Improved Clinical Effectiveness through Behavioural Research Group (ICEBeRG) which is ''The scientific study of methods to promote the systematic uptake of clinical research findings and other evidence-based practices into routine practice . . .''(17), our study tried to study the uptake of integrating a universal intervention for maternal wellbeing in real life settings. The feasibility study has tried to answer 'what,'' ''how,'' and ''who'' of implementation.

The barriers to implementation should be identified prior to scale-up (177) - bottle necks to implementation include various hard to crack factors like politics, lack of human resource and poor governance etc. which deters researchers from conducting research in this area (18). Barriers to implementation may arise at multiple levels including the policy level, organizational level and at the provider and the community/individual levels (176).

In the context of the maternal psychosocial wellbeing and its integration, the variations in health systems and their capacity to integrate health services necessitates adequate and appropriate assessment and customization (103) for maternal health care integration into MCH.

The integration of maternal psychosocial wellbeing into the routine LHW visits was assessed. The monthly home visits of LHWs were quite regular according to the qualitative and feasibility study. This is different from the findings of other studies, which report the LHW visits to be deficient (165). This could have been because of the fact that the current focus on the monthly polio campaign with strict monitoring necessitates the home visits. However, during the polio visits, LHWs fail to deliver any health messages and the fact that the community had been conveyed the intervention messages, it can be assumed that LHWs were able to conduct some visits as planned.

The intervention has used the existing resources in the health system; however the time required to complete a household visit and the extra time needed for a meaningful monthly supervision meeting are the only extra demands on the system.

The sustainability of the approach depends upon the motivation of the LHWs, which is dependent on a variety of factors. The motivation evident in the evaluation could be the result of an immediate effect of the intervention, however the LHWs expressed that the praise and appreciation by the trainers were mentioned as reasons for motivation. The governance and administrative issues such as delayed and irregular salaries of LHWs have always been a major de-motivating factor in the programme (148) . Another significant issue which impacts the motivation is the workload, which includes running monthly polio campaigns, family planning; advise on nutrition and hygiene; antenatal care, childhood immunization, and tuberculosis case reporting (178). However the integration of the maternal psychosocial wellbeing into their routine visits, made the LHWs reflect that this intervention was not an extra burden.

Since LHWs are the most commonly available community resource, there is a potential risk that too many programmes might use them for their specific objectives in health care. Their current scope of work includes over 20 tasks covering all

aspects of maternal, newborn and child care (145). Their job description often changes without them being consulted (148). In spite of the fact that our intervention is closer to her defined work, there is a potential of stress and burn-out in the long run. A study in 2008 assessed the perceived level of job stress, personal efficiency and quality of service delivery by LHWs in Pakistan (148). It was found that over a quarter of them were overly stressed. Factors responsible for less than optimal performance included the following; an unfair salary structure and system of reimbursement, poor communication and interpersonal skills and the perceived absence of professional development.

We included group and field supervisions as part of the intervention implementation. This decision was made learning from the experience of the THP researchers. They had found that a single dose of training is insufficient to impart skills and supervision has a vital role in not only problem solving, but also building confidence and reducing stress (11) .

### 13.3.3.    Integration

Integration of maternal psychosocial wellbeing into routine health care platforms has been suggested as the only feasible way to address the treatment gaps for mental disorders (103). The need for integration of maternal mental health services with routine primary care services has been realized because of various reasons.

It is difficult for LMICs to provide the specialist mental health services to the communities because of a lack of trained human resource in mental health. The WHO's Mental Health Gap Action Program (mhGAP) , the Lancet global mental health group and the Grand Challenges in Global Mental Health Initiative, have identified the need to increase mental health workforce for improving mental health worldwide (179, 180). The primary health care workers work closely with mothers, families and children in the community and can be an effective human resource to deliver mental health interventions. The need of such support during pregnancy as outlined in our intervention, in the postnatal period and during child rearing is realized and this strategy can potentially have a large impact. The knowledge and the

skills acquired to detect mental health problems that affect people across their life course will have a great advantage and integration of maternal psychosocial health services will help the health workers to establish a long term trusting relationship with the community.

With very high maternal depression rates in LMICs, the equitable care and access through the maternal psychosocial wellbeing approach can be achieved through integration with community based primary care or maternal and child health programmes. Integrated services give an opportunity to the community health workers to have a holistic approach to maternal health, instead of addressing physical or reproductive health or mental health issues in isolation. This will help avoid fragmentation of health services (103).

There is a well known and documented stigma attached to the mental health problems (181) for which some developed countries have developed strategies that aim to promote lasting change in the community perception of mental illness (182). In the absence of such strategies in the developing world, this integration into other health platforms will make it more acceptable for the communities and will encourage women to ask for help for their psychosocial issues.

The maternal and child health programmes can in turn also benefit from this integration. There is evidence that health seeking , breast feeding practices , immunization, child development and other maternal and child health outcomes improve with better maternal mental health (91).

 A recent paper that discusses the global perspective on integrating mental health highlights the challenges of integration (1). A major challenge identified is the misconceptions *related to mental health* which include; psychosocial problems being rare and not relevant to MCH, treatment requiring specialist services and integration into MCH not being a possibility. The high prevalence of psychosocial problems such as maternal depression has been discussed before and the relevance of MCH is evident from a meta-analysis showing the impact of maternal depression on preterm birth (183) and low birth weight (183). There is enough research evidence to support the effectiveness of non-mental health specialist-led interventions (11, 184).

There are further challenges related to the integration and scale up of maternal psychosocial interventions in LMICs. The *health systems* themselves are weak. There is lack of human resources, there are financial constraints, weak governance and fragmented health systems. However, in LMICs with such weak health systems, integration seems to be the only feasible option that can contribute to health systems strengthening (103).

*Gender inequity* is an important factor, preventing women from getting access to quality health services. Getting the attention of policy makers towards maternal psychosocial wellbeing is a challenge. This may not be a priority for governments, as their focus to improve the millennium development goals(185) mainly addresses the physical health alone. Our intervention's child focused approach addresses this issue to some extent. This can provide a window of opportunity through which maternal psychosocial wellbeing can contribute to women's empowerment and improved status that might positively impact future generations of boys and girls.

There is evidence to suggest the link between the physical and mental health and how these have an impact on each other (186). However in spite of this evidence this link is not well recognized by the health professionals or the community. The integrated approach can reach these women who otherwise will have a poor chance of being accessed by the health system.

### 13.4.      Strengths and weaknesses of the intervention

The primary strength of this study is the novelty of the intervention, which universally addresses the maternal wellbeing. Approaches that address maternal psychosocial wellbeing and that can be universally delivered through community health workers have not been developed. The 5 Pillars approach developed and integrated into a child development and nutrition intervention, through this study is innovative and potentially valuable for child outcomes.

Another strong point is its use of existing infrastructure with minimal extra demands on the system and it was implemented with minimal changes to the existing workflow. The vigour of the approach is enhanced by the vertical delivery and the potential to be integrated into any existing program. The LHWs can develop a long

term relationship with women and their families when applying these skills and thus are at an advantage. While the approach does require an initial investment of time from the LHWs, it can be expected that over time, as mothers become more empowered, will require less time and effort to achieve the desired outcomes. The approach therefore needs to be seen as a long-standing investment for mothers rather than a short term achievement. The approach can also assist in strengthening weak health systems. For example, peer-supervision for problem-solving can contribute to continuing development and motivation of health workers.

The study used a robust qualitative methodology. The evaluation of varied respondents and triangulation of the findings was beneficial. The direct observation of the LHWs delivering the intervention at the households is a strong way of assessing the extent to which the skills had been learnt and integrated. The fact that each LHW was directly observed four times, conducting her visit to diverse clients (pregnant, postnatal, mothers of children), delivering varied sessions, demonstrates this robustness.

There are certain limitations of the study. There was little time for the intervention to be completely embedded in the system, and the evaluation may have covered the 'honeymoon period' where the results overestimate the real effect. However the motivation level of the LHWs was still high two months after the training, which is encouraging.

A limitation of the study is that it does not measure the effectiveness of the 5 pillars approach. However, this is considered beyond the scope of the feasibility studies (153).

## 13.5.  Implications and future research

Further research is needed to test this integrated approach at scale in real-life settings. This is currently being undertaken as part of the SPRING cluster randomized controlled trial in Pakistan and India where early child development and 5 Pillars approach are integrated to be tested in the rural communities.

The feasibility, effectiveness, and cost-effectiveness studies planned for the SPRING Program will help us achieve a greater understanding of this approach, its value to be generalized and potential for scale up. To improve coverage and equitable access, scalability is important and the basic challenge is the availability of human resources. Task shifting, use of peers from the community and lay health workers can be one potential solution to the problem. Moreover use of technology, can also assist in training, supervision and monitoring in the long run.

The major strength of our intervention, which has important implications for health systems, is the synergistic positive effect of the intervention on maternal and mental health.

**14.Chapter fourteen: Summary and conclusions**

In Chapter 1, the major barriers to implementation of evidence based mental health interventions to routine care in low-income settings were discussed. It was clear that lack of human resources, as well as funding, necessitated approaches that integrated maternal mental health interventions into existing maternal and child health programmes rather than delivered as stand-alone programmes.

However, integration of interventions into existing programmes, especially in low-income settings, is not straightforward. Such integrated interventions (also called complex interventions) require careful development to meet the community's needs. They also need to be deliverable by existing non-specialist health workers. An applied research methodology, suggested by the MRC Guidelines for Development and Evaluation of Complex Interventions (6) and used previously in the South Asian context (15) underpinned the current project. In part 1 of the study (Development Phase) a qualitative methodology was employed to develop, and then integrate an existing evidence-based intervention (The Thinking Healthy Programme) into a child nutrition and development programme. In part 2 of the study, the integrated intervention was tested for feasibility in one setting in rural Pakistan.

The MRC Guidelines, and the PREMIUM methodology based on these guidelines, provided a useful framework to conduct the research. Previously referred to as formative or health services research, such research was often conducted piece-meal and in a linear fashion. The cyclical framework provided by the guidelines indicates that such research is necessary prior to conducting large-scale implementation. It can help refine the intervention, and the system of its delivery, increasing its chances of creating the desired impact. The Thinking Healthy Programme was adapted by integrating key strategies (empathic listening, family support, guided discovery using pictures, behavioural activation, and problem-solving) into the SPRING intervention for early child development. Called the 5 Pillars Approach, this integrated intervention was then tested for feasibility. The results show high levels of acceptability by both the recipients and community health workers. This demonstrates the usefulness of this step-wise approach – the careful development work meant that the intervention development and integration was informed, in the first-place, by the community and health systems in which it was to be integrated. The feasibility study confirmed this utility – the intervention did not require further

modifications. This gave confidence to the SPRING researchers that they would be conducting an expensive and labour-intensive randomized controlled trial on an intervention that had the best chances of achieving the desired outcomes.

Our study has identified areas where future research can help implement and integrate interventions into the health systems. The scalability of the intervention requires mechanisms that look at human resource options in the community, through task shifting. Moreover, use of technological solutions for supervision and trainings can reduce the human resource demand. The study has identified the need for the health workers to be kept motivated, and that their workload is kept manageable. Various vertical programmes work independent of each other while working with the LHWs. These programmes can look at the strategies to integrate their work rather than working independently.

It would be interesting to also look at the process of implementation of intervention in the trial, which can inform about what part of the intervention works, what does not, and why. This can inform the intervention and help the cyclical process encouraged in the MRC guidelines.

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# 16. Appendices

**1. Research paper by the PhD student published in NYAS**

## ANNALS OF THE NEW YORK ACADEMY OF SCIENCES
Issue: *Integrating Nutrition and Early Childhood Development Interventions*

# Integrating maternal psychosocial well-being into a child-development intervention: the five-pillars approach

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Maternal psychosocial well-being (MPW) is a wide-ranging concept that encompasses the psychological (e.g., mental health, distress, anxiety, depression, coping, problem solving) and social (e.g., family and community support, empowerment, culture) aspects of motherhood. Evidence-based MPW interventions that can be integrated into large-scale maternal and child health programs have not been developed. Building on several years of research in Pakistan, we developed and integrated a cognitive behavioral therapy–based MPW intervention (the five-pillars approach) into a child nutrition and development program. Following formative research with community health workers (CHWs; $n = 40$) and families ($n = 37$), CHWs were trained in (1) empathic listening, (2) family engagement, (3) guided discovery using pictures, (4) behavioral activation, and (5) problem solving. A qualitative feasibility study in one area demonstrated that CHWs were able to apply these skills effectively to their work, and the approach was found to be useful by CHWs, mothers, and their families. The success of the approach can be attributed to (1) mothers being the central focus of the intervention, (2) using local CHWs whom the mothers trust, (3) simplified training and regular supervision, and (4) an approach that facilitates, not adds, to the CHWs' work.

Keywords: maternal well-being; maternal mental health; psychological well-being; public mental health; maternal depression

## Introduction

Maternal psychosocial well-being (MPW) exists along a spectrum—at the extreme negative end, clinical depression is the leading contributor to the global burden of disease (more years of life lived with disability, reduced productivity including unemployment, increased physical illness, increased health expenditure, impact on families and caregivers, and premature mortality).[1] Prevalence rates of maternal depression (during pregnancy and in the first postnatal year) in low- and middle-income countries range between 18% and 25%, a variation possibly owing to different measurement tools with inconsistent cut-offs for diagnosing depression.[2] There is strong evidence that maternal depression, especially among those experiencing social disadvantage, is linked with preterm birth,[3] low birthweight,[3] undernutrition in the first year of life,[4] higher rates of diarrheal diseases, and early cessation of breastfeeding.[5] Further down the spectrum, psychosocial distress, detected by self-report questionnaires measuring depressive and anxiety symptoms, is even more prevalent, affecting up to half of all women living under circumstances of psychosocial adversity.[6] In low-income countries, maternal psychosocial distress is associated with infant underweight at 6 months, and increasing levels of distress are correlated with increased infant underweight, demonstrating a dose–response relationship.[6] Depressive symptoms in low-income pregnant women and mothers living in high-income countries have

been associated with use of tobacco, alcohol and illicit drugs,[7] adverse birth outcomes,[8] chronic health problems,[9] low maternal self-esteem,[10,11] and parenting difficulties.[12] At the other end of the spectrum, empowerment, good quality of interpersonal relationships, social support, recognition and reward for the maternal role, and good physical health are all associated with positive well-being.[13]

Maternal psychosocial well-being might also moderate the impact of interventions for child health and development.[14] Child survival, nutrition, and development programs are mostly directed toward the mother, who is the most proximal and key delivery agent of interventions. The impact of these programs is related, therefore, to the functional capacity of the mother, her receptivity to the message, and uptake of the interventions offered. The mother's psychosocial well-being is critical to the uptake and success of these programs. Yet, interventions for MPW remain conspicuously absent from most nutritional and early child development programs.

In this paper, we describe the development and piloting of an approach for MPW that has the potential for integration at scale in a combined nutrition and early child development program. The approach is designed to be delivered by a CHW as part of any maternal or child health program.

### The Thinking Healthy Programme

The approach originated from the Thinking Healthy Programme (THP), developed for the management of maternal depression, in a low-income rural setting in Rawalpindi, Pakistan.[15,16] The THP is based on principles of cognitive behavioral therapy (CBT), which is the most widely researched and evidence-based form of talking therapy.[17] At its simplest, it is a structured form of dialogue between the therapist and client that aims to alter the cycle of unhelpful or non-healthy thinking (cognitions) and the associated undesirable feelings and actions (behavior). CBT has been used for a variety of psychological disorders, such as anxiety and depression, and also for problems such as marital distress.[17] Following extensive formative work, we adapted the techniques of CBT so that these could be used by CHWs working with women suffering from perinatal depression in rural Pakistan. Briefly, the intervention consisted of 16 home-delivered individual sessions—four weekly sessions in the last month
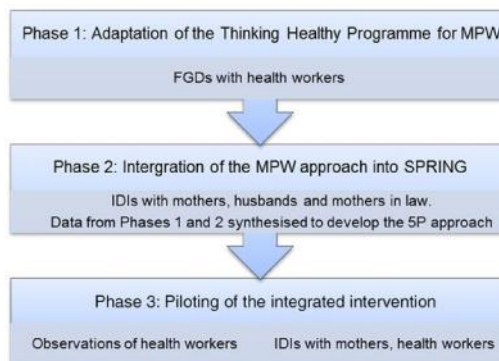


**Figure 1.** Phases of the project. Abbreviations: MPW = maternal psychosocial well-being; IDI = in-depth interview; FGD = focus-group discussion; SPRING = Sustainable Programme Incorporating Nutrition and Games.

of pregnancy, three fortnightly sessions in the first postnatal month, and nine monthly sessions thereafter. Details of the THP and its evaluation are described elsewhere,[15,16] and the THP training manual can be accessed at hdrfoundation.org.

The THP was a targeted intervention for women suffering from perinatal depression. Our aim in this project was to adapt the THP so it could be delivered as a *universal* intervention to all women living in conditions of psychosocial adversity. We also aimed to integrate the intervention into a child nutrition and development program and evaluate its acceptability and usefulness through a pilot study.

## Methods

The project was conducted in three phases (Fig. 1).

### Phase 1: Adaptation of the THP into a universal MPW approach

In the first phase of adaptation, we carried out focus-group discussions (FGDs; $n = 4$) with the 40 CHWs (called "lady health workers" or LHWs) who had delivered the original THP to depressed women in the community.[16] Our objective was to explore whether the LHWs were still using the techniques taught to them in the THP in their day-to-day health education work with women who were not depressed but could benefit from these techniques. We asked the LHWs about the predominant types of problems for which they found these techniques useful and any variations in the manner in which they employed them. The groups followed a semistructured

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format and served to guide the discussion while permitting maximum elaboration of participant response.

## Phase 2: Integration of the MPW approach into a combined nutrition and early child development program

In April 2011, work began in Pakistan on the Sustainable Programme Incorporating Nutrition and Games (SPRING), a 5-year program to develop an innovative, feasible, affordable, and sustainable community-based approach that can achieve delivery at scale of known effective interventions that will maximize child development, growth, and survival. The intervention is designed to be delivered over 2 years to mothers and their newborns by existing cadres of low-cost community-based agents (CBAs), such as Anganwadi and Accredited Social Health Activist (ASHA) workers in India and LHWs in Pakistan, through home visits carried out during pregnancy, immediately after birth, the postpartum period, and infancy. SPRING incorporates the World Health Organization (WHO)/United Nations Children's Fund (UNICEF) Care for Development package, which provides comprehensive guidance on counseling families on care to improve feeding practices and interactions with children. A unique feature of the SPRING intervention is its focus on maternal psychosocial well-being as an integral part of the intervention.

In the SPRING formative phase, in-depth interviews (IDIs) and narratives were conducted with a purposive sample of mothers ($n = 37$), observations ($n = 12$), in-depth interviews with fathers ($n = 4$), and grandmothers ($n = 4$). In addition to studying key behaviors related to child development and nutrition in the South Asian context,[18] maternal psychosocial factors that affected child health and development-related activities were explored. Using data from phase 1, the mothers were asked if the THP techniques identified as helpful by the LHWs would be relevant in addressing the maternal psychosocial factors affecting care for child development.

Data synthesis involved thematic analysis of the data (see below), followed by a systematic triangulation process by which the findings of phase 1 and 2, the reflections of the trainers and supervisors of the original THP, and findings from the THP trial[16] were combined to obtain an in-depth understanding of the issues involved in designing and integrating the proposed MPW approach into the larger SPRING program.

## Phase 3: Training of health workers and piloting of the integrated MPW approach

Once the approach had been developed and integrated into SPRING, 13 LHWs from one Union Council (Bagga Sheikhan, population approximately 20,000) were trained in using it. Training for the larger SPRING intervention comprised 5 days of classroom training followed by 1 day of field training.

The LHWs then proceeded to apply the SPRING intervention incorporating the MPW approach with women in their respective areas. Qualitative and quantitative feedback was obtained from LHWs about the training and intervention. Fidelity was tested by observing each LHW deliver a session to a mother approximately four times, about 6 weeks posttraining. This was rated independently by a researcher using a specially developed checklist (Table 4). Qualitative feedback using in-depth interviews was obtained from mothers ($n = 18$) and LHWs ($n = 6$) about the usefulness of the intervention.

## Data collection and analyses

Interviews were conducted at home or the local health facility according to the participants' preferences. Interviews were digitally recorded and transcribed verbatim, and detailed field notes were taken by a second researcher. Notes were transcribed on the day of the interview. Reflective sessions the next day with the research team helped in deciding about data saturation and adding further probes. Memos were written throughout the analysis to help examine how the team's thoughts and ideas evolved. Data were analyzed in the local language using an interpretive thematic analysis. The transcribed data for each interview was read and reread to gain familiarity with the raw data. During the process of familiarization, the emerging categories were manually highlighted and comprehensives codes were generated. These emerging categories were compared and contrasted with each other to identify any patterns in the raw data. A thematic table was developed to organize the emerging categories, which were refined through further reflection.

Ethical clearance for all aspects of the formative research was obtained from the local ethics committees, Independent Research Boards (IRB) in

**Table 1.** Techniques from the Thinking Healthy Programme identified by LHWs for universal use

| Technique | Brief description |
| --- | --- |
| Empathic listening | LHWs previously used didactic methods of communication. Skills of active listening (conveying interest and empathy, giving feedback) helped them develop a trusting, safe, therapeutic relationship, not just with the mother but also with the whole family. |
| Improving family support | LHWs were investing time convincing key family members to support the mother. Using the shared agenda of the child's optimal development, they could successfully engage with husbands and mothers-in-law. These alliances were useful both to "sell" the program (thus improving the LHW's access to the household) and to improve support for the mother. |
| Guided discovery using pictures | The LHWs found the use of pictures for communicating new ideas a powerful tool for engagement and behavior-change communication. Using characters depicting mothers, infants, and other family members, the pictures help the LHWs and families discuss deeply held beliefs and undesired behaviors without alienating them. The images are also helpful with less literate women. This technique therefore served as a health communication tool for the LHWs, and a powerful visual cue for the clients, to convey a new message. |
| Behavioral activation | Building on the therapeutic relationship, alliance with the family, and identification of undesired behaviors that need to be changed or new behaviors that need to be adopted, the LHWs found this fourth technique useful to motivate mothers to put things into practice. The LHWs found value in this structured approach of breaking tasks into small manageable activities and then working with the mother and other family members to develop a schedule in which these activities could be conducted. A simple health calendar was found useful to record progress or problems. |
| Problem solving | Problems and barriers in putting new knowledge and skills into practice are analyzed. Taking the time to listen to problems, and then working with the clients and their families to generate solutions, was found to be more effective than the didactic approach. |

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## Results

### Phase 1: Adaptation of the THP into a universal MPW approach

The FGDs identified a number of techniques that the LHWs had learned from the THP that they continued to use in their day-to-day work after the project ended. Their existing job includes visiting households and educating the family about maternal and child health. The general consensus was that many

of the techniques from the THP helped them to deliver their messages more effectively and thus become better health educators. More specifically, five techniques were identified, which are summarized in Table 1. Some techniques that were more specific to clinical depression, such as cognitive restructuring (helping mothers identify and replace negative thoughts), keeping thought diaries, and homework (structured record of activities), were not found to be helpful and were not included.

### Phase 2: Integration of the MPW intervention into a combined nutrition and early child development program

Table 2 summarizes the main themes emerging from the interviews with mothers and their families about maternal psychosocial factors affecting care for child development. Thematic analysis showed that stress

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**Table 2.** Interview themes with mothers and their families

| Maternal psychosocial factors influencing care for child development | THP technique identified as useful |
|---|---|
| Individual-level factors | |
|   Stress (very common in women) | Empathic listening, family support |
|   Interpersonal conflicts, such as marital disharmony and falling out with neighbors | Empathic listening, family support, and problem solving |
|   Negative events in childhood (e.g., poverty, losing a parent) leading to poor self-esteem, lack of motivation, resignation, irritability, and argumentativeness | Behavioral activation |
|   Negative behaviors (e.g., neglecting and abusing children, delay in seeking help if ill) | Guided discovery, behavioral activation, and problem solving |
| Family/community–level factors | |
|   Lack of family support; expected to "do everything" | Family support |
|   Repeated unwanted pregnancies; too many children; no time to play with children | Guided discovery, family support, problem solving |
|   Not empowered to take appropriate steps if child is unwell | Guided discovery, family support, problem solving |
|   Excessive work load, competing demands on time, poor health | Family support, problem solving |
|   Economic issues, including poverty; competing priorities | Problem solving |
|   Poorly educated women, traditional societies | Guided discovery |

was common in women of childbearing age and that it was attributed to their life situation. Interpersonal conflicts (predominantly with the husband or the mother-in-law) were frequently mentioned. Negative life events in childhood, such as poverty and losing a parent, or harsh treatment by the family, could lead to poor self-confidence in the mother and influence her care of the child. Almost all the respondents felt that these women could be helped if they were listened to, their families were supportive, and the LHWs helped them with their problem-solving skills.

At the family/community level, there was strong agreement that those women who were most distressed were those whose families did not support them emotionally or practically. Many women were expected to do their domestic chores, help in the fields, and raise the children all on their own. This left little time for interaction with children. Another strong theme was that frequent unwanted pregnancies meant there were many children and little time to meet their individual needs. This was because the women had little control over their reproductive choice or lacked the knowledge and/or family support for contraception. The third theme related to disempowerment—many women had little knowledge of their health facility as they seldom left the house and had to rely on a chaperone to take them to the hospital if the child was unwell, resulting in a delay in seeking help. However, many women felt that times were changing and that the LHWs, being professional women themselves, were ideal agents for stimulating change. They were in an ideal position to challenge the prevailing attitudes of families and communities. It was felt that using pictures and narratives was a good way to address these difficult issues in a nonconfrontational manner.

Other themes included economic hardships and the demands of day-to-day life, especially in families that were very poor. Lack of education among women, and a reliance on spiritual and traditional methods of care, also came across as a theme. The LHWs' role was felt to be limited in influencing extreme poverty and lack of education, but there was a consensus that the use of pictures for communicating new ideas could be useful in challenging traditional beliefs and that problem solving could help some women improve their situations.

### The five-pillars approach to maternal psychosocial well-being
Triangulation of the findings from phases 1 and 2 led to the development of the five-pillars (5P) approach. The approach, illustrated in Figure 2, is derived from

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**Figure 2.** The five-pillars (5P) approach to maternal psychosocial well-being.

the techniques identified by the LHWs (Table 1) and integrated into SPRING on the basis of information derived from the formative research (Table 2). The main features of the approach are summarized in Table 3.

The key feature of the approach is that it underpins the delivery of the key nutrition and early development messages delivered by SPRING. Thus,

it is integrated into the main intervention, rather than being a stand-alone element. Each individual session targeting a specific message uses the 5P approach for its delivery. In practice, the approach works as follows:

**Pillar 1.** Family support: the initial home visits emphasize family participation, and the training manual gives specific instructions on how this can be facilitated. Family members are encouraged to be active partners for the whole duration of the program. Strategies to engage key decision makers, such as mothers-in-law and husbands, are emphasized.

**Pillar 2.** Empathic listening: each session begins in an open-ended fashion, with the LHW allowing the woman to talk freely. She uses active listening skills to convey empathy and makes a list of problems the woman faced in performing the desired behaviors that the LHW might have suggested in her previous visit.

**Pillar 3.** Guided discovery using pictures: each new health message related to play, stimulation, or nutrition is conveyed using this approach (Figs. 3 and 4). Using carefully researched pictures, the LHW discusses both undesired and desired behaviors. She is trained not to

**Table 3.** Key components of the 5P approach

| Item | Key features |
|---|---|
| Theoretical framework | Uses techniques derived from cognitive–behavioral therapy, including empathic listening, challenging beliefs using pictures, behavioral activation, and problem solving (see Table 1). Involves family members and is participatory. |
| Delivery agent | Community-based health workers: lady health workers (LHWs); generally educated to 10th grade and undergo 1-year training; no prior training in psychosocial care or counseling. |
| Sessions | The approach is integrated into each of the 24 monthly SPRING sessions delivered at home to mother and family; three sessions in pregnancy; one immediately after birth; 23 monthly sessions thereafter. Sessions integrated into the routine visits of the LHWs. |
| Tools | Training manual for health workers and trainers with step-wise instructions for every visit; pictorial counseling cards to use during home visits; a health calendar for families. |
| Training | 1.5 of the 5 days of SPRING training—includes lectures, discussions, and role plays followed by 1 day of field training. |
| Supervision | Monthly 2-h sessions in groups of 10–15 conducted by LHWs' own supervisors trained by the intervention team. |
| Other features | Integrated with routine monthly training and supervision program; compatible with existing district-level administrative structures. |

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**Table 4.** Observations of LHWs' delivering 5P in the community

| 5P Component/technique | Performed correctly |
|---|---|
| 1. Family support | |
| Involves key family members in the discussions | 22/35 (63%) |
| Encourages family members to support mother and infant | 20/35 (57%) |
| 2. Empathic listening | |
| Greets the mothers | 51/52 (98%) |
| LHW has a friendly exchange with the mother (e.g., makes eye contact, smiles, friendly tone) | 50/52 (96%) |
| Asks how the mother and/or child is doing | 50/52 (96%) |
| Shows he/she is listening (nods, eye contact, acknowledging sounds) | 48/52 (92%) |
| 3. Guided discovery | |
| Shows the picture and asks the family what the picture shows | 44/51 (86%) |
| Explains the picture and discusses the positive behavior | 39/50 (76%) |
| 4. Behavioral activation | |
| Uses positive words and gestures when the mother says something right | 30/51 (58%) |
| Counsels in steps rather than only giving advice | 28/50 (56%) |
| 5. Problem solving | |
| Asks about problems the family may have in putting the advice into practice | 26/50 (52%) |
| Empathizes with the problems | 24/43 (58%) |
| Discusses ways of overcoming the problems | 26/40 (70%) |
| Discusses getting support from the wider family to overcome problems | 20/38 (57%) |

impose her views but to allow the mother and family to consider each viewpoint and come to their own conclusions. The idea is that the basis of any behavior change begins at the cognitive level.

**Pillar 4.** Behavioral activation: once the message is received and accepted, the activities related to it have to be made manageable so that a sense of mastery is achieved. The training manual has suggestions for how each nutrition or play-related task can be broken down and monitored with the help of family members.

**Pillar 5.** Problem solving: the LHW spends time discussing the problems the woman faced in carrying out the tasks suggested in the previous session (see Pillar 2). She discusses possible solutions, which she can generate through discussion with the family or through her supervision.

**Training.** The MPW training was conducted in the first 2 days of the 5-day training program, and the skills learned were repeatedly practiced throughout the 5 days. The training emphasized hands-on practice; thus, role plays were utilized extensively. Jargon was avoided. Short video clips, portraying each MPW component, were used to facilitate understanding. Both good and bad practices were observed and discussed, followed by role plays.

The following is an example of training instructions for a role play entitled, What are friends for? Divide the LHWs into pairs. Now ask them to pretend that they are friends who have always been there for each other through thick and thin. One of them has a problem and her friend wants to help her. Ask the friend to listen to the problem in a way that is helpful. Do this for 3–5 minutes. Then ask the mother with the problem if talking about it made her feel better and why. Ask the listener to reflect and comment on the things for which she may have tried to be a good listener. Make a note of these. Discuss each of the things that were found helpful with the whole group.

Similar role plays were used to understand and practice skills related to each of the five pillars. All the training materials and session delivery tools, such as counseling cards, have cues to remind the LHWs to use these techniques.

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**Figure 3.** Using pictures to stimulate behavior change. This picture shows an unsupported stressed mother too busy to breastfeed her infant.



**Figure 4.** Using pictures to stimulate behavior change. This picture shows a mother being supported in her chores by a family member and able to attend to her infant's needs.

**Supervision.** Supervision was conducted by trained facilitators (usually the LHW's own area supervisor). This was integrated into their routine supervision and conducted in groups of 10–15 LHWs, meeting every month for about 2 hours. During supervision, LHWs discussed problems and shared experiences. Solutions were not prescribed by the supervisors but were generated through brainstorming sessions. Local language, customs, and practices were incorporated into these solutions.

*Phase 3: Results of the training and pilot study*
Table 4 summarizes the observations of LHWs delivering the intervention in the community. Although the LHWs had relatively little time to practice and embed the approach in their day-to-day work, they displayed a range of techniques across all the components of 5P. Feedback on each aspect of the 5P approach, obtained through in-depth interviews with the women, LHWs, and lady health supervisors, is summarized below.

**Family support.** The health workers found the systematic approach to family engagement effective and useful. The child development agenda gave a window to the health workers to engage the whole family in a dialogue of the importance of supporting the mother to achieve this agenda. The LHWs felt that the ownership of the program generated by this sense of participation, especially by the mother-in-law, made their job easier. "Our visits are perceived differently now because we involve the whole family, especially the mother-in-law and husband" (IDI with an LHW).

Mothers also perceived this greater emphasis on involving significant family members in their care. Nominating a special person to support the mother throughout pregnancy and during childbirth was also felt to be useful. "I am pregnant and my LHW asked my family to select a person who can support me. My sister-in-law was nominated because she is educated and experienced, and she has begun to give me special attention . . . " (IDI with an uneducated 23-year-old pregnant mother).

Involving significant family members from the beginning helped the LHWs engage families they previously described as difficult; LHWs felt that initially they had to invest more of their time to engage the families. This required getting used to, but the general feeling was that it was worthwhile because it made them more effective. "The difficult ones

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have now become easier for me . . . I used to think that they won't listen as they were always suspicious about my work, but I felt good after engaging them and I think they felt good too" (IDI with an LHW).

**Empathic listening.** Although LHWs had been taught about counseling techniques in their previous training, they seldom practiced it, and their mode of communication with mothers was largely didactic: "We were accustomed to the 'telling' instead of listening to women, but after this training we have learnt to first listen to the problems of a mother and family, and then offer advice . . . " (FGD with LHWs). Mothers found this new mode of communication very helpful: "It feels good to talk to her; she tells me stuff, but also listens to me and asks me how I am doing" (IDI with a 32-year-old uneducated mother).

**Guided discovery using pictures.** The use of pictures to gently challenge beliefs was considered useful, especially by uneducated families, or families that were hard to engage and not open to new ideas. For example, the subject of contraception was introduced through a picture of a distracted mother with many little children, unable to give individual attention to the newborn, with messages about how this child was losing out. "It is easier to communicate our messages with some families because we can talk about the pictures and convey our message through the pictures without offending anyone . . . " (IDI with an LHW).

Mothers also found this interesting and more engaging than a lecture. For example, the message promoting exclusive breastfeeding showed a picture of a mother giving her infant the first feed after birth with the mother-in-law speaking of the benefits, with another picture of a bright and healthy toddler thanking the mother, all accompanied by memorable jingles in the local language. The LHW would share this with all the family members present and talk about the characters in the picture. These pictures were also left with the family in the form of a small desk calendar. "LHW shows pictures on the counseling cards and asks me what this picture shows . . . .I find this interesting" (IDI with an uneducated 33-year-old mother).

**Behavioral activation.** Previously, LHWs would deliver a health message and expect mothers to practice the associated activities. If this was not being done in subsequent visits, the woman would generally be admonished. LHWs found that breaking down tasks into small components and giving positive feedback on even small accomplishments was more effective: "It was a struggle to get her to take her iron tablets and I stopped bothering. Then, I asked her to take them as they would make her baby strong and clever. I asked her sister to note every time she took a tablet, and I told her how well she was doing for her baby. She felt good about it . . . .." (IDI with a 28-year-old mother).

Similar feedback was obtained from mothers: "I have improved my diet . . . because my LHW helped me make a diet chart and add some fruit and snacks . . . ; I don't forget now . . . ." (IDI with a 25-year-old educated mother). "I never went for a check-up because I was afraid . . . ; my LHW explained what would happen step by step, and I went and it was OK" (IDI with a 19-year-old uneducated mother).

**Problem solving.** LHWs had begun to use problem solving with the mothers, and this was acknowledged in the feedback: "She is very supportive . . . she counsels me about my problems and gives me good suggestions" (IDI with a 23-year-old educated mother). The LHWs felt that as they practiced this approach more, they would become better at problem solving. They also felt that the monthly peer supervision was very useful and gave them an opportunity to brainstorm about difficult problems. "During supervisions, we discuss where we are stuck with some mothers, and get useful suggestions from the others, which we can take back to the mothers . . . . We also find out we are not the only ones in such situations." (IDI with an LHW)

Some strategies were less successful. For example, the interaction of LHWs with the husband, who is an important source of support, could not be achieved in the majority because they were often out of the house, or were uncomfortable talking to the female LHW. As mentioned above, problem solving was another area in which the LHWs were still struggling, and supervision could help improve this.

## Discussion

Maternal psychosocial well-being is directly associated with child health and development outcomes, and is likely to moderate the effectiveness of

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interventions targeting such outcomes. Approaches addressing MPW that can be universally applied by CHWs, are easily integrated into nutrition and child development programs, and that are scalable and sustainable, have not been developed. The 5P approach is an attempt to develop and evaluate such an approach within the context of a scalable intervention for child nutrition and development (SPRING). The results of the formative phase and piloting are promising: the 5P approach, an evidence-based intervention derived from the psychotherapy field, has been successfully integrated into SPRING and found to be feasible and useful.

Maternal psychosocial well-being is associated with a number of individual and family/community-level factors (Table 2) and simple counseling skills, part of many child development and nutrition programs, are not sufficient to address these factors. We successfully adapted an evidence- and CBT-based intervention for maternal depression, identifying strategies that could be useful for universal application and could be integrated into a child nutrition and development program (Table 1). Key elements for successful adaptation and implementation include the following: 5P is not a counseling technique but a comprehensive approach to program delivery that addresses multilevel psychosocial needs of the most proximal delivery agent of child-focused interventions (i.e., the mother). It is a process that allows community-based health workers to engage with mothers and families and bring about incremental changes that ultimately lead to better program outcomes. It is not delivered vertically and can be integrated into any existing program. In other words, using the five principles for delivery of any maternal and child health program, regardless of its duration or nature, can be beneficial for maternal psychosocial well-being. CHWs are ideal to adopt 5P because they are in a position to develop a relatively longer term relationship with the mothers and families—an element that is critical to the use of the approach.

The approach is designed to facilitate the existing work of CHWs, rather than add to it. While it does require an initial investment of time from the CHWs, it can be expected that over time, as mothers become more empowered, informed, and psychologically functional, they will be more receptive to the program, and less time and effort will be required to achieve the desired outcomes. The

approach therefore needs to be seen as a long-term investment to increase program value rather than a quick fix. The approach, in our view, can assist in strengthening weak health systems. For example, peer supervision for problem solving can contribute to continuing development and motivation of health workers and reduce their own stresses of working in adverse socioeconomic environments.

The approach would, understandably, have limitations in settings with extreme deprivation, such as poverty and food insufficiency or a humanitarian crisis. A moderator analysis (to understand for whom the treatment did and did not work) of our THP with depressed mothers, however, showed that the intervention works effectively in women living in conditions of poverty and disempowerment.[19] It may be that as the psychological health of mothers improves, they are better able to deal with adversity and make the best use of the resources that they have.

It is also evident that continued refresher training and supervision would be necessary to maintain quality. In the THP,[15] this was achieved through monthly peer supervision where 10–15 LHWs met every month to discuss particular problems and brainstormed to find solutions. They also refreshed their skills through practice and discussion. In the SPRING study, the LHWs' supervisors will be trained to facilitate these meetings, which will be integrated into the routine monthly group meetings that each has with her area supervisor. This will ensure that the program is sustainable at scale. Ensuring continued and quality supervision at scale is a challenge to any program—the process can be greatly assisted by involving all stakeholders in the design and implementation of the new intervention from the outset, as we have attempted to do with SPRING.

While the CBT techniques used in our intervention are derived from the psychotherapy field, they have features in common with other behavior-change techniques. Techniques such as those focusing on behavior–health and behavior–consequence links, barrier identification, setting of graded tasks, and provision of contingent rewards, overlap with the 5P approach.[20] Indeed, we have successfully used a similar approach to bring about behavior change in the specific area of exclusive breastfeeding.[21] However, the 5P approach described here is broader in its scope, placing the

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mother at the center of child development programs, recognizing that her well-being is an essential prerequisite to intervention delivery.

Further research is needed to test this approach at scale in real-life settings. This is currently being undertaken as part of the SPRING randomized controlled trial in Pakistan and India. The feasibility, effectiveness, and cost-effectiveness studies planned for the SPRING program will help us achieve a greater understanding of this approach, its generalizability and potential for scale-up. At the policy level, it is important for all stakeholders in maternal and child health care to recognize the integral role of maternal psychosocial well-being in such programs.[22]

## Acknowledgment

## Conflicts of interest

The authors declare no conflicts of interest.

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**2. Paper on how to report qualitative research**

# Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups

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## Abstract

**Background.** Qualitative research explores complex phenomena encountered by clinicians, health care providers, policy makers and consumers. Although partial checklists are available, no consolidated reporting framework exists for any type of qualitative design.

**Objective.** To develop a checklist for explicit and comprehensive reporting of qualitative studies (indepth interviews and focus groups).

**Methods.** We performed a comprehensive search in Cochrane and Campbell Protocols, Medline, CINAHL, systematic reviews of qualitative studies, author or reviewer guidelines of major medical journals and reference lists of relevant publications for existing checklists used to assess qualitative studies. Seventy-six items from 22 checklists were compiled into a comprehensive list. All items were grouped into three domains: (i) research team and reflexivity, (ii) study design and (iii) data analysis and reporting. Duplicate items and those that were ambiguous, too broadly defined and impractical to assess were removed.

**Results.** Items most frequently included in the checklists related to sampling method, setting for data collection, method of data collection, respondent validation of findings, method of recording data, description of the derivation of themes and inclusion of supporting quotations. We grouped all items into three domains: (i) research team and reflexivity, (ii) study design and (iii) data analysis and reporting.

**Conclusions.** The criteria included in COREQ, a 32-item checklist, can help researchers to report important aspects of the research team, study methods, context of the study, findings, analysis and interpretations.

**Keywords:** focus groups, interviews, qualitative research, research design

Qualitative research explores complex phenomena encountered by clinicians, health care providers, policy makers and consumers in health care. Poorly designed studies and inadequate reporting can lead to inappropriate application of qualitative research in decision-making, health care, health policy and future research.

Formal reporting guidelines have been developed for randomized controlled trials (CONSORT) [1], diagnostic test studies (STARD), meta-analysis of RCTs (QUOROM) [2], observational studies (STROBE) [3] and meta-analyses of observational studies (MOOSE) [4]. These aim to improve the quality of reporting these study types and allow readers to better understand the design, conduct, analysis and findings of published studies. This process allows users of published research to be more fuller informed when they critically appraise studies relevant to each checklist and decide upon applicability of research findings to their local settings. Empiric studies have shown that the use of the CONSORT statement is associated with improvements in the quality of reports of

randomized controlled trials [5]. Systematic reviews of qualitative research almost always show that key aspects of study design are not reported, and so there is a clear need for a CONSORT-equivalent for qualitative research [6].

The Uniform Requirements for Manuscripts Submitted to Biomedical Journals published by the International Committee of Medical Journal Editors (ICMJE) do not provide reporting guidelines for qualitative studies. Of all the mainstream biomedical journals (Fig. 1), only the British Medical Journal (BMJ) has criteria for reviewing qualitative research. However, the guidelines for authors specifically record that the checklist is not routinely used. In addition, the checklist is not comprehensive and does not provide specific guidance to assess some of the criteria. Although checklists for critical appraisal are available for qualitative research, there is no widely endorsed reporting framework for any type of qualitative research [7].

We have developed a formal reporting checklist for in-depth interviews and focus groups, the most common methods for data collection in qualitative health research.

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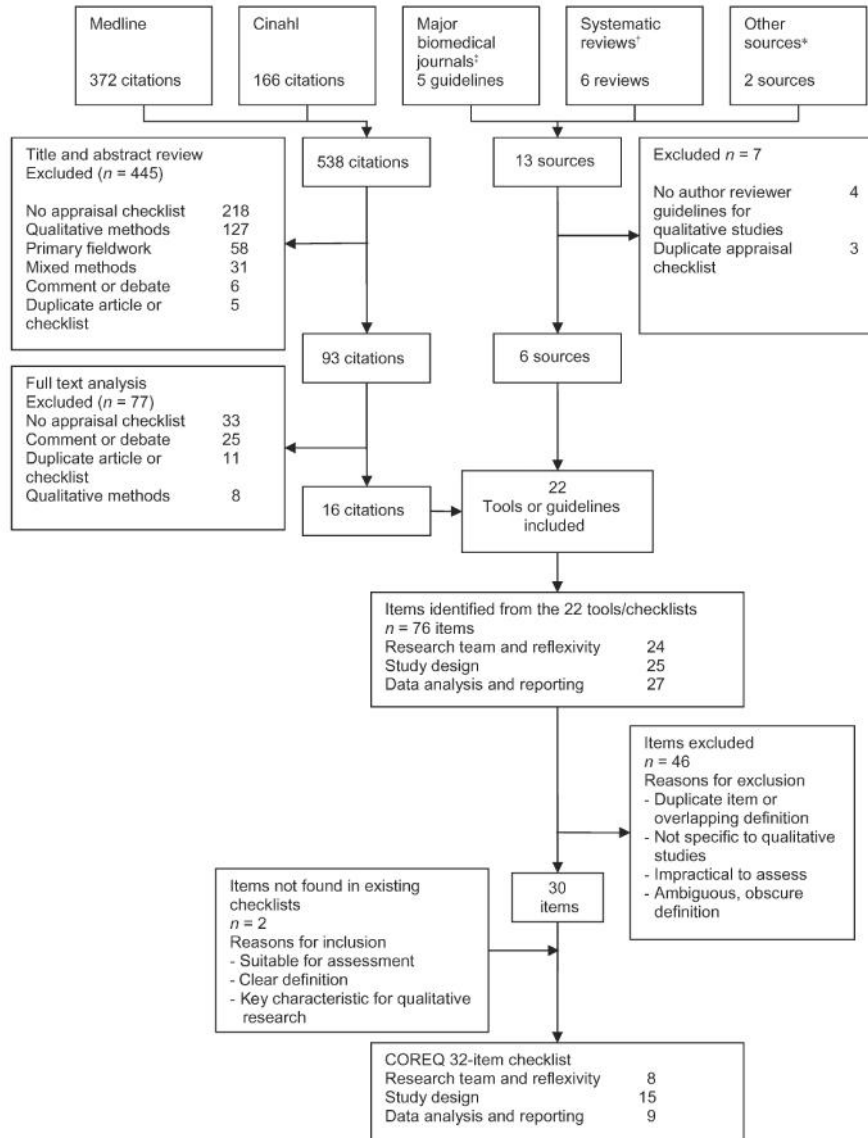
**Figure 1** Development of the COREQ Checklist. *References [26, 27], ‡References [6, 28–32], ‡Author and reviewer guidelines provided by BMJ, JAMA, Lancet, Annals of Internal Medicine, NEJM.

These two methods are particularly useful for eliciting patient and consumer priorities and needs to improve the quality of health care [8]. The checklist aims to promote complete and transparent reporting among researchers and indirectly improve the rigor, comprehensiveness and credibility of interview and focus-group studies.

## Basic definitions

Qualitative studies use non-quantitative methods to contribute new knowledge and to provide new perspectives in health care. Although qualitative research encompasses a broad range of study methods, most qualitative research

publications in health care describe the use of interviews and focus groups [8].

## Interviews

In-depth and semi-structured interviews explore the experiences of participants and the meanings they attribute to them. Researchers encourage participants to talk about issues pertinent to the research question by asking open-ended questions, usually in one-to-one interviews. The interviewer might re-word, re-order or clarify the questions to further investigate topics introduced by the respondent. In qualitative health research, in-depth interviews are often used to study the experiences and meanings of disease, and to explore personal and sensitive themes. They can also help to identify potentially modifiable factors for improving health care [9].

## Focus groups

Focus groups are semi-structured discussions with groups of 4–12 people that aim to explore a specific set of issues [10]. Moderators often commence the focus group by asking broad questions about the topic of interest, before asking the focal questions. Although participants individually answer the facilitator's questions, they are encouraged to talk and interact with each other [11]. This technique is built on the notion that the group interaction encourages respondents to explore and clarify individual and shared perspectives [12]. Focus groups are used to explore views on health issues, programs, interventions and research.

## Methods

### Development of a checklist

*Search strategy.* We performed a comprehensive search for published checklists used to assess or review qualitative studies, and guidelines for reporting qualitative studies in: Medline (1966—Week 1 April 2006), CINAHL (1982—Week 3 April 2006), Cochrane and Campbell protocols, systematic reviews of qualitative studies, author or reviewer guidelines of major medical journals and reference lists of relevant publications. We identified the terms used to index the relevant articles already in our possession and performed a broad search using those search terms. The electronic databases were searched using terms and text words for research (standards), health services research (standards) and qualitative studies (evaluation). Duplicate checklists and detailed instructions for conducting and analysing qualitative studies were excluded.

*Data extraction.* From each of the included publications, we extracted all criteria for assessing or reporting qualitative studies. Seventy-six items from 22 checklists were compiled into a comprehensive list. We recorded the frequency of each item across all the publications. Items most frequently included in the checklists related to sampling method, setting for data collection, method of data collection, respondent

validation of findings, method of recording data, description of the derivation of themes and inclusion of supporting quotations. We grouped all items into three domains: (i) research team and reflexivity, (ii) study design and (iii) data analysis and reporting. (see Tables 2–4)

Within each domain we simplified all relevant items by removing duplicates and those that were ambiguous, too broadly defined, not specific to qualitative research, or impractical to assess. Where necessary, the remaining items were rephrased for clarity. Based upon consensus among the authors, two new items that were considered relevant for reporting qualitative research were added. The two new items were identifying the authors who conducted the interview or focus group and reporting the presence of non-participants during the interview or focus group. The COREQ checklist for explicit and comprehensive reporting of qualitative studies consists of 32 criteria, with a descriptor to supplement each item (Table 1).

## COREQ: content and rationale (see Tables 1)

### Domain 1: research team and reflexivity

(i) Personal characteristics: Qualitative researchers closely engage with the research process and participants and are therefore unable to completely avoid personal bias. Instead researchers should recognize and clarify for readers their identity, credentials, occupation, gender, experience and training. Subsequently this improves the credibility of the findings by giving readers the ability to assess how these factors might have influenced the researchers' observations and interpretations [13–15].

(ii) Relationship with participants: The relationship and extent of interaction between the researcher and their participants should be described as it can have an effect on the participants' responses and also on the researchers' understanding of the phenomena [16]. For example, a clinician–researcher may have a deep understanding of patients' issues but their involvement in patient care may inhibit frank discussion with patient–participants when patients believe that their responses will affect their treatment. For transparency, the investigator should identify and state their assumptions and personal interests in the research topic.

### Domain 2: study design

(i) Theoretical framework: Researchers should clarify the theoretical frameworks underpinning their study so readers can understand how the researchers explored their research questions and aims. Theoretical frameworks in qualitative research include: grounded theory, to build theories from the data; ethnography, to understand the culture of groups with shared characteristics; phenomenology, to describe the meaning and significance of experiences; discourse analysis, to analyse linguistic expression; and content analysis, to systematically organize data into a structured format [10].

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**Table 1** Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

| No | Item | Guide questions/description |
|----|------|------------------------------|
| **Domain 1: Research team and reflexivity** | | |
| Personal Characteristics | | |
| 1. | Interviewer/facilitator | Which author/s conducted the interview or focus group? |
| 2. | Credentials | What were the researcher's credentials? *E.g. PhD, MD* |
| 3. | Occupation | What was their occupation at the time of the study? |
| 4. | Gender | Was the researcher male or female? |
| 5. | Experience and training | What experience or training did the researcher have? |
| Relationship with participants | | |
| 6. | Relationship established | Was a relationship established prior to study commencement? |
| 7. | Participant knowledge of the interviewer | What did the participants know about the researcher? *e.g. personal goals, reasons for doing the research* |
| 8. | Interviewer characteristics | What characteristics were reported about the interviewer/facilitator? e.g. *Bias, assumptions, reasons and interests in the research topic* |
| **Domain 2: study design** | | |
| Theoretical framework | | |
| 9. | Methodological orientation and Theory | What methodological orientation was stated to underpin the study? *e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis* |
| Participant selection | | |
| 10. | Sampling | How were participants selected? *e.g. purposive, convenience, consecutive, snowball* |
| 11. | Method of approach | How were participants approached? *e.g. face-to-face, telephone, mail, email* |
| 12. | Sample size | How many participants were in the study? |
| 13. | Non-participation | How many people refused to participate or dropped out? Reasons? |
| Setting | | |
| 14. | Setting of data collection | Where was the data collected? *e.g. home, clinic, workplace* |
| 15. | Presence of non-participants | Was anyone else present besides the participants and researchers? |
| 16. | Description of sample | What are the important characteristics of the sample? *e.g. demographic data, date* |
| Data collection | | |
| 17. | Interview guide | Were questions, prompts, guides provided by the authors? Was it pilot tested? |
| 18. | Repeat interviews | Were repeat interviews carried out? If yes, how many? |
| 19. | Audio/visual recording | Did the research use audio or visual recording to collect the data? |
| 20. | Field notes | Were field notes made during and/or after the interview or focus group? |
| 21. | Duration | What was the duration of the interviews or focus group? |
| 22. | Data saturation | Was data saturation discussed? |
| 23. | Transcripts returned | Were transcripts returned to participants for comment and/or correction? |
| **Domain 3: analysis and findingsz** | | |
| Data analysis | | |
| 24. | Number of data coders | How many data coders coded the data? |
| 25. | Description of the coding tree | Did authors provide a description of the coding tree? |
| 26. | Derivation of themes | Were themes identified in advance or derived from the data? |
| 27. | Software | What software, if applicable, was used to manage the data? |
| 28. | Participant checking | Did participants provide feedback on the findings? |
| Reporting | | |
| 29. | Quotations presented | Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? e.g. *participant number* |
| 30. | Data and findings consistent | Was there consistency between the data presented and the findings? |
| 31. | Clarity of major themes | Were major themes clearly presented in the findings? |
| 32. | Clarity of minor themes | Is there a description of diverse cases or discussion of minor themes? |

(ii) Participant selection: Researchers should report how participants were selected. Usually purposive sampling is used which involves selecting participants who share particular characteristics and have the potential to provide rich, relevant and diverse data pertinent to the research question [13, 17]. Convenience sampling is less optimal because it may fail to capture important perspectives from difficult-to-reach people [16]. Rigorous attempts to recruit participants and reasons for non-participation should be stated to reduce the likelihood of making unsupported statements [18].

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**Table 2** Items included in 22 published checklists: Research team and reflexivity domain

| Item | References | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
|  | [26]a | [27]a | [6]b | [28]b | [32]b | [13] | [15] | [14] | [17] | [33] | [34] | [35] | [16] | [19] | [36] | [7] | [37] | [23] | [38] | [39] | [22] | BMJ |
| Research team and reflexivity |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Nature of relationship between the researcher and participants | • | • |  | • | • | • | • | • |  |  |  |  |  | • | • |  |  |  |  | • |  |  |
| Examination of role, bias, influence |  | • |  | • | • | • | • | • | • |  |  |  | • | • | • |  |  |  | • | • |  |  |
| Description of role |  | • |  | • | • | • |  |  |  | • |  |  |  | • |  |  | • |  |  |  | • |  |
| Identity of the interviewer |  | • |  | • |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Continued and prolonged engagement | • | • |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Response to events |  | • |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Prior assumptions and experience |  | • |  | • | • | • | • | • |  | • | • |  | • | • | • |  |  |  | • | • |  |  |
| Professional status |  | • |  |  |  | • | • |  |  |  |  |  | • |  |  |  |  |  |  |  |  |  |
| Journal, record of personal experience |  | • |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Effects of research on researcher |  | • |  |  |  | • |  | • |  |  |  |  |  |  | • |  |  |  |  |  |  |  |
| Qualifications |  | • | • |  |  |  |  |  |  |  |  |  |  |  | • |  |  |  |  |  |  |  |
| Training of the interviewer/facilitator |  | • | • |  | • |  |  |  |  |  |  |  |  | • | • |  |  |  |  |  |  |  |
| Expertise demonstrated |  |  |  |  |  |  |  | • |  |  |  |  |  | • |  |  |  | • |  |  |  |  |
| Perception of research at inception |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Age |  | • |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Gender |  | • |  |  |  | • |  |  |  |  |  | • |  |  |  |  |  |  |  |  |  |  |
| Social class |  | • |  |  |  | • |  |  |  |  |  | • |  |  |  |  |  |  |  |  |  |  |
| Reasons for conducting study |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Sufficient contact |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Too close to participants |  |  |  |  |  |  | • |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Empathy |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | • |  |  |  |  |  |
| Distance between researcher and participants |  |  |  |  |  |  |  | • |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Background |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Familiarity with setting |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | • |

aOther publications, bsystematic review of qualitative studies; BMJ, British Medical Journal—editor's checklist for appraising qualitative research); •, item included in the checklist.

Consolidated criteria for reporting qualitative research

**Table 3** Items included in 22 published checklists: Study design

| Item | References | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [26]a | [27]a | [6]b | [28]b | [32]b | [13] | [15] | [14] | [17] | [33] | [34] | [35] | [16] | [19] | [36] | [7] | [37] | [23] | [38] | [39] | [22] | BMJ |
| Study design | | ● | | | | | | | | | | | | | | | | | | | | |
| Methodological orientation, ontological or epistemological basis | ● | ● | ● | ● | ● | | ● | ● | | | | | | | | | | | ● | | ● | ● |
| Sampling—convenience; purposive | | ● | ● | ● | ● | | ● | ● | ● | | ● | | ● | ● | | | | | | ● | ● | ● |
| Characteristics and description of sample | ● | ● | ● | ● | ● | ● | ● | ● | ● | | ● | | ● | ● | | | ● | | | ● | ● | ● |
| Reasons for participant selection | | ● | ● | | ● | | ● | | ● | | ● | | ● | ● | | | ● | | ● | | ● | |
| Non-participation | ● | ● | ● | ● | ● | | ● | | | | ● | | ● | | | | | | | | ● | |
| Inclusion and exclusion, criteria | ● | ● | | ● | | | | ● | ● | | | | ● | | | ● | | | ● | | | |
| Identity of the person responsible for recruitment | | | | | | | | | ● | | | | | | | | | | | | | |
| Sample size | | ● | ● | ● | | | | | ● | | ● | ● | | | | | | | | | ● | ● |
| Method of approach | ● | | | ● | | | | | | | | | ● | | ● | | | | | | | |
| Description of explanation of research to participants | | | | | | | | | | | | | ● | | | | | | | | | ● |
| Level and type of participation | | | | | | | | | | | | | | | | | | | | | | |
| Method of data collection, e.g. focus group, in-depth interview | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Audio and visual recording | ● | ● | ● | ● | ● | | ● | | | ● | | | | | | | | | | | | |
| Transcripts | | ● | ● | ● | ● | | | | ● | | ● | | ● | | | | | | ● | | ● | ● |
| Setting and location | ● | ● | ● | ● | ● | | ● | | ● | ● | | | ● | | | | | | ● | | ● | ● |
| Saturation of data | ● | ● | | ● | | | | | ● | | | | | | ● | | | | | | ● | ● |
| Use of a topic guide, tools, questions | ● | ● | ● | ● | ● | | ● | ● | | | ● | | | | | | ● | | ● | | ● | ● |
| Field notes | | ● | ● | ● | | ● | | | | | | ● | | ● | | | | | | | | ● |
| Changes and modifications | | ● | | | | | | | | | | | | | | | | | | | | |
| Duration of interview, focus group | | ● | ● | ● | | | | | | | | | ● | ● | | | | | ● | | ● | |
| Sensitive to participant language and views | | | | | | | | | | | | | | | | | | | | | | |
| Number of interviews, focus groups | | | ● | ● | ● | | ● | | | | | | ● | | | | | | ● | | ● | ● |
| Time span | | | ● | ● | | | | | | | | | | | | | | | | | | ● |
| Time and resources available to the study | ● | ● | | ● | | | | | ● | | | | | | ● | | | | | | ● | ● |

aOther publications, bSystematic review of qualitative studies; BMJ, British Medical Journal—editor's checklist for appraising qualitative research; ●, item included in the checklist.

**Table 4** Items included in 22 published checklists: Analysis and reporting

| Item | References [26]ᵃ | [27]ᵃ | [6]ᵇ | [28]ᵇ | [32]ᵇ | [13] | [15] | [14] | [17] | [33] | [34] | [35] | [16] | [19] | [36] | [7] | [37] | [23] | [38] | [39] | [22] | BMJ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Respondent validation | • | • | | | | | | | | | | | | | | | | • | • | | | |
| Limitations and generalizability | • | • | | | | | | | | | | | | | | | | | • | | | • |
| Triangulation | • | • | • | • | • | | | | | | | | | | | | | • | | | | • |
| Original data, quotation | • | • | • | • | • | | | • | • | • | • | | | | | | | | • | | | • |
| Derivation of themes explicit | • | • | • | • | • | | | | | | | | | | | | | | | | | |
| Contradictory, diverse, negative cases | • | • | • | • | • | | | • | | | | | • | | | | | | | | | |
| Number of data analysis | | • | | | | • | | | | | | | | | | | | | | | | |
| In-depth description of analysis | • | • | | | | | | | | | | | | | | | | | • | | | • |
| Sufficient supporting data presented | • | • | • | • | • | | • | • | • | • | • | | • | | | | | | | | | |
| Data, interpretation and conclusions linked and integrated | • | • | • | • | • | | • | • | • | • | • | • | • | | | • | • | • | • | • | | • |
| Retain context of data | | | | | | | | | | | | | | | | | | | | | | |
| Explicit findings, presented clearly | • | • | • | • | • | • | • | • | • | • | • | • | • | • | | • | • | • | • | • | | • |
| Outside checks | • | • | | | | | | | | | | | | | | | | | | | | |
| Software used | • | • | | | | | | | | | | | | | | | | | | | | |
| Discussion both for and against the researchers' arguments | | • | | | | | • | | | | • | • | | | • | | | | | | | |
| Development of theories, explanations | | • | | | | | • | | | | | | | | | | | • | • | | | • |
| Numerical data | | • | | | | | | | | | • | | | | | | | • | • | • | | • |
| Coding tree or coding system | | | | | | | | | | | | | | | | | | | | | | |
| Inter-observer reliability | | | | | | | | | | | | | | | | | | | | • | • | |
| Sufficient insight into meaning/perceptions of participants | | | | | | | | | | | | | | | | | | | | | | • |
| Reasons for selection of data to support findings | | | | | | | | • | | | | | | • | | | | | | | | |
| New insight | | | | | | | | | | • | | | | | | | | | | | | |
| Results interpreted in credible, innovative way | | | | | | | | | | | | | • | | | | | | | | | |
| Eliminate other theories | | | | | | | | • | | | | | | | | | | | | | | |
| Range of views | | | | | | | | | | | | | | | | | | | | | | |
| Distinguish between researcher and participant voices | | | | | | | | | | | | | | | | | | | | | | |
| Proportion of data taken into account | | | | | | | | | | | | | | | | | | | | | | |

ᵃOther publications, ᵇSystematic review of qualitative studies; BMJ, British Medical Journal—editor's checklist for appraising qualitative research. •, item included in the checklist.

Consolidated criteria for reporting qualitative research

Researchers should report the sample size of their study to enable readers to assess the diversity of perspectives included.

(iii) Setting: Researchers should describe the context in which the data were collected because it illuminates why participants responded in a particular way. For instance, participants might be more reserved and feel disempowered talking in a hospital setting. The presence of non-participants during interviews or focus groups should be reported as this can also affect the opinions expressed by participants. For example, parent interviewees might be reluctant to talk on sensitive topics if their children are present. Participant characteristics, such as basic demographic data, should be reported so readers can consider the relevance of the findings and interpretations to their own situation. This also allows readers to assess whether perspectives from different groups were explored and compared, such as patients and health care providers [13, 19].

(iv) Data collection: The questions and prompts used in data collection should be provided to enhance the readers' understanding of the researcher's focus and to give readers the ability to assess whether participants were encouraged to openly convey their viewpoints. Researchers should also report whether repeat interviews were conducted as this can influence the rapport developed between the researcher and participants and affect the richness of data obtained. The method of recording the participants' words should be reported. Generally, audio recording and transcription more accurately reflect the participants' views than contemporaneous researcher notes, more so if participants checked their own transcript for accuracy [19–21]. Reasons for not audio recording should be provided. In addition, field notes maintain contextual details and non-verbal expressions for data analysis and interpretation [19, 22]. Duration of the interview or focus group should be reported as this affects the amount of data obtained. Researchers should also clarify whether participants were recruited until no new relevant knowledge was being obtained from new participants (data saturation) [23, 24].

### Domain 3: analysis and findings

(i) Data analysis: Specifying the use of multiple coders or other methods of researcher triangulation can indicate a broader and more complex understanding of the phenomenon. The credibility of the findings can be assessed if the process of coding (selecting significant sections from participant statements), and the derivation and identification of themes are made explicit. Descriptions of coding and memoing demonstrate how the researchers perceived, examined and developed their understanding of the data [17, 19]. Researchers sometimes use software packages to assist with storage, searching and coding of qualitative data. In addition, obtaining feedback from participants on the research findings adds validity to the researcher's interpretations by ensuring that the participants' own meanings and perspectives are represented and not curtailed by the researchers' own agenda and knowledge [23].

(ii) Reporting: If supporting quotations are provided, researchers should include quotations from different participants to add transparency and trustworthiness to their findings and interpretations of the data [17]. Readers should be able to assess the consistency between the data presented and the study findings, including the both major and minor themes. Summary findings, interpretations and theories generated should be clearly presented in qualitative research publications.

## Discussion

The COREQ checklist was developed to promote explicit and comprehensive reporting of qualitative studies (interviews and focus groups). The checklist consists of items specific to reporting qualitative studies and precludes generic criteria that are applicable to all types of research reports. COREQ is a comprehensive checklist that covers necessary components of study design, which should be reported. The criteria included in the checklist can help researchers to report important aspects of the research team, study methods, context of the study, findings, analysis and interpretations.

At present, we acknowledge there is no empiric basis that shows that the introduction of COREQ will improve the quality of reporting of qualitative research. However this is no different than when CONSORT, QUOROM and other reporting checklists were introduced. Subsequent research has shown that these checklists have improved the quality of reporting of study types relevant to each checklist [5, 25], and we believe that the effect of COREQ is likely to be similar. Despite differences in the objectives and methods of quantitative and qualitative methods, the underlying aim of transparency in research methods and, at the least, the theoretical possibility of the reader being able to duplicate the study methods should be the aims of both methodological approaches. There is a perception among research funding agencies, clinicians and policy makers, that qualitative research is 'second class' research. Initiatives like COREQ are designed to encourage improvement in the quality of reporting of qualitative studies, which will indirectly lead to improved conduct, and greater recognition of qualitative research as inherently equal scientific endeavor compared with quantitative research that is used to assess the quality and safety of health care. We invite readers to comment on COREQ to improve the checklist.

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**3. Demographic indicators of all Union Councils of Tehsil Gujar Khan**

# Demographic indicators of all Union Councils of Tehsil Gujar Khan

| S NO | Name of Union Council | Population – Both Sexes | Male % | Female % | Literacy Ratio 10+ (%) | Primary but below matric – Male % | Primary but below matric – Female % | Matric & above – Male % | Matric & above – Female % | Housing Units by Types – Total | Pacca % | Semi Pacca % | Kacha % | Piped water % | Hand Pump % | Well % | Electricity % | Kerosene oil % | Wood %age | Kerosene oil %age | Gas %age |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | BEWAL | 19845 | 47.62 | 52.38 | 62.1 | 16.87 | 10.70 | 6.561 | 3.10 | 3144 | 94.43 | 4.20 | 0.10 | 5.41 | 4.23 | 29.99 | 91.13 | 8.65 | 93.16 | 1.37 | 4.83 |
| 2 | BHADANA | 14502 | 48.32 | 51.68 | 62.4 | 17.78 | 11.32 | 5.668 | 2.61 | 2256 | 66.27 | 29.43 | 4.30 | 4.03 | 15.12 | 27.17 | 96.14 | 3.50 | 86.57 | 3.55 | 9.04 |
| 3 | CHANGA BANGIAL | 15700 | 47.41 | 52.59 | 54.2 | 15.49 | 9.57 | 5.28 | 1.92 | 2511 | 82.00 | 14.34 | 3.66 | 8.60 | 22.62 | 14.18 | 91.88 | 6.97 | 92.19 | 2.51 | 3.46 |
| 4 | DOLTALA | 5757 | 46.60 | 53.40 | 60.1 | 16.21 | 10.06 | 4.151 | 3.23 | 931 | 96.67 | 2.36 | 0.97 | 0.75 | 23.42 | 34.26 | 85.71 | 14.18 | 38.35 | 0.86 | 3.97 |
| 5 | DEVI | 11990 | 45.48 | 54.52 | 60.6 | 16.45 | 10.68 | 5.079 | 3.21 | 978 | 161.96 | 36.91 | 3.37 | 35.28 | 23.31 | 54.81 | 178.32 | 23.93 | 176.38 | 0.72 | 5.73 |
| 6 | GULIANA | 14498 | 49.43 | 50.57 | 70 | 19.99 | 13.06 | 6.987 | 4.08 | 2439 | 91.59 | 7.38 | 1.03 | 7.83 | 24.72 | 21.77 | 91.14 | 8.41 | 73.19 | 8.61 | 6.97 |
| 7 | GUNGRILA | 13576 | 49.83 | 50.17 | 60.5 | 18.13 | 9.91 | 5.701 | 2.03 | 2065 | 59.08 | 37.97 | 2.95 | 9.54 | 28.96 | 10.07 | 94.33 | 5.28 | 78.06 | 7.75 | 3.58 |
| 8 | JHAND MAHLO | 14705 | 48.23 | 51.77 | 62.8 | 18.22 | 10.60 | 4.529 | 2.10 | 2380 | 74.12 | 23.61 | 2.27 | 8.15 | 18.24 | 21.97 | 91.30 | 8.70 | 77.44 | 3.07 | 2.44 |
| 9 | JARMOT | 16 | 46. | 53. | 65. | 16. | 11. | 5.7 | 3.3 | 2 | 68. | 27.76 | 4.1 | 17.54 | 16.83 | 16. | 79.1 | 20.58 | 91.8 | 2.14 | 5.3 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | KALAN | 757 | 47 | 53 | 2 | 23 | 82 | 11 | 4 | 7999 | 06 | | 8 | | | 43 | 7 | | 2 | | 6 |
| 10 | JATLI | 13606 | 46.38 | 53.62 | 70.3 | 17.47 | 11.44 | 6.857 | 6.53 | 2275 | 85.49 | 11.87 | 2.64 | 5.45 | 26.15 | 30.33 | 90.20 | 8.48 | 57.98 | 1.10 | 2.11 |
| 11 | JHONGAL | 10288 | 46.49 | 53.51 | 65.1 | 17.29 | 10.69 | 5.735 | 5.34 | 1778 | 86.05 | 9.06 | 4.89 | 5.51 | 31.33 | 14.57 | 76.15 | 23.51 | 82.85 | 0.67 | 3.88 |
| 12 | KALIAMAWAN | 13661 | 48.21 | 51.79 | 67.5 | 18.78 | 12.43 | 7.408 | 3.59 | 2261 | 81.34 | 16.36 | 2.30 | 5.22 | 9.38 | 27.95 | 94.16 | 3.58 | 77.22 | 3.41 | 7.03 |
| 13 | KANIT KHALIL | 15645 | 46.41 | 53.59 | 67.5 | 18.03 | 12.97 | 6.526 | 4.07 | 2585 | 89.71 | 8.86 | 1.43 | 10.52 | 28.20 | 20.97 | 94.55 | 5.07 | 88.12 | 1.20 | 0.93 |
| 14 | KARUM ILYAS | 14091 | 46.56 | 53.44 | 64.4 | 17.58 | 11.50 | 5.755 | 3.83 | 2379 | 73.56 | 23.71 | 2.73 | 17.32 | 17.74 | 16.98 | 93.78 | 5.46 | 87.64 | 1.13 | 1.09 |
| 15 | KAUNTRILA | 12702 | 45.69 | 54.31 | 64.7 | 17.21 | 12.23 | 6.471 | 4.45 | 2115 | 64.82 | 34.18 | 0.99 | 3.83 | 20.71 | 29.93 | 92.86 | 6.90 | 96.93 | 0.57 | 0.43 |
| 16 | KURI DOLAL | 15613 | 48.50 | 51.50 | 62.7 | 17.95 | 10.41 | 5.944 | 2.34 | 2396 | 88.31 | 9.89 | 1.79 | 6.14 | 9.10 | 23.62 | 96.08 | 3.34 | 91.99 | 2.25 | 2.05 |
| 17 | MANDRA | 14015 | 49.93 | 50.07 | 66.6 | 18.56 | 10.72 | 6.6 | 4.50 | 2127 | 93.46 | 5.12 | 1.41 | 17.25 | 9.26 | 21.63 | 96.47 | 2.35 | 79.83 | 4.00 | 8.84 |
| 18 | MANGOT | 13520 | 46.86 | 53.14 | 63.5 | 16.09 | 10.70 | 6.08 | 3.76 | 2381 | 72.83 | 24.28 | 2.90 | 15.33 | 18.06 | 15.75 | 94.41 | 5.12 | 92.61 | 0.50 | 3.15 |
| 19 | MANKIALA BRAHMNA | 12370 | 49.22 | 50.78 | 62.7 | 17.98 | 10.65 | 4.487 | 3.29 | 1994 | 92.73 | 3.56 | 3.71 | 2.16 | 10.68 | 41.22 | 90.22 | 8.58 | 64.69 | 10.23 | 14.29 |
| 20 | MATWA | 12356 | 48.09 | 51.91 | 62.4 | 16.25 | 10.34 | 5.932 | 2.89 | 1879 | 76.32 | 19.43 | 4.26 | 4.36 | 26.82 | 25.07 | 94.47 | 5.06 | 75.52 | 1.44 | 18.25 |
| 21 | MOHRA NOORI | 1438 | 46.90 | 53.10 | 64.8 | 17.29 | 11.52 | 5.546 | 4.03 | 24 | 61.75 | 36.13 | 2.13 | 14.67 | 12.96 | 30.92 | 91.13 | 7.33 | 76.25 | 0.71 | 4.21 |

| | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8 | | | | | | | | 2000 | | | | | | | | | | | |
| 22 | PANGRAN KALAN | 13419 | 46.12 | 53.88 | 57.9 | 15.54 | 9.87 | 4.561 | 2.89 | 2344 | 75.09 | 23.51 | 1.41 | 21.63 | 24.45 | 20.56 | 93.81 | 6.06 | 78.54 | 0.43 | 1.02 |
| 23 | QAZIAN | 15417 | 47.28 | 52.72 | 62 | 15.76 | 9.67 | 4.994 | 2.44 | 2499 | 73.27 | 25.33 | 1.40 | 9.48 | 16.61 | 18.69 | 92.32 | 7.36 | 94.20 | 2.28 | 2.44 |
| 24 | RAMAN | 16053 | 46.66 | 53.34 | 58.9 | 16.59 | 9.33 | 5.401 | 3.33 | 2722 | 88.35 | 9.00 | 2.65 | 12.45 | 22.78 | 22.23 | 94.27 | 5.69 | 79.79 | 0.77 | 4.45 |
| 25 | SAHNG | 18468 | 47.42 | 52.58 | 64.9 | 17.21 | 11.27 | 5.334 | 2.67 | 2971 | 85.06 | 12.55 | 2.39 | 10.27 | 20.03 | 11.71 | 95.49 | 4.21 | 92.43 | 1.51 | 3.03 |
| 26 | SAYYAD | 11719 | 46.10 | 53.90 | 59.5 | 16.32 | 10.86 | 4.523 | 2.12 | 2086 | 89.45 | 6.57 | 3.98 | 15.53 | 16.25 | 24.40 | 91.75 | 5.70 | 69.94 | 0.81 | 2.11 |
| 27 | SUI CHEEMIAN | 17129 | 46.80 | 53.20 | 58.2 | 17.40 | 9.29 | 4.904 | 1.84 | 2764 | 84.08 | 14.36 | 1.56 | 5.46 | 9.59 | 22.79 | 94.03 | 5.90 | 91.53 | 0.80 | 2.60 |
| 28 | SUKHO | 15154 | 46.44 | 53.56 | 70.3 | 17.18 | 12.97 | 7.378 | 5.30 | 2467 | 77.38 | 18.77 | 3.85 | 18.08 | 24.77 | 25.78 | 95.22 | 4.42 | 62.63 | 1.99 | 13.54 |
| 29 | NARALI | 15353 | 46.81 | 53.18 | 65.3 | 17.16 | 11.92 | 5.419 | 3.11 | 2523 | 82.96 | 14.78 | 2.26 | 1.23 | 30.12 | 15.30 | 92.71 | 7.09 | 82.36 | 2.62 | 4.68 |
| 30 | THATHI | 14563 | 47.76 | 52.24 | 48.2 | 16.10 | 7.04 | 3.269 | 0.86 | 2344 | 93.05 | 3.37 | 3.58 | 10.32 | 15.96 | 8.06 | 47.40 | 52.43 | 96.16 | 1.02 | 1.49 |

**4.  Qualitative Research Training Workshop Module for "SPRING"**

**Training Workshop Module**

**Objectives**

To explain the objective(s) of SPRING project

To introduce qualitative research methodology and components

To impart the necessary skills in research techniques and data collection

**Target Group** 8 researchers

**Duration 3** days

**Venue** HDRF office

**Reading materials** Guides in Urdu, Information sheet, Consent Form, Project summary

**Equipment / Material required:** Laptop, LCD Projector, Screen, Audio recorder, Paper, pencils, ball pens, White Board, markers.

**Facilitators:** Dr Shamsa,Dr Siham,Mr Ikhlaq Ahmed

**Sessions/ Topics**

Day One

Session 1: Introduction of participants dr shamsa

Session 2: Overview of 'SPRING' programme and components of intervention dr siham

Session 3: Overview and components of qualitative research dr zaeem

Day two

Session 4: Orientation on rapport building and research ethics mr ikhlaq

Session 5:  Detailed discussions on FR Guides  shamsa

Day Three

Session 5 (Continued):  Detailed discussions on FR Guides zaeem / siham

Session 6:  Daily data Synthesis and debriefing session shamsa

**Expected Output/Out Come**

The participants at the end of the training programme would develop better understanding on SPRING Programme; importance of undertaking qualitative research in SPRING and at the same time they would also gain the hands on experience in using qualitative guides and hence household level research.

**Session 1:** Participants Self Introduction

**Time required**: Twenty Minutes

**Objective(s)** : Participants get familiar with each other. Facilitator(s) would understand the research background of participants.

**Session content(s)**:   Participant(s)   educational   background;   Involvement   in research studies; and Core capacities / skills

**Methodology**: Self introduction of participant(s) in large group

**Description/Process**

- Facilitator(s) announces that each participant has to introduce themselves to the larger group.

- While introducing, apart from general information, he/ she has to talk about his/ her educational background and extent of involvement in research studies.

- The facilitator(s) has to develop some understanding on each of the participant in-terms of their communication style and experience in research studies.

- Based on the above, the facilitator(s) can nurture them in the forth-coming sessions

**Session 2: Overview of 'SPRING' and its** components

**Time required:** sixty minutes

**Objective(s):** To provide knowledge about the overall SPRING Programme.

To provide an understanding of the components of SPRING Intervention

**Session content(s) :** The overall aims and objectives of SPRING project, Various institutions/ partners involved in SPRING Project, Expected outputs/ results/ benefits out of the project, Provide a background and understanding of the following components of SPRING Intervention

o Maternal psychosocial health

o Maternal nutrition

o Child nutrition

o Child Development

o Promoting existing child survival interventions

**Methodology:** Interactive closed Workshop (power point presentation)

**Description/Process:**

- The facilitator(s) has to explain each slide of the PowerPoint presentation in simple language.

- The facilitator will encourage interaction with the participants for a better understanding

- The facilitator(s) during the presentation may ask the questions to the participants and/ or

  Clarify their doubts

**Session 3: Overview and components of Qualitative research**

**Time required:** 120 minutes

**Objective(s) :** To impart knowledge on the methodology of qualitative research

To discuss the various techniques used for data collection in the SPRING qualitative research

  To give an understanding of CBT and Its role in qualitative research

**Session content(s) :**

- Basic skills and knowledge for qualitative research

- Basic skills and knowledge for Individual techniques used for SPRING qualitative research including in depth interviews, focus group discussions, Observations, shadowing, and narratives.

- CBT and Its role in the SPRING qualitative research, providing a link of this information to the development of an intervention so that the researcher is cognizant with the information required from the qualitative phase

**Methodology:** PowerPoint Presentation

**Description/Process:**

- The facilitator(s) has to explain each slide of the PowerPoint presentation in simple language.

- Emphasis should be given on the scientific methodology of various technique and how the standardization and inter-rater reliability can be achieved

- The facilitator(s) at the end of the presentation may ask the questions to the participants and/ or clarify their doubts

**Session 4: Orientation on rapport building and research ethics**

**Time required:** 60 minutes

**Objective(s) :** To discuss the techniques of rapport building/ consent

To discuss the concept of research ethics

**Session content(s)**

- Rapport Building Techniques

- Consent methodology

- Ethical issues including confidentiality

**Methodology:** Role Play

**Description/Process:**

- Participants might be using their own methods and/ or techniques to build rapport with the community, hence, this session helps to crystallize their experiences and learn from it. The session methodology will be as follows

- A "Role Play" is executed by assigning roles of respondents and interviewer.

- The researchers have to introduce themselves to the respondents as in real life.

- The respondents pose various difficult situations, eg too many people in the room; intrusive husband/mother in law; etc. This will be followed by discussions.

- Facilitator has to explain the importance of rapport building. Why to build rapport, with whom to build rapport, role of LHW etc.

- Facilitator has to explain how personal behaviour (personal traits) plays major role in rapport building.

- Facilitator will explain in detail the consent process and ethical issues

- Facilitator will share the information sheet and consent form with the participants

- Facilitator will enquire about the set of FAQs by the community (thus is to prepare our team to have similar responses to the community's questions about spring or our agenda!)

- While summing up the session, the facilitator should clarify the doubts of the Participants and/ or pose questions to test their understanding levels.

**Session 5:  Detailed discussions on FR Guides**

**Time required:** 280 minutes

**Objective(s):** Participants would understand the guides

Participants would know the techniques for collection of data

Participants would enact conducting actual interviews (by role playing in group settings)

**content(s) :** To discuss the each guide  used for data collection  in the SPRING qualitative research individually including the following

- o Mother guide in various periods

- o Narratives

- o Observations

- o Grandmother's guide

- o Fathers guide

- o CBA guide

- o CBA Supervisor's Guide

- o Shadowing

- o District Program Personnel Guide

- o Health Care Provider's Guides

- o Asset questionnaire

  Role play for collection of information

  **Methodology:** Closed discussion and Role Play

  **Description/Process**:

- Briefly explain the purpose of collecting information from various sources ( women, CBA, Husbands etc.)

- Discuss each guide interactively

- Conduct the Role Play (on the process of collecting the information ) as detailed below

- o Divide the entire participants into two small groups

- o Assign the roles of moderator; recorder/ note taker and respondents.

- o The moderator will facilitate discussions using the guide; the note taker has to take verbatim notes and audio recording of discussions and the respondents have to respond to the questions.

- Verbatim notes will be discussed in detail to find any omissions and to ensure the quality of the data

- The groups need to fill the information through focused discussions by playing their roles.

- The filled guides need to be exchanged between groups. Ask each group to identify the mistakes

- At the end of the exercise, review the process and identify the gaps; problems etc in the large group

- The facilitator should sum up the whole session and if required he/she may have to explain the different steps involved in collecting information the questionnaire

**Session 6: Daily data Synthesis and Debriefing session**

**Time required**: 30 minutes

**Objective(s)** : Participants would understand the process of debriefing exercise

**content(s) :** To discuss the structure and the key agenda of the debriefing session including the process of discussing each day's and each respondent's findings, quality of the data and how to sort out problems

**Methodology:** Interactive discussion

**Description/Process:**

• The facilitator will share the structure and the key agenda of the debriefing session by discussion

# 5. Likert scale

# Likert Scale

*Rating by Lady Health Worker*:

*On the scale given below, how would you rate the level of prosperity of this household, relative to the overall prosperity in your area?*

**Richest     1          2          3          4        5    Poorest**
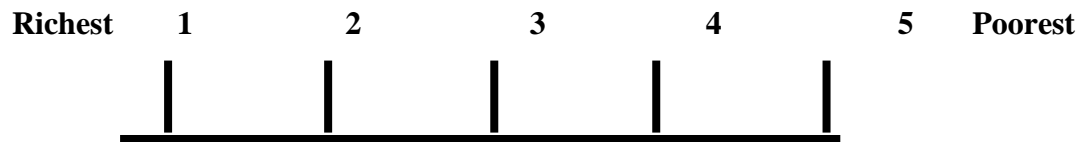
**6. Data collection tools for the qualitative study**

## A. INTERVIEW GUIDE WITH PREGNANT WOMEN

*Greetings! We are...(name of Researcher) **and** ..(name of Researcher) **from** ...(name of organization). **We are collecting information on how mothers and families take** care of their children's growth and development. This information will be used to **help other families in caring for their children.***

***Thank you very much for your time.***

***Mothers and families in our part of the world know a lot about how to look after children and to ensure that they grow up to be healthy and bright. We would like to learn from you about the care giving practices followed by families for the mother and her baby, and what you believe will make your child healthy and intelligent.***

***Do you feel ready to have such a discussion?***

[Guide for interviewer]: Start by asking about how the mother feels generally during her pregnancy.]

[Guide for interviewer: If the mother has health problems that need medical attention, refer her to the LHW after finishing the interview.]

**Q 1. We will start with your own health. Would you like to tell us how you are feeling these days?**

Probes:

- Ask about ante-natal care check-ups and tetanus toxoid injections.
- Ask about psychological wellbeing (e.g. what are her main concerns and worries. what makes her happy?)

*II-Questions about maternal nutrition*

**Q 2. We would now like to ask you about your diet. What type and quantity of food do you think a pregnant woman like you should take? Has anyone given**

**you information about what you should eat at this stage? If yes, who and what? How same or different is it to your earlier diet- same/less/more?**

Probes:

- Ask about the information given by LHW? Whether the mother has increased the amount of food? If not increased food intake, why not?

**Q 3. If the respondent is following health worker's advice about balanced diet, then ask her-Are there some mothers who are unable to take a healthy balanced diet. What do you think the reasons are? Do you have any suggestions how they could do this?**

Probes:

- Explore whether poverty, lack of knowledge are the reasons in her mind.

- Explore food fads (e.g. egg, fish and beef are *garam* (hot) foods, or pulses, yogurt, lassi are baadi (useless) foods.)

- Are there some who hesitate to take food in front of others,? What are the reasons? What would be the best way to take food in such conditions?

**Q 4: How often does the LHW meet you? Where (at respondent's home, or at health house)? What information does she give you about taking care of yourself during pregnancy and in helping you prepare to take care of the new-born? Has she spoken to anyone else in your family like husband or mother-in-law about the care you need and preparation for delivery?**

Probes:

- Ask whether  information received on importance of taking rest, regular ANC, nutrition, danger signs, preparation for delivery, child's first feed, breast feeding , family engagement etc

**Q 5: Has your health worker given you iron (Black tablets) to take? What do you think these tablets are for? Are you using these tablets? If not, why?**

**Q 6: Tell us about your rest and relaxation. Do you get time for rest during the day?**

Probes:

- Does she think rest is important?
- How she manages to get rest?
- Are other pregnant women able to do this? If she is not able to but others are, how do they manage?
- Can other family members help? What would be the best way to achieve this?
- Explore the perception of woman about the significance of her rest for unborn child's health or her health

**Q 7: We would now like to ask you about your family. How are your family members responding to you during pregnancy? How are you and your family preparing for your baby's birth?**

Probes:

- Explore whether the woman has a sense of social support from family members or seems detached?
- Explore about the attitude and role of Husband.
- Who is decision maker at your home?
- Ask about the planned place of delivery i.e. hospital or home.
o If home, who is going to be the birth attendant?
o Has the family arranged money and transport, and identified hospital in case they have to go there?

**Q 8: Let us talk about the time immediately after the birth of your baby. Have you and your family members decided who is going to be around you at the time of delivery and support you in taking care and feeding the baby especially for the first time (whether at home or in hospital)?**

[Guide for interviewer: In immediate post-delivery period, the mother is usually exhausted and baby's suckling weak. Both require someone who could provide

support to mother and baby for successful breastfeeding. Has the family considered this?]


### III- Questions about child's nutrition

**Q 9: Let us talk about child who is going to be born. How do you understand it gets its nourishment? How do you think the baby's nourishment is related to the food that you take?**

[Guide for interviewer: Explore whether she thinks that baby is growing automatically or whether her food intake has some relationship with it (e.g., physical or cognitive health]

Probes:

- Explore her thoughts about growth and nutritional requirement of the baby to be born. What is she doing about it?

**Q 10. Now let us talk about the baby's nourishment after it is born. What do you think will happen when your baby will be born and will need food? Have you thought about the time and type of your baby's first feed?**

Probes:

- Explore whether a decision about breastfeeding has been made or not?
- Explore about the likelihood of feeding rituals (e.g. *ghutti,* discarding colostrum) and mother's perceptions about its appropriateness.
- When a mother hugs the baby for the first time or when she should?
- Does a mother feel attachment with the child while breast feeding? If yes, how? If not, why not?

**Q 11: Up to what time are you going to give only breast milk to your baby? Does mother have any plans for weaning period (time to wean, weaning foods)?**

Probes:

- If mother does not plan to stick to recommended period for exclusive breastfeeding (i.e. 6 months) what factors will influence her to start giving other milk or food to her baby?

### *IV- Questions about child's development*

**Q12. Tell us something about the baby that is going to be soon born. Do you think your physical or mental situation affects the baby? What happens to this baby when you are happy or sad?**

Probes:

- Does she take care of herself both mentally and physically because she thinks it will affect the baby, or not?

**Q 13. We previously discussed your baby's nutrition after birth. Do you think there are other things besides food that a baby needs for its development?**

**Q 14: Do babies like to play? Can you tell us some activities that parents of a new-born or young infant can do to play with their child?**

[Guide for interviewer: Help the mother understand that eye contact, making faces or making the child smile are games for this age group. Listen to her if she has something to add to this list.]

**Q 15: How do you think playing is good for the baby's development?**

**B. Interview guide with mothers of infants – 0-6months**

*Greetings! We are...(name of Researcher)and ...(name of Researcher) from ...(name of organization). We are collecting information on how mothers and families take* **care of their children's growth and development. This information will be used to** *help other families in the bringing-up of their children.*

*Thank you very much for your time.*

### *I- Opening questions*

*Mothers and families in our part of the world know a lot about how to look after children and to ensure that they grow up to be healthy and bright. We would like to*

*learn from you about the care giving practices followed by families for the mother and her baby, and what you believe will make your child healthy and intelligent.*

[Guide for interviewer: Start by asking about how the mother feels generally these days.]

[Guide for interviewer: If the baby has health problems that need medical attention, refer her to the CBA. Refer immediately if the problem is of urgent nature.]

**Q 1: We will start with your own health. Would you like to tell us how you are feeling these days?**

Probes:

- Explore the common health problems like feeling weak, aches and pains, any persistent discharge, fever etc.
- Ask about mental wellbeing e.g. what are her main concerns and worries after having the baby?

*II- Questions about baby's health & nutrition*

**Q 2: Now let us talk about your baby. How is your baby's health?**

[Guide for interviewer: Inquire if required, whether it is a baby girl or boy? Explore the newborn/infant is in good health and has no physical problems like fever, difficulty in feeding, rashes etc.]

**Q 3: Can you tell us about the care of the baby in the first few days of life. When did the baby receive first bath?**

Probes:

- Explore neonatal care practices

**Q 4: What was the first feed that you gave your baby? How much time after delivery was the first feed given?**

Probes:

- Was colostrum given or discarded?

- If breast milk was the first feed, who helped mother and baby to initiate this process?
- Explore whether something else was given as the first feed (prelacteals like *ghutti* was given-who gave the prelacteal feed**?)**

**Q 5: Are you breastfeeding your baby these days? Are there any problems in breastfeeding? If so, what do you think can be done about them? Do you give any other milk or fluid in addition to breast milk? How do you think breastfeeding helps with the baby's development?**

Probes:

- How many times does the mother breast feed her child in day/night? If not in night why?
- When a mother feeds her child?
- Explore whether the mother is exclusively breastfeeding (i.e. giving not even water) or not? If not, why and what other things she is using (e.g. tin milk, cow or buffalo's milk, tea, honey water, gripe water etc) to feed the baby.
- Does she think infant needs more than breast milk or she has other pressing demands (e.g. workload) and no support around her?
- Explore whether mothers are convinced about exclusive breastfeeding or not? Also explore factors like perceived insufficiency of milk, domestic workload etc that may lead to discontinuation.
- Does mother feels connection with the child? How does she develop it? If not then why not?

**Q 6: Has mother started to wean? If not, explore when she plans to wean?**

 Probes:

- Explore when mother began to wean? What weaning foods is she using?

**Q 7: How will you come to know that your child is unwell? If your child is unwell, where do you seek help?**

Probes:

- Apart from common illnesses that might affect the child's development, explore how do mothers come to know that their child is malnourished and what do they do for treatment.
- Explore situations when a child is treated at home, when help is sought from a health worker, who is the health worker, where is the health facility, how do they travel to the health facility, who made the decision to seek help-find out who all were present at that time at home, who said what and what was finally done-& work backwards to understand who was the decision maker (eg. *You, father, mother in law*).

[Guide for interviewer: May take an example of what happened last time the child was sick]

### III. Questions regarding mother and family

**Q 8: You are looking after the baby and doing domestic chores as well.**

- **How do you manage?**
- **Do you feel you are able to fully look after your baby? If not, what are the main problems?**
- **How do you think these problems could be overcome?**

[Guide for interviewers: Listen to main problems in her mind. Explore whether the mother feels that she has to perform too many duties and whether it is bringing dissatisfaction about parenting in her. Ask her about her role as a mother, main care giving responsibilities, daily challenges. Explore whether she thinks support from other family members could help her deal with this situation. From whom does she seek support?]

**Q 9: Tell us about your family members, how are they dealing with the new baby and you?**

[Guide for interviewer: Focus on first month of life and then subsequent period if possible. Explore whether and how husband, mother-in-law, father-in-law and other family members support the mother and infant.]

- **Tell us about the attitude and role of your husband in taking care of you and your child?**
- **Explore the views of family (husband and wife) about child spacing, and it affect on earlier children' development.**
- **Who usually does the following activities for the child- cooking, feeding, bathing, toileting, washing the child's clothes, attending to the child when s/he cries?**
- **What activities does the father/grandparents/siblings do with your child?**
- **Who makes decisions about what you feed your child? When your child seeks care?**

## IV- Questions regarding health system & family interaction

**Q 10: Do you receive any information/ service from LHw with respect to child care and child's proper nutrition, growth and development? What? When?**

Probes:
- Explore information given about child's first feed, breast feeding, complementary feeding, and supplementary nutrition for mother from LHW. Which of these have you found useful, and practice it?
- Explore about home visits-number of visits, content, family members involved in home visit, duration?

**Q 11: From where else do you get information about child care? Eg. Doctor,. Have you adopted any of the advice/ information given by them? If yes, which ones, if no why not?**

## V- Questions about child's development

**Q 13: Apart from feeding the child well, what else can be done to ensure proper growth and development of the child? Can you tell us about any particular care giving practices that are very important for infants and young children?**

Probes:

- Explore whether mother feels that she can do something for her baby, or believes in *Qismet* (fatalism)?

- Explore what she thinks can be done? Explore baby massage, head shaping, swaddling, *kajal*, early feeding beliefs.

[Guide for interviewers: Ask at what age these practices happen, why they are important]

**Q 14: Your child is still young but have you ever felt s/he communicates with you? How does the child communicate and how do you respond to the gestures?**

Probes:

Explore whether the mother thinks that child's touch, vocalization, crying, giggles etc are ways of communicating or not? whether she responds to these gestures? If yes, how? If not, why not?

**Q15: How does your child communicate its needs and emotions to you?**

[Guide for interviewer: If needed you can you examples such as how do you know your child is hungry/happy/sad/thirsty/angry/wants to be carried]

**Q16: How do you make your child smile? How your child makes you smile?**

**Q 17: Your child is ----months old now. Can you please tell us some of the things/acts that your child has learnt up to this time? Are you satisfied with what your child has learnt till now or do you think the child should have learnt more?**

Probe:

- Explore whether the mother has noticed major milestones (appropriate for her child's age) like grasping, reaching.

- What can you do to help promote your child's development?

**Q 18: Let's talk about playful activities that children do. Does your child play with you, how do you respond when s/he does? When do you play with your child?**

Probes:
- Explore whether mother thinks young infants like hers can play or not? If not, why?
- What things does her child play with?
- What pictures/things in the surrounding environment she shows to her child (e.g. rattles, cow, tree, cycle)?
- Hoe other members in the family keep the child busy?

[Guide: We are trying to understand what toys are in the home- these might be shop bought items like balls or dolls, they might be kitchen utensils or homemade toys]

**Q 19 Do you think a child learns anything when she/he plays? If yes, what? Can you give some examples?**

Probes:
- Explore whether the respondent mother relates play activities with the physical growth and mental development or not?

**Q 20: How do you show your child you are pleased with her?  Can you share an example of the last time you showed your child you were pleased with her?**

**Q 21: Have you ever become angry with your child? Why? What did you do when your child made you angry?**
- When your child does not sleep, what do you do?
  [Guide for interviewer: Explore words such as *pareshan, tension, thang*]

**Q 22:** **In your community on what occasion do people come together? When/where can we seek their support for any work we may want to do in your community? Who are the key influential people in your community?**

**Q 23: We would now like to ask you about your diet. Has anyone given you information about what you should eat at this stage? If yes, who and what? How same or different is it to your earlier diet- same/less/more?**

Probes:

- Ask about the information given by LHW? Whether the mother has increased the amount of food as per health worker's advice? If not increased food intake, why not?
- Does she eat the supplementary nutrition provided at the anganwadi? If no, why not?

**Q24: If the respondent herself follows health worker's advice about balanced diet, then ask her Some mothers appear to be unable to follow the health worker's advice about a healthy balanced diet. What do you think the reasons are?**

Probes:

- Explore (even if according to the mother, the health worker has never talked about it) whether poverty, lack of knowledge are the reasons in her mind.
- Explore food fads e.g. egg, fish and beef are *garam* (hot) foods, or pulses, yogurt, *lassi* are *baadi* (useless) foods.
- Do these foods affect child health?

**Q 25: Has your health worker given you iron (Black tablets) to take? What do you think these tablets are for? Are you using these tablets? If not, why?**

Probes:

- **If not being used**: Explore whether the respondent is not convinced about their use, has intolerance to the medication, does not give importance to her health, or feels that these tablets will have no effect on her

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**Q26**: **Tell us about your rest and relaxation. Can you have some rest so that you do have some time and energy to play with the child?**

Probes: Whether she thinks rest is important? How she manages? Can other family members help? What would be the best way to achieve this?

- **How many hours a day you sleep?**

C. **Mothers of infants 7-12 months**

*Greetings! We are...(name of Researcher)and ...(name of Researcher) from ...(name of organization). We are collecting information on how mothers and families take care of their children's growth and development. This information will be used to help other families in the bringing-up of their children.*

*Thank you very much for your time.*

*Mothers and families in our part of the world know a lot about how to look after children and to ensure that they grow up to be healthy and bright. We would like to learn from you about the care giving practices followed by families for the mother and her baby, and what you believe will make your child healthy and intelligent.*

[Guide for interviewer: Start by asking about how the mother feels generally these days.]

[Guide for interviewer: If the mother has health problems that need medical attention, refer her to the LHW after finishing the interview.]

**Q 1: We will start with your own health. Would you like to tell us how you are feeling these days?**

Probes:

- Explore if the mother is having any problems related to her physical health and what she is doing about it?

**Q2: This is the time when some of the mothers may become pregnant again. What is your current situation?**

Probes:

- **If pregnant:**
o How it is affecting mother's own health and life?
o How has it affected the young infant?
o Is the mother still breastfeeding her child or not? If not, why?
o How is it affecting the time she spends with the young child?
o How does she feel about the baby that is going to be born?

*II-*Questions about child's n*utrition & health*

**Q 3: Can you please tell us whether you are currently breastfeeding the child?**

 Probes:

- Explore whether she is continuing to breastfeed her baby? If not, why and what other milk or liquid is being used?
- If she is continuing, up to what age does she intend to continue breastfeeding her child?
- Who provided her the advice that she is following?

**Q 4: Have you started giving semi solid foods to your child?**

- **If yes, what do you give? Does the child eat these?**
- **If semi-solids not yet started, then why and when will she start?**
- **Who advised her to follow these practices?**

Probes:

- Explore what age is appropriate for weaning according to the respondent mother. Why she thinks it to be appropriate? What food does she/will she use as semi-solids for her child? Why she chose those foods?

- Explore whether mother thinks pre-packed, commercially available weaning foods are better than home-made foods? If yes, why?
- When, according to her, the child could be given all the foods prepared for adult members of the family?

**Q5: What does your health worker tell you about your child's nutrition?**

Probes:

- Explore whether health worker's advice makes sense to her? Is she able to follow the instructions? If not, what are the reasons?

**Q6: Can you please tell us how you decide about the portion size suitable for your child and how do you come to know that your child is satiated with the amount you served him/her? What do you do when your child does not eat food?**
Probes:

- Explore up to what extent this decision is being dictated by the family's economic status.]

**Q 7: When will you start to let your child eat independently?**
[Guide for interviewer: Children can normally explore finger foods from 8-9 months]
**Q 9: How is your baby's health?  What gives you most pleasure about your baby? What gives you most worry?**

[Guide for interviewer: Inquire if required, whether it is a baby girl or boy? Explore if the infant is in good health and has no physical problems like fever, diarrhoea, cough etc].

**Q10: How will you come to know that your child is unwell? If your child is unwell, where do you seek help?**

Probes:
- Apart from common illnesses that might affect the child's development, explore how do mothers come to know that their child is malnourished and what do they do for treatment.

- Find out about situations when a child is treated at home, when help is sought from a health worker, who is the health worker, where is the health facility, how do they travel to the health facility, who made the decision to seek help-find out who all were present at that time at home, who said what and what was finally done-& work backwards to understand who was the decision maker (eg. *You, father, mother in law*).

[Guide for interviewer: May take an example of what happened last time the child was sick]

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### III-Questions regarding mother and family

**Q 11: You are taking care of a growing baby as well as doing domestic chores. How do you manage?**

- **Do you feel you are able to fully look after your baby?**
- **If not, what are the main problems? How do you think these problems could be overcome?**

Probes:

- How much is the workload and how she is dealing with it? Listen to main problems in her mind. Explore whether the mother feels that she has to perform too many duties and whether it is bringing dissatisfaction about parenting in her.
- Ask her about her role as a mother, main care giving responsibilities, daily challenges.
- Explore whether she thinks support from other family members could help her deal with this situation. From whom does she seek support?
- Also explore her mental health e.g. feelings of being happy or sad etc. Does she think that she has no time to think about herself or to relax? Does she perceive herself to be distressed or worthless because of which she cannot do anything worthwhile?

**Q 12: Tell us about your family members, how are they dealing with the new baby and you?**

[Guide for interviewer: Explore whether and how husband, mother-in-law, father-in-law and other family members support the mother and infant.]

- **Tell us about the attitude and role of your husband in taking care of you and your child?**
- **Explore the views of family (husband and wife) about child spacing, and it affect on earlier children' development.**
- **How much time father spends with the child in a day?**
- **What activities father does with the child?**
- **Who usually does the following activities for the child- cooking, feeding, bathing, toileting, washing the child's clothes, attending to the child when s/he cries?**
- **What activities do the father/grandparents/siblings do with your child?**
- **What family members do to make the child happy?**
- **How do siblings interact and play with the child?**
- **Who makes decisions about what you feed your child? When your child seeks care?**

*IV- Questions regarding health system & family interaction*

**Q 13: Do you receive any information/ service from LHW, with respect to child care and child's proper nutrition growth and development? How? When?**

Probes:
- Explore information given about child's first feed, breast feeding, complementary feeding, supplementary nutrition from LHW Which of these have you found useful, and practice it?
- Explore about home visits-number of visits, content, family members involved in home visit, duration?

**Q 14: From where else do you get information about child care? Eg. Doctor,. Have you adopted any of the advice/ information given by them? If yes, which ones, if no why not?**

**Q 15:  How often your lady health worker visits you?**

**Probes:**

- **What is the content of visit? Who was involved in discussion? Does lady health worker talks to male members of the family or mother in law?**
- **Can you tell us the details of last meeting you had with LHW?**

*V- Questions about child's development*

**Q 16: Your child is ----months old now. Can you please tell us some of the things/acts that your child has learnt up to this time?** Probes:

- Explore whether the mother has noticed major milestones (appropriate for her child's age) like neck-holding, rolling over, sitting without support, crawling etc.
- Explore whether she is aware of the playful activities that her child can do like making noises with objects, dropping things, banging little things with each other etc. and whether she relates it to brain & motor development-*making child clever/intelligent*?
- Explore what the mother can do to promote her child's development- *making child clever/intelligent*?

**Q 17: When do you think children begin to play?**

Probes:

Explore whether mother thinks young infants like hers can *play* or not? Explore terms like *what kind of activities make your child happy? If* not, why?

**Q18: Do you play any games with your child? Which ones?**

Probes:

- Explore games like peak a boo, clapping games, bye bye game
- What does her child play with?
- Do she think only fancy toys should be bought for a child, and being poor, they cannot afford such toys?
- Do you have picture books in the home? Are these ever used with the case child?
- What things in the natural environment you show to the child? Why?

[Guide: We are trying to understand what toys are in the home- these might be shop bought items like balls or dolls, they might be kitchen utensils or homemade toys]

**Q 19: Do you think a child learns anything when she/he plays these games? If yes, what? Can you give some examples?**

**Q20: Let us talk about how a child learns to communicate. Can you please tell us how your child responds when his/her name is called?**

Probes:

Explore whether she believes communication can also be non-verbal? Ask how her child responds to gestures like" bye bye" Note her response.


- **Does your child understand words like mama, baby, no, water?**
- **How does your child communicate its needs and emotions to you?**


[Guide to interviewer: Ask to give examples such as how do you know your child is hungry/happy/sad/thirsty/angry/wants to be carried]

**Q 21: How do you communicate with your child while feeding him/ her? How does the child respond? Do you think any communication happens between the two of you while feeding?**

Probes:

- Ask her how the child makes noises and gestures while breastfeeding, and how she responds?
- How they both interact while the child is having a bowl of semi-solid? Does she engage the child in any way like telling stories, rhymes, playing with toys etc to hold the child's attention and focus on feeding?

**Q22: Do you tell your child songs/rhymes? How often? Can you share some of your favourite songs/rhymes with me? How does your child respond to these?**

**Q 23: How do you show your child you are pleased with her? Can you share an example of the last time you showed your child you were pleased with her?**

**Q 24: Have you ever become angry with your child? Why? What did you do when your child made you angry?**

[Guide for interviewer: Explore words such as *pareshan, tension, thang*]

**Q 25: In your community on what occasion do people come together? When/where can we seek their support for any work we may want to do in your community? Who are the key influential people in your community?**

*VI-Questions about maternal nutrition*

**Q 26: We would now like to ask you about your diet. What type and quantity of food do you think a mother like you should take? Has anyone given you any information about it? If yes who and what? How same or different is your current diet to your earlier diet- same/less/more?**

Probe:

- Ask about the information given by CBA? Whether the mother has increased the amount of food as per health worker's advice? If not increased food intake, why not?

**Q 25: If the respondent herself follows health worker's advice about balanced diet, then ask her- Some mothers appear to be unable to follow the health worker's advice about a healthy balanced diet. What do you think the reasons are?**

Probes:

- Explore (even if according to the mother, the health worker has never talked about it) whether poverty, lack of knowledge are the reasons in her mind.
- Explore food fads e.g. egg, fish and beef are *garam* (hot) foods, or pulses, yogurt, *lassi* are *baadi* (useless) foods.

**Q 27: Has your health worker given you iron (Black tablets) to take? What do you think these tablets are for? Are you using these tablets? If not, why?**

Probes:

- **If not being used:** Explore whether the respondent is not convinced about their use, has intolerance to the medication, does not give importance to her health, or feels that these tablets will have no effect on her]

**Q 28: Tell us about your rest and relaxation. Can you have some rest so that you do have some time and energy to play with the child?**

Probes:

- Whether she thinks rest is important?
- How does she manage?
- Can other family members help? What would be the best way to achieve this?

**D. Mothers of infants 13-24 months**

*Greetings! We are...(name of Researcher)and ...(name of Researcher) from ...(name of organization). We are collecting information on how mothers and families take care of their children's growth and development and the role of public system in doing so. This information will help us understand the manner in which children are being brought-up in our villages, based on which we will try to strengthen child care and development practices in the villages.*

*Thank you very much for your time.*

*I- Opening questions*

*Mothers and families in our part of the world know a lot about how to look after children and to ensure that they grow up to be healthy and bright. We would like to learn from you about the care taking practices followed by families for the mother and her baby, and what you believe will make your child healthy and intelligent.*

[Guide for interviewer: Start by asking about how the mother feels generally these days.]

[Guide for interviewer: If the mother has health problems that need medical attention, refer her to the CBA after finishing the interview.]

**Q 1: We will start with your own health. Would you like to tell us how you are feeling these days?**

Probe:

- Explore if the mother is having any problems related to her physical health and what she is doing about it?

**Q2: This is the time when some of the mothers may become pregnant again. What is your current situation?**

Probes:

- **If pregnant:**
o How it is affecting mother's own health and life?
o How has it affected the young infant?
o Is the mother still breastfeeding her child or not? If not, why?
o How is it affecting the time she spends with the young child?
o How does she feel about the baby that is going to be born?

*II-Questions about child's nutrition & health*

**Q 3: Can you please tell us whether you are currently breastfeeding the child?**

 Probes:

- Explore whether she is continuing to breastfeed her baby? If not, why and what other milk or liquid is being used?
- If she is continuing, up to what age does she intend to continue breastfeeding her child?
- Who provided her the advice that she is following?

**Q 4: Have you started giving semi solid foods to your child?**

- **If yes, what do you give? Does the child eat these?**
- **If semi-solids not yet started, then why and when will she start?**
- **Who advised her to follow these practices?**

- **What does your health worker tell you about this?**

Probes:

- Explore what age is appropriate for weaning according to the respondent mother. Why she thinks it to be appropriate? What food does she/will she use as semi-solids for her child? Why she chose those foods?
- Explore whether mother thinks pre-packed, commercially available weaning foods are better than home-made foods? If yes, why?
- When, according to her, the child could be given all the foods prepared for adult members of the family?

**Q 5: Can you please tell us how you decide about the portion size suitable for your child?**

Probe:

- Explore whether she is sticking to the amount recommended by her health worker, or making own judgements.
- Explore up to what extent this decision is being dictated by the family's economic status, and other members of the family?

**Q6: How do you come to know that your child is satiated with the amount you served him/her?**

**Q7: What do you do when your child does not eat food?**

**Q 8: When did/will you start to let your child eat independently?**

**Q 9: How is your baby's health? What gives you most pleasure about your baby? What gives you most worry?**

[Guide for interviewer: Inquire if required, whether it is a baby girl or boy? Explore if the infant is in good health and has no physical problems like fever, diarrhoea, cough etc].

**Q11: How will you come to know that your child is unwell? If your child is unwell, where do you seek help?**

Probes:

- Apart from common illnesses that might affect the child's development, explore how do mothers come to know that their child is malnourished and what do they do for treatment.

- Find out about situations when a child is treated at home, when help is sought from a health worker, who is the health worker, where is the health facility, how do they travel to the health facility, who made the decision to seek help-find out who all were present at that time at home, who said what and what was finally done-& work backwards to understand who was the decision maker (eg. *You, father, mother in law*).

[Guide for interviewer: May take an example of what happened last time the child was sick]

*III-Questions regarding mother & family*

**Q 12: You are taking care of a growing baby as well as doing domestic chores. How do you manage?**

- **Do you feel you are able to fully look after your baby?**
- **If not, what are the main problems? How do you think these problems could be overcome?**

Probes:

- How much is the workload and how she is dealing with it? Listen to main problems in her mind. Explore whether the mother feels that she has to perform too many duties and whether it is bringing dissatisfaction about parenting in her.

- Ask her about her role as a mother, main care giving responsibilities, daily challenges.

- Explore whether she thinks support from other family members could help her deal with this situation. From whom does she seek support?

- Also explore her mental health e.g. feelings of being happy or sad etc. Does she think that she has no time to think about herself or to relax? Does she perceive herself to be distressed or worthless because of which she cannot do anything worthwhile?
- Does your husband help you in household chores?

**Q 13: Tell us about your family members, how are they dealing with the new baby and you?**

[Guide for interviewer: Explore whether and how husband, mother-in-law, father-in-law and other family members support the mother and infant.]

- **Tell us about the attitude and role of your husband in taking care of you and your child?**
- **Explore the views of family (husband and wife) about child spacing, and it affect on earlier children' development.**
- **How much time father spends with the child in a day?**
- **What activities father does with the child?**

- **Who usually does the following activities for the child- cooking, feeding, bathing, toileting, washing the child's clothes, attending to the child when s/he cries?**
- **What activities does the father/grandparents/siblings do with your child?**
- **Who makes decisions about what you feed your child? When your child seeks care?**

*IV- Questions regarding health system & family interaction*

**Q 14: Do you receive any information/ service from LHW, with respect to child care and child's proper nutrition growth and development? How? When?**

Probes:

- Explore information given about child's first feed, breast feeding, complementary feeding, supplementary nutrition from LHW Which of these have you found useful, and practice it?

- Explore about home visits-number of visits, content, family members involved in home visit, duration?

**Q 15: How often your lady health worker visits you?**

**Probes:**

- **What is the content of visit? Who was involved in discussion? Does lady health worker talks to male members of the family or mother in law?**

- **Can you tell us the details of last meeting you had with LHW?**

**Q 16: Who do you meet more often-AWW or ASHA sahyogini? Who are you more friendly with and interact with more?**

*V- Questions about child's development*

**Q 17: Your child is ----months old now. Can you please tell us some of the things/acts that your child has learnt up to this time?** Probes:

- Explore whether the mother has noticed major milestones (appropriate for her child's age) like neck-holding, rolling over, sitting without support, crawling etc.

- Explore whether she is aware of the playful activities that her child can do like making noises with objects, dropping things, banging little things with each other etc. and whether she relates it to brain & motor development-*making child clever/intelligent*?

- Explore what the mother can do to promote her child's development- *making child clever/intelligent*?

**Q 18: When do you think children begin to play?**

Probes:

Explore whether mother thinks young infants like hers can *play* or not? Explore terms like *what kind of activities make your child happy ?*If not, why?

**Q19: Do you play any games with your child? Which ones?**

Probes:

- Explore games like peak a boo, clapping games, bye bye game
- What does her child play with?
- Does she think only fancy toys should be bought for a child, and being poor, they cannot afford such toys?
- Do you have picture books in the home? Are these ever used with the case child?

[Guide: We are trying to understand what toys are in the home- these might be shop bought items like balls or dolls, they might be kitchen utensils or homemade toys]

**Q 20: Do you think a child learns anything when she/he plays these games? If yes, what? Can you give some examples?**

**Q21: Let us talk about how a child learns to communicate. Can you please tell us how your child responds when his/her name is called?**
Probes:
Explore whether she believes communication can also be non-verbal? Ask how her child responds to gestures like" bye bye" Note her response.

- Does your child understand words like sit, stand, walk, smile, throw, eat?
- Explore whether the mother believes her child knows its name or not?
- How does your child communicate its needs and emotions to you?
[Guide to interviewer: Ask to give examples such as how do you know your child is hungry/happy/sad/thirsty/angry/wants to be carried]
**Q21: Has your child started speaking words? What are those words and what do you do when he/ she says those words?** Probes:

- Does she introduce new words/things to the child? If yes, how? If not, why not?

**Q 21: How do you communicate with your child while feeding him/ her? How does the child respond? Do you think any communication happens between the two of you while feeding?**

Probes:

- Ask her how the child makes noises and gestures while breastfeeding, and how she responds?
- How they both interact while the child is having a bowl of semi-solid? Does she engage the child in any way like telling stories, rhymes, playing with toys etc to hold the child's attention and focus on feeding?

**Q22: Do you tell your child songs/rhymes? How often? Can you share some of your favourite songs/rhymes with me? How does your child respond to these?**

**Q 23: How do you show your child you are pleased with her? Can you share an example of the last time you showed your child you were pleased with her?**

**Q 24: Have you ever become angry with your child? Why? What did you do when your child made you angry?**

[Guide for interviewer: Explore words such as *pareshan, tension, thang*]

**Q25: Explore whether she thinks that excessive picking up will spoil the child.**

**Q26: Does she think that her worries and tensions will affect the child?**

**Q 27: In your community on what occasion do people come together? When/where can we seek their support for any work we may want to do in your community? Who are the key influential people in your community?**

*VI-Questions about maternal nutrition*

**Q 28: We would now like to ask you about your diet. What type and quantity of food do you think a mother like you should take? Has anyone given you any information about it? If yes who and what? How same or different is your current diet to your earlier diet- same/less/more?**

Probe:

- Ask about the information given by CBA? Whether the mother has increased the amount of food as per health worker's advice? If not increased food intake, why not?

**Q 29: If the respondent herself follows health worker's advice about balanced diet, then ask her- Some mothers appear to be unable to follow the health worker's advice about a healthy balanced diet. What do you think the reasons are?**

Probes:

- Explore (even if according to the mother, the health worker has never talked about it) whether poverty, lack of knowledge are the reasons in her mind.
- Explore food fads e.g. egg, fish and beef are *garam* (hot) foods, or pulses, yogurt, *lassi* are *baadi* (useless) foods.


**Q 30: Has your health worker given you iron (Black tablets) to take? What do you think these tablets are for? Are you using these tablets? If not, why?**

Probes:

- **If not being used:** Explore whether the respondent is not convinced about their use, has intolerance to the medication, does not give importance to her health, or feels that these tablets will have no effect on her]


**Q 31: Tell us about your rest and relaxation. Can you have some rest so that you do have some time and energy to play with the child?**

Probes:

- Whether she thinks rest is important?
- How does she manage?
- Can other family members help? What would be the best way to achieve this?


**Closing Question**

**Q32: What future aspirations do you have for your child?**

## E. INTERVIEW GUIDE WITH FATHERS

*Welcome. We would like to understand more about how very young children are cared for in your community. We would especially like to understand more about the role of father sin early child care.*

**[Guide for interviewer: Keep asking the interviewees to focus on their child less than 2 years of age, or when another child was in this age group]**

*Parents and families in our part of the world know a lot about how to look after children and to ensure that they grow up to be healthy and bright. We would like to learn from you what traditional care giving practices exist for the mother and the baby, and what you believe will make your child healthy and intelligent.*

*Do you feel ready to have such a discussion?*

**Q 1: We will start with your own health and feelings. Would you like to tell us how you are feeling these days? Can delete this question and instead ask generally something like "how are things these days", while taking the identifying information, since don't think will use the information about father's health in any way during intervention**

[Probe: Ask about general well-being including any health problems, and mental wellbeing including any concerns or worries? Ask what work he does

**Q 2: You are father of a ----months old child. Tell us something about your experience of being a father? What were your thoughts and experiences when your child was about to be born, a few months old, and now?**

[Probe: Explore his feelings, any concerns or worries that were there in his mind before childbirth, during newborn period and later? How he dealt with these concerns? How, before childbirth, he helped his family to prepare for the events to come? How much confidence he has/had in his own ability and in his wife's to bring up children? ?]

**Q 3: Let us talk about your wife. How is she now and how her health has been in the recent past? Has she had any problems from around the period of childbirth up to now? How did she manage? What has been your role in it?**

[Probe: Explore whether he thinks that childbirth and child rearing is a women's domain and a man has nothing to do with it, or whether he thinks that husband does have a role to play? Ask whether he thinks some steps can be taken for the family as well as for the child, or he believes in *Qismet* (fatalism), and that nothing can be done because of poverty, illiteracy etc.?]

- Explore the communication pattern among husband & wife?
- How do you take care your wife or how you handle the issues related to your wife health?
- What do you think about birth spacing? Do you think it affects the mental/ physical development of the children? What you do for birth spacing?

**Q 4: Other members of the family also constitute the environment in which a child is brought up. Tell us something about other family members and their role towards the brought up of your child?**

[Probe: Explore who are these members (e.g. grandma, aunt, uncle, elder sibs etc.) and whether the respondent thinks they had a role to play? What role did they play around childbirth and early days? What is their role towards a growing toddler? Who usually does the following activities for the child- cooking, feeding, bathing, toileting, washing the child's clothes, attending to the child when s/he cries? Who makes decisions about what you feed your child? When your child seeks care? If you child will go to school?]

- Tell us something about relationship pattern of your wife and mother and other individuals at home? If there is any conflict in the family, how do you resolve it?

*II-Questions about maternal nutrition*

**Q 5: We would now like to ask you about the diet of the mother and the baby. Please tell us about the diet that your wife has been taking while expecting the**

**baby, after birth, and now- How same or different is it to her earlier diet-same/less/more?**

- **Do you think there is any connection between her diet and the baby? If yes, then what? What has been your role in helping the mother eat an adequate diet?**

[Probe: Explore the use of staple foods (*chapatees*, rice), milk or yogurt, proteins, fruits, vegetables and whether poverty was a factor in not having a balanced diet?]

**Q 6: High cost of food is a problem for everyone these days. How does your family manage it? What are the steps that a family like yours can take to ensure that all family members get adequate food? What did your family do in similar situations? What was your role in it?**

[Probe: Explore whether poverty is a barrier in the man's mind and whether he has some knowledge or thoughts on overcoming these barriers? Was it practiced in his own home?]

**Q 7: The health worker of your area provides Iron and Folate tablets to mothers. What do you think these tablets are for? Did your wife get these and did she use these tablets? If not, why?**

[Probe: Explore whether the husband is aware of these tablets and their purpose, and whether he is convinced about their use or not? If not, why? Did you encourage her to take these tablets?]

*III- Questions about child's health, nutrition and development*

**Q8: How will you come to know that your child is unwell? If your child is unwell, where do you seek help?**

[Probes: Apart from common illnesses that might affect the child's development, explore how do mothers come to know that their child is not growing as per age/ is weak and what do they do for treatment. Find out about situations when a child is treated at home, when help is sought from a health worker, who is the health worker, where is the health facility, how do they travel to the health facility, who made the decision to seek help-find out who all were present at that time at home, who said

what and what was finally done-& work backwards to understand who was the decision maker-ask about the last time the child was unwell.

**Q9: Tell me about how you feed your young child:**

- **Can you tell me whether your child was given mother's milk when new born? Do you recall for how long only mother's milk was given? Who gave the advice to do so?**
- **Do you recall when your child was given semi solid foods? Who gave this advice?**
- **What foods do you think are good for your child? Can you explain to me why?**
- **What foods do you think are not good for your child? Can you explain why?**
- **Do you every buy readymade foods or snacks from outside for your child? What do you buy?**
- **Do you ever eat along with your children? Do you ever help feed your children?**

**Q10: We would like to ask about your child's development. Can you please tell us something about the days when your wife was expecting? Did she think her physical or mental situation affected the baby? What were your thoughts on this?**

[Probe:. Did she take care of herself both mentally and physically because she thought it will affect the baby? Did she take some actions (e.g. ensuring adequate nutrition and rest, seeking advice about it)? What were husband's thoughts/actions towards this?]

**Q11: Let us talk about the first month of a child. Do you think a father should take the baby in his lap? What should he do after picking up the baby? What used to be your reactions when you were asked to pick up your child? What did you do when you picked the baby? Do you think one can play with a young infant? What can one play?**

[Probe: Explore whether there were some inhibitions in picking up the baby? Was the father afraid that baby may fall down, or he thought it was not a man's job? What games does he mention for a young baby? Help him think about eye contact, making faces or making the child giggle as games for a young baby. Listen to him if he has something to add to this list.]

- How much time do you spend with your child in a day?

**Q 13: Tell us something about the subsequent months? Can you recall some of the games/things/acts that your child learnt in these months? How did you respond to these games or acts of your child?**

[Probe: Explore whether the father noticed major milestones (appropriate for his child's age) like neck-holding, rolling over, sitting without support, crawling etc. Also explore whether he is aware of the little games of the child like making noises with objects, dropping things, banging little things with each other etc?]

**Q 14: Do you think your child learns anything when she/he plays? If yes, what?**
[Probe: Explore whether the father relates play activities with the physical growth and mental development or not?]

- Do you play with your child? How?
- Do you play/interact with your child separately or along with your wife as a family unit?

**Q 15: Let us talk about how a child learns to communicate. Can you please tell us when and how your child started making sounds to seek attention?**
- **When he/she started responding to sounds e.g. when his/her name was called?**
- **What should a father do when a child seeks attention?**
- **What do you do when your child tries to talk to you?**
- **Does you talk to your child? How does the child respond?**
- **How do you help the child to learn new words?**

**Q16: As fathers we all have special memories of our children. Can you share a special memory you have about your child with me?**

- **Can you share a special memory of your child from the first 2 years of life?**
- **How do you make your child smile/laugh?**

**Q17: How do you show your child you are pleased or angry with her/him?**

- **How do you show your child you are pleased with her? Can you share an example of the last time you showed your child you were pleased with her?**
- **Have you ever become angry with your child? Why? What did you do when your child made you angry?**
- **If your child does something wrong, what do you do to correct the behaviour?**

[Guide for interviewer. E.g. hits someone, throws particular things around, insists on going somewhere being told not to go]

**Q18: Do you receive any information from LHWabout child care and child's proper nutrition, growth and development? How often does the health worker visit you? How much time does she spend with you?**

- **Can you describe the last visit the health worker made?**
- **When is the most suitable time for a health worker to visit you?**
- **What have you learned from these people? Have you ever adopted this advice?**
- What is your view about LHW program? Do you receive certain health messages through lady health worker directly or indirectly? Do you find these messages appropriate and you follow them? If yes, which one? If not, why not?
- Can you give some suggestions to bring any improvement in LHW work?

**Q 19 From where else do you get information about child care? Eg. Doctor, Have you adopted any of the advice/ information given by them? If yes, which ones, if no why not?**

**Q20: What are the daily challenges you face in caring for your child?**

**Q21: Can you tell me which children in this community are at risk of poor health? Why?**

**Q22: In your community, on what occasions do people get together in small groups? When/where can we seek their support for any work we may want to do in your community? Who are the key influential people in your community?**

- **What and where are the meeting places of males in the community?**
- **Do men talk about maternal health and child care in these meetings or groups?**

**Q23: What future aspirations do you have for your child?**

## F. <u>INTERVIEW GUIDE WTH GRANDMOTHERS</u>

*Welcome. We would like to understand more about how very young children are cared for in your community. We would especially like to learn about the role of grandmothers.*

**[Guide for interviewer: Keep asking the interviewees to focus on their child less than 2 years of age, or when another child was in this age group]**

*Grandmothers and families in our part of the world know a lot about how to look after children and to ensure that they grow up to be healthy and bright. We would like to learn from you what traditional care giving practices exist for the mother and the baby, and what you believe will make your child healthy and intelligent.*

*Do you feel ready to have such a discussion?*

**Q 1: We will start with your own health and feelings. Would you like to tell us how you are feeling these days?**

[Probe: Ask about general well-being including any health problems, and mental wellbeing including any concerns or worries? Ask whether she thinks her health and worries have a relationship with health and wellbeing of the children of the family?]

**Q 2: You are grandmother of (name of child), and of some/many other children. Tell us something about your experiences? What are your thoughts when a child is about to be born, when it is in initial weeks, and when it is growing as a toddler?**

[Probe: Explore her feelings, any concerns or worries that are usually there in grandma's mind before childbirth, during newborn period and later? How she thinks these can be dealt with? How she has been helping her family and others?]

**Q 3: Your advice is very important but its implementation requires a healthy and active person in the family. Is your daughter-in-law that person in your family, and is she in good health to do everything expected?**

- **Has your daughter-in-law had any problems from around the period of child birth up to now? How did she manage? What has been your role in it?**
- **Do you give any advice to your daughter in law regarding caring for her and child health, nutrition, development? What? Does she follow your advice?**

[Probe: Explore whether she thinks she has a role in childbirth and child rearing or not? Does she have a comfortable relationship with her daughter-in-law, or is it the proverbial "tense" relationship? Ask whether she thinks some steps can be taken for the family as well as for the child, or she believes in *Qismet* (fatalism), and that nothing can be done because of poverty, illiteracy etc.?]

**Q 4: Other members of the family also constitute the environment in which a child is brought up. Tell us something about other family members and their role towards the brought up of this child?**

[Probe: Explore who are these members (e.g. parents, aunt, uncle, elder sibs etc.) and whether the grandma thinks they have a role to play? What role do they play around childbirth and early days? What is their role towards a growing toddler?]

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**Q5: Who usually does the following activities for the child- cooking, feeding, bathing, toileting, washing the child's clothes, attending to the child when s/he cries?**

**Q6: Who makes decisions about what the child is fed, when care is sought for the child, if the child will go to school?**

*II-Questions about maternal nutrition*

**Q 7: We would now like to ask you about the diet of the mother and the baby. Please tell us about the diet that a mother should be taking while expecting the baby, after birth, and later?**

- **How same or different has your daughter-in-law's diet been at different stages of pregnancy & child birth- same/less/more?**

[Probe: Ask whether her daughter-in-law was able to increase the amount of food at various stages or not? Explore the use of staple foods (*chapatees*, rice), milk or yogurt, proteins, fruits, vegetables and whether poverty was a factor in not having a balanced diet?]

- **Do you think there is any connection between the mother's diet and the baby? If yes, then what?**
- **What has been your role in helping the mother eat an adequate diet?**

 **Q 8**: **High cost of food is a problem for everyone these days. How does your family manage it? What was your role in it?**

- **What are the steps that family like yours can take to ensure that all family members get adequate food?**
- **What did your family do in similar situations?**

[Probe: Explore whether poverty is a barrier and whether she has some knowledge or thoughts on overcoming these barriers? Was it practiced in her home? If not, why not?]

**Q 9: The health worker of your area provides Iron and Folate tablets to the mothers. What do you think these tablets are for?**

- **Did your daughter-in-law get these and did she use these tablets? If not, why?**
- **Did you encourage your daughter in law to take these tablets? Why?**

*III- Questions about child's health, nutrition and development*

**Q 10**: **What was the child's nutrition immediately after birth and during the initial months?**

[Probe: Help her recall the activity of first feed. If and what was given as prelacteals, as first feed, was colostrum given, who helped mother and baby if breast milk was the first feed.

**Q11:Did your daughter-in-law breastfeed the baby? What was your role when your daughter-in-law was breastfeeding her child?**

[Probe: Did she help her (e.g. by taking care of elder sibs or domestic chores) during subsequent days and weeks?]

**Q12: Can you tell us the factors because of which mothers may not breastfeed their babies?**

[Probe:What are the factors in her mind that may lead mothers to stop breastfeeding their babies? During initial days/months, was something given to the baby in addition to the breast milk? If yes, what was it and when was it given?]

**Q 13:Do you remember when semisolid foods were started? What were these foods initially and why were they chosen?**

[Probe: Explore the duration of exclusive breastfeeding and the time and type of foods given in addition to breast milk. Also explore initial weaning foods (e.g. whether infant food from the market or home-made) and reasons for choosing a specific type.]

**Q 14: How will you come to know that your grandchild is unwell? If your grandchild is unwell, where do you seek help?**

Probes:

- Apart from common illnesses that might affect the child's development, explore how do grandmothers come to know that the child is not growing as per age/ is weak and what do they do for treatment.
- Find out about situations when a child is treated at home, when help is sought from a health worker, who is the health worker, where is the health facility, how do they travel to the health facility, who made the decision to seek help-find out who all were present at that time at home, who said what and what was finally done-& work backwards to understand who was the decision maker-ask about the last time the child was unwell.

**Q15**: **I would like to know about how well you think the child is growing.**

- **How do you know if the child is growing as you would expect for his/her age?**
- **What do you do to ensure the child is growing well?**

[Probe: What has your grandchild learnt till this age? For example, at what age do you expect child to sit up, start to walk, say first words? Any other examples which you feel are important?]

- **How do you think growth and development of a young child be improved? Are you able to implement some of these suggestions? If not, why?**

**Q 16: Do you think your grandchild learns anything when she/he plays? If yes, what?**
**[Probe: Explore whether the grandma relates play activities with the physical growth and mental development or not?]**

**Q 17**: **Let us talk about how a child learns to communicate. Can you please tell us when and how your child started making sounds to seek attention?**

- **When he/she started responding to sounds e.g. when his/her name was called?**

- **What should a father do when a child seeks attention?**
- **What do you do when your child tries to talk to you?**
- **Does you talk to your child? How does the child respond?**
- **How do you help the child to learn new words?**

**Q18: Can you tell us about particular (traditional) care giving practices that are very important for infants and young children?**

[Probe: explore baby massage, head shaping, swaddling, *kajol*, early feeding beliefs]
[Guide for interviewers: Ask at what age these practices happen, why they are important]

**Q19: Tell me more about your role as a grandmother?**
- Do you help feed your grandchild?
- **Do you play games with your grandchild? What games do you play? When?**
- **Do you tell stories/ songs/poems to your grandchild? How often? What stories do you tell? Can you tell some traditional stories/ songs/poems that are told to children in your community?**
- **What other activities do you do with your grandchild?**
- **Do you give advice to the child's mother and father about care-giving? What advice do you give?**

**Q20:Do you receive any information/ service from LHW/AWW/ ASHA sahyogini wrt child care and child's proper nutrition, growth and development?**
- **How often does the health worker visit you? How much time does she spend with you?**
- **Can you describe the last visit the health worker made?**
- **What have you learned from these people? Have you ever adopted this advice?**
- **When is the most suitable time for a health worker to visit you?**

**Q21: From where else do you get information about child care? Eg. Doctor, ANM. Have you adopted any of the advice/ information given by them? If yes, which ones, if no why not?**

**Q22: Can you tell which children in this community are at risk of poor health? Why?**

**Q23: In your community, on what occasions do people come together in small groups? When/where can we seek their support for any work we may want to do in your community? Who are the key influential people in your community?**

## G. <u>MOTHER/CHILD NARRATIVES</u>

<u>Background Notes:</u>

- The purpose of the mother/child narrative is to build a picture of a typical day in the life of the mother and the case child in the mother's own words.
- The mother should know:
- The approximate length of time the narrative will take.
- Her input will be valuable in helping us to understand how we can introduce strategies for supporting families with respect to health, feeding and care for their infants and young children. The mother should know we intend to build on the strengths she already has.
- If possible, the research team would like to make a return visit to observe how the case child experiences a day. Decide a time together when the child will be awake for at least part of the day. The observations will take about 4 hours.

Mother/Child Narratives:

*Hello. I am.... from... We are interested in learning what [Case Child's Name] and you do on a typical day at home. We would like to understand what the care giving practices are in your home. Our visit will last about one and a half hours. All the information you share will help us to identify strategies to support families with infants and young children with respect to health, feeding and care. If you are agreeable shall we begin?*

A good way of getting a picture of what the mother's day is like is to ask her to think of a particular day- like yesterday- and get her to tell you everything that happened to her and her child that she can remember. If 'yesterday' was not typical discuss with the mother a day she can recall which was typical. Start with the things that happened when the child first woke up. For example: *Was [Case Child's Name] the first one to wake up? What did he/she do after waking up? How were you alerted to the fact that your child was awake now?*

Encourage the mother to continue describing her day with her child. Try to go through the day n sequence from waking until bedtime. Some useful prompts are:

- *What did you do when your child first woke up (e.g. fed her, bathed her, dressed her, and played with her)? How long did this activity take? Did you have any help at this time? From whom? What did they do?*
- *When was the first feed for the child? What did you feed?*
- *What chores did you do during the day between your child waking up and the next feed? How long did your chores take?*
- *Where was your child while you were doing your chores? If she was with you, what was she doing? If she was with someone else what was she doing? Who was she with?*
- *Find out about the other care givers in the home? What help do they give the mother? What care during the day do they provide for the child?*
- *When did you next feed your child? Do you have set times for feeding? How do you know when your child is hungry? Who fed her? What was fed to her?*

- *Find out about play activities the child did during the day? Alone? With other children or adults? What were the activities? Where did she play? What materials were used?*
- *If your child cried who went to her?*
- *If the child needed changing- who changed her?*
- *Did your child take any naps? For how long?*
- *Can you describe to me the bedtime routine for your child? Where does she sleep?*

As the narrative is drawing to a close find out from the mother if this is a typical day for her? Find out what part of the day she liked most and why? Find out what part of the day she liked least and why?

## H. OBSERVATIONS IN THE HOME ENVIRONMENT

The warm up:

The observer should spend a little time with the mother and case child to become familiar. If other family members are present (e.g. father, grandmother, siblings) they should also be made to feel comfortable. The conversation can be about general things. Use this opportunity to understand the roles of family members. This is a good opportunity to say something nice about the case child which will help in breaking the ice. For example- *What a lovely smile you have!* Explain to the mother and family that during the course of the observation you will be focusing on the case child and building a picture about how she experiences her day. For example- *How the child occupies her time? What she likes to do? What she likes to play with? Whether she plays alone or with someone? What she likes to eat? How she lets the family know she wants attention?*

In going through the data collection process, make notes of examples of positive deviance.

Key areas for observations:

1. **Environment:** Is the home environment clean? Is the home environment safe? Are there any hazards that may cause harm to the child? Are there pets/animals in the compound? Describe in detail the spaces that a child occupies (e.g. the space where the child sleeps, eats, plays, bathes). You may ask to see these spaces at the end of the observation if not seen during the core observation time.

2. **Development:** Describe what the child can do (e.g. Motor functions: reach, grab, sit up, track objects. Language functions: vocalise, babble, express words, gestures. Cognitive Functions: explores objects)

3. **Play and Stimulation:** Describes the games a child plays. Who does she play with? What does she play with? Also make notes about opportunities available in the environment for stimulation (e.g. pots and pans that are available but not used for play). Is child encouraged to play/continue to play by caregiver?

4. **Maternal Involvement:** Describe interactions between mother (or other caregiver) and child (e.g. bathing, dressing, feeding, playing, tending to the child when crying)- What makes the mother upset or scold child (e.g. when child plays in dirt, when child cries). Physical affection shown to child (e.g. kiss, stroke, hug). Mother's tone of voice when interacting with child. Conversations between mother and child (for infants this could be 'baby talk'). When does mother praise child? Is any negative affect shown?

5. **Feeding and interactions:** Describe what is being fed to child and approximate quantity. Describe who feeds the child and who else is present. Note if caregiver is feeding only the case child at this time, or if another child is being fed also. Observe how the mother/caregiver encourages the child to eat? How does she interact with the child during the feeding (e.g. chit chat, play). How long does this take? How does she recognise the child has had enough to eat? If feasible describe how food is prepared (kitchen space).

6. **People/Out and About:** Describe who else comes and goes in the home during the day and if the child goes out at all.

7. **Family dynamics/Support Systems:** Describe any family dynamics observed. Does mother receive any support? Who provides the support? What type of support?

### I. INTERVIEW GUIDE WITH HEALTH WORKER

*Greetings! We are...* (Name of Researcher) *and..*(Name of Researcher) *from..*(Name of organization). *We are collecting information on how you help mothers in taking care of their health and the health of their children, and how families assist mothers in optimising children's growth and development. This is not an assessment exercise. Rather, with your help, we are trying to help mothers and families. The information from this discussion will be used to guide families in the bringing-up their children through improved training system of your programme.*

*Thank you very much for taking time out of your busy schedules. Please let me know if you have any questions about this process.*

*Should we start?*

### II- Current task and workload

2.1     Can you describe the main tasks/activities that you perform as a LHW?

[**Probe:** Which takes up most of your time? Which takes up least time? How do you plan and organize the tasks you do?]

2.2     Of the tasks/activities you do which do you think are most important? Why do you say that?

2.3     How do the families react to the activities/tasks you do?

[**Probe**: level of engagement/interest, acceptability of messages?]

2.4     What are the greatest challenges and difficulties you have doing these tasks/activities? What would improve how you carry out these activities?

2.5     On average how many days a week do you work as a LHW? And on those days how many hours do you work?

2.6     If you could, would you like to spend more or less time on your LHW tasks/activities? Why do you say that?

2.7     How do you balance your LHW work with your family life? What are the challenges you face with this?

2.8    What do you like and dislike about being a LHW? What motivates you to do this work?

2.9    Can you give any example of the good practices and success you had in the community?

2.10   **III- Support, training & supervision**

3.1 Have you been given any training in the last 3 years? How well the training did prepared you for your CBA tasks/activities? How could the training be improved?

[Probe: how much training, main topics of the training, duration & venue of each training, whether they included practical/field exercises; if not mentioned already, ask specifically about training on health & nutrition of mother and child, and child growth?

3.2 What supplies, equipment and materials do you have to help with your LHW tasks/activities? Which equipment/material do you use most? Which do you use least? Why? Have you had any problems or challenges obtaining or using the equipment or materials? Is there anything that would make the equipment or materials more useful?

3.3 In your day to day work, how are you supervised? How often? What happens during supervision? How could supervision be improved?

[**Probe:** group supervision, supervision in the facility, supervision in the community]

3.4 Does anyone check that you carry out your duties or give you feedback on how you are doing? If yes who? How do they check/give you feedback? How often? Are there any problems with the system? Would you like more or less checks/feedback?

3.5 Do you interact with other LHWs? How often/when/what are the interactions about? Are these interactions useful?

3.6 Do you feel like the community values your work? Which aspect do they value most?

3.7 What about your family how do they view your work?


## IV – Home visits

4.1 Can you describe a typical home visits that you make?

[**Probe:** When do you start visiting women? How many times do you usually visit each woman? How long does a visit usually last?]

4.2 How do you plan the visits and decide what to include in the visit?

4.3 Which family members are usually included in a visit? Why those people?

[**Probe:** Family members they think should be included but are not? Inclusion of the husband in the visits and ways this could be achieved?]

4.4 How do you identify pregnant women?

[**Probe:** How well does your identification strategy work? What are the main challenges identifying women?]

4.5 How soon after birth do you usually visit delivered women? How do you identify these women? Would it be possible to visit them on the day of delivery? Why/why not?

4.6 How many women did you visited in the last week? Did you have any challenges with these visits? What about any successes?

[**Probe:** If not able to get information for last week then ask for week before that]

4.7 Which type of families accept and are engaged in your visits and which families do you find harder to visit and give advice to? What advice would you give to other LHWs on how to engage with difficult families?

4.8 Do you arrange group meetings? How you arrange them? What are the topics of group meetings?

- Do you give messages about family planning in the families? How you convey the message? Do you talk to men in the community as well?

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- What problems you face in giving health messages to males? Do you have any solutions to this issue?

- Who are the influential people in the community to give health education to males efficiently and effectively?

## V- Questions about maternal and child health & nutrition

5.1 Can you describe what you do as a LHW to improve the health and nutrition of pregnant or lactating mothers?

[**Probe:** What is done in the antenatal period? What is done around the time of childbirth and afterwards? What is done through home visit, group meetings, and MCHN days? What are specific messages around rest and food? Are any food supplements are provided? Are iron tablets provided?]

5.2 What are the main challenges and successes you have improving the health and nutrition of mothers?

[**Probe:** Problems you have carrying out the tasks? Problems families have following your advice? Are there cultural practices /beliefs that affect the adoption of your advice? What do you do to help overcome these challenges?]

5.3 Can you describe the things you do as a CBA to improve the breastfeeding and nutrition of babies and children?

[**Probe:** What is done in the antenatal period? What is done around the time of childbirth and afterwards? What is done through home visit, group meetings, and MCHN days? Do you give specific messages around initiation of feeding, colostrums, exclusive breastfeeding and weaning?]

5.4 What are the main challenges and successes you have improving the feeding and nutrition of infants?

[**Probe:** Problems you have carrying out the tasks? Problems families have following your advice? What are the cultural practices/beliefs that affect the adoption of your advice? What do you do to help overcome these challenges?]

5.5 Some infants in our communities become malnourished have you ever come across such children? How did you identify them? What did you do? What happened to the child?

- Do you maintain the record of child weight? Is there any other way to identify the malnourished children? What is that? What you do immediately after identifying the malnourished children? Do you give any information about child health and nutrition to the family?

## VI: Referral

6.1 Have you ever referred a child from the community because they have been sick or malnourished? Can you tell me about it? How did you know to refer them? Where did you refer them to? What happened?

6.2 In what situations do you refer children to the facility? What is the process? Is there support for this process? Do families follow the referral?

## VII- Questions about child's development

7.1 Can you tell me what things you observe in a child to know whether the child is growing and developing normally as per her/his age?

7.2 What happens if a child develops slower than expected?

7.3 What can families do to improve the growth and development of their child?

7.4 Let's talk about how children under two years play. When do you think children begin to play? What do you think the reason is that children play?

7.5 Do any of your LHW tasks/activities aim to improve how children develop? What are the major challenges and successes you have had with these tasks?

8.1 If we wanted to improve how children develop in this community by training CBAs to teach families to play and interact with their children from the time they are born what problems could we face?

[Probe: Problems CBAs may have with this new activity? What is acceptability of the new activity? Problems families may have with this new activity?

## J.  GUIDE FOR INTERVIEW WTH SUPERVISOR

*Greetings! We are...(name of Researcher)and ..(name of Researcher) from ..(name of organization). In collaboration with the government of Rajasthan, we are working on a project on child health, growth and development. Your department is likely to be an important part of this project. We therefore want to know about your role as a supervisor and what you think can be done to improve the growth and development of young children.*

*We would first like to know about you*

### II- Questions about supervision & monitoring

**Q 1: What are main tasks/activities that you perform as a LHW supervisor?**

[Probe: Which takes up most of your time? Which takes up least time? How do you plan and organize the tasks you do?]

**Q2: Do you do any other tasks and activities apart from supervising LHW? What are they?**

**Q3: Of the tasks/activities you do which do you think are most important? Why do you say that?**

**Q4: How much time do you spend on supervision related work?**

[Probe: Days per week, hours per day? Would you like to spend more or less time on supervision tasks? Why do you say this?]

**Q 5: What do you like and dislike about being a LHW supervisor? What motivates you to do this work?**

**Q 6: How many LHWs do you supervise and how do you supervise them?**

[Probe: Number and types of contact per month- field visits, group meetings, phone calls? When-any specific days of the month/ week?? Where-in the field, in your office; how to you correct problems]

- How do LHW recognize malnourished children? What information and guidance you provide about care of malnourished children?
- Do you ask LHW to maintain special record of malnourished children?
- Do you visit malnourished children during your visits in field?

**Q7: How could your contacts with LHWs be made more useful**

**Q8: How many times in the last one month have you supervised CBAs on-field? Can you describe one of the visits?**

[Probe: Around what time did you go, how did you go, how much time did it take to reach, how much time did you spend there, what did you there, then where did you go……and so on].

**Q9: Do you provide any kind of training to CBAs?**

[Probe:How often? On which topics? Duration of training? Where are the trainings held? When and what was the last training that you gave?]

**Q 10: What are the main problems LHWs have with their work? (For example, use of contraceptives, difficult families, to give health messages to Male members) How do you help them overcome these problems? What LHW problems do you have most difficulty solving? Why?**

**Q 11: What are the main challenges you have monitoring and supervising the CBAs? What would help address these challenges? [E,g. Transport, lack of time, staff shortage, resources?]**

**Q 12: What tools and support do you receive to help with LHW supervision? What extra tools and support would be useful?**

**Q 13: Who supervises your work and how do they do this?**

[Probe: How often are you visited? What happens during these visits? Does anyone check that you carry out your duties or give you feedback on how you are doing?]

**III- Questions about training**

**Q 14: Have you received any kind of training for your job as supervisor? How well did the training prepared you for your supervisor tasks/activities? How could the training be improved?**

[Probe: When was the last training you received? What was the topic?]

**IV- Questions about LHW programme**

**Q 15: Do LHWs currently do anything to promote the growth and development of children from birth to three years? What more do you think they can do? [Probe: explore role of health department]**

[Probe: What is done in the antenatal period, around the time of childbirth and afterwards? What is done through home visit, group meetings, MCHN days? Specific messages around breastfeeding, food and play? Are any food supplements are provided?]

- Did the devolution of LHW program affect your work? How?
- Your contact with LHW is very important, how this contact can be made more useful after the devolution of Program?

**Q 16: If we wanted to improve how children develop in this community by training CBAs to teach families to play and interact with their children from the time they are born how should we do it and what problems could we face?**

[Probe: Problems CBAs may have with this new activity? Acceptability of the new activity? Problems families may have with this new activity? Problems related to supervision?]

# 7. Consent form

## Sustainable Programme Incorporating Nutrition and Games(SPRING) for Maximizing Development, Growth & Survival(MGDs)

### اجازت نامہ

#### تحقیق میں شمولیت کی دعوت:۔

آپ کو ایک تحقیق میں شرکت کی دعوت دی جارہی ہے۔اس سے پہلے کہ آپ کوئی فیصلہ کریں آپ کا یہ جاننا ضروری ہے کہ یہ تحقیق کیوں کی جارہی ہے اوراس میں کیا ہوگا۔ برائے مہربانی نیچے دی گئی معلومات کو غور سے پڑھیں اور اگر آپ چاہیں تو کسی دوسرے سے مشورہ بھی کرسکتے ہیں۔اگر کوئی چیز سمجھ نہیں آرہی یا آپ مزید معلومات چاہتے ہیں تو آپ ہم سے سوال کرسکتے ہیں۔آپ خوب سوچ سمجھ کر فیصلہ کریں کہ آپ اس تحقیق میں شامل ہونا چاہتے ہیں یا نہیں۔

#### اس تحقیق کا مقصد کیا ہے؟

ہم آپ کے ضلع کے لیڈی ہیلتھ ورکر پروگرام کے ساتھ مل کر ایک تحقیق کررہے ہیں اس تحقیق میں ہم یہ جاننے کی کوشش کریں گے کہ بچے کی بہتر نشوونما اور بڑھوتری کیسے ہوسکتی ہے اوراسے کیسے ذہین اور ہونہار بنایا جاسکتا ہے۔ہم نے علاقے کے کچھ افراد سے انفرادی طور پر تفصیل سے بات چیت کی ہے۔ہم آپ سے بھی کچھ سوالات پوچھیں گے تا کہ آپ سے لی گئی معلومات کو اپنے پروگرام کی بہتری کے لئے استعمال کرسکیں۔

#### طریقہ کار:۔

اگر آپ اس تحقیق میں شامل ہونے پر رضامند ہیں تو ہم لیڈی ہیلتھ ورکر پروگرام کے بارے میں کمیونٹی اور آپ کو درپیش مسائل کے حوالے سے کچھ سوالوں کے جوابات دینے کے لئے مدعو کیا جائے گا۔اور آپ سے فرداً فرداً بات چیت کی جائے گی۔ بات چیت کا دورانیہ تقریباً ایک گھنٹہ ہوگا۔

#### تحفظات / رازداری:۔

آپ جو بھی معلومات مہیا کریں گے اس کو صیغہ راز میں رکھا جائے گا اور صرف تحقیق کے مقصد کیلئے استعمال کیا جائے گا۔ آپ کو اس تحقیق میں شامل ہونے یا نہ ہونے کا اختیار ہے۔ اگر آپ اس تحقیق میں شامل نہیں ہوتے تو اس صورت میں پروگرام کی سہولیات کی فراہمی یا کسی اور حوالے سے کوئی حرج نہیں ہوگا۔اس تحقیق کے دوران آپ کے نام کی رازداری کا بھی خیال رکھا جائے گا۔

#### ممکنہ فوائد:۔

آپ کی دی گئی معلومات کی روشنی میں کمیونٹی اور بچوں کی صحت اور نشوونما کی بہتری کے حوالے سے اقدامات کرنے میں مدد ملے گی۔

#### شمولیت ختم کرنے کا فیصلہ:۔

کسی بھی وقت حتیٰ کہ دوران انٹرویو گفتگو آپ تحقیق میں شمولیت ختم کرسکتے ہیں۔ آپ کو اس سے کسی قسم کا کوئی نقصان نہیں ہوگا اور آپ ان تمام تر سہولیات کے حقدار رہیں گے جو آپ کو عام حالات میں ملتی ہیں۔

معلومات کے ذرائع :۔

تحقیق سے متعلق سوالات کے لئے

اخلاق احمد

فون نمبر 051-4864249

اجازت :۔

میں نے یہ فارم پڑھ اور سمجھ لیا ہے اور میں رضاکارانہ طور پر اس تحقیق میں شامل ہوتا رہتی ہوں۔ میں جانتی رجانتا ہوں کہ مجھے اس فارم کی ایک کاپی دی جائے گی۔ میں نے رضاکارانہ طور پر اس تحقیق میں شمولیت کا فیصلہ کیا ہے۔ لیکن میں جانتی رجانتا ہوں کہ اس رضامندی کے باوجود کسی غفلت یا غلطی کی وجہ سے میرے قانونی حقوق پر کوئی اثر نہیں پڑے گا۔ میں جانتا ہوں رجانتی ہوں کہ اس رضامندی فارم میں کسی ریاستی یا مقامی قانون سے کوئی چیز متصادم نہیں ہے۔

شامل ہونے والے کا نام :۔ ------------------------------------------------

تاریخ :۔ ------------------------------------------------

شامل ہونے والے کے دستخط :۔ ------------------------------------------------

تاریخ :۔ ------------------------------------------------

رضامندی لینے والے کے دستخط :۔ ------------------------------------------------

تاریخ :۔ ------------------------------------------------

**8. Training program for feasibility study**

**Training Program for Feasibility Study**

## 5 days classroom training program of feasibility study-phase 1

| Days | Morning Sessions | Time | Afternoon Sessions | Time |
|---|---|---|---|---|
| 1st Day<br><br>27th of August | Introduction of the Participants.<br><br>Pre-Test<br><br>Introduction of the Roshan Kal | 9:00am to 9:15am.<br><br><br><br>9:15am to 9:35am | 1st pillar<br><br>2nd Pillar.<br><br>3rd Pillar<br><br>Break | 10:15-11:10<br><br>11:15am to 12:00pm<br><br>12:00-12:45pm |
| 2nd Day<br><br>28th of August | **Visit No. 1** (Introducing Roshan Kal to the family,).<br><br>**Visit No. 2** (Anemia and Iron). | 9:00am to 10:15am<br><br>10:15am to 11:00am.<br><br>11:00am to 11:15am | **Visit No. 3** (Preparing a Suitable Environment for the Child).<br><br> Break. | 11:15am to 12:45pm<br><br><br><br>12:45pm-1:00pm<br><br>1:00pm to |
| 3rd Day<br><br>29th of August | **Visit No. 5** (Preparations for the Arriving Baby)<br><br>**Visit No. 6** (Responsive Breastfeeding).<br><br>Tea Break. | 9:00am to 10:00am<br><br><br><br>10:00 am to 11:00am<br><br>.11:00am to 11:15am | **Visit No. 7** (Birth Spacing for Suitable Environment, Interaction with the Child and Play). | 11:15- 2:30 |

| 4th Day 30th of August | **Visit No. 8** (Interaction and learning through Play for the children of 1-3 Months<br><br>Tea Break.<br><br>**Visit No. 8** (Interaction and learning through Play for the | ) 9:00am to 11:00am.<br><br>11:00am to 11:15am<br><br>11:00am to 12:45pm. | Break.<br><br>**Visit No. 9** (Messages for better childrearing given at 4 months)<br><br>**Visit No. 10** (Introducing Semisolids and Modern Methods of Birth Spacing). | 12:45pm-1:00pm<br><br>1:00pm-1:45pm<br><br>1:45pm to 2:30pm |
|---|---|---|---|---|
| 5th Day 31st of August | Supervision Protocol<br><br><br>Tea Break | 9:00am to 11:00am<br><br>11:00am to11:15am | Field Training discussion<br><br>Post test<br><br>Satisfaction Questionnaire | 11:15am to 11:45am1<br><br>11:45am to 12:15pm<br><br>12:15pm to 12:45pm |

## Phase II Classroom Training Program

| Days | Morning Sessions | Time | Afternoon Sessions | Time |
|---|---|---|---|---|
| 1st Day, 27th of Dec. | Recap of RK I connecting it with RK II Visit 1 (Responsive Complimentary Feeding) Tea Break | 9:00 am to 10:00 am<br><br>10:00am to 11:00 am<br><br><br>11:00 am to 11:15am | Visit 2 (Food and Play at 7th month) Visit 3 (Super Food, A Nutritious Food) | 11:15am to 12:30pm<br><br>12:30pm to 2:00pm |
| 2nd Day, 28th of Dec. | Revision of Day 1 Visit 4 and 5 | 9:00am to 9:30am | Play and Interaction Activities for | 11:15am to 2:00pm |

| | | | | |
|---|---|---|---|---|
| | (Encouraging Finger Foods) Visit 6 and 7 (Important messages about food and play according to child's age) Tea Break | 9:30am to 10:15am<br><br>10:15am to 11:00am<br><br><br><br>11:00am to 11:15am | 6-12 months old children | |
| 3<sup>rd</sup> Day, 29<sup>th</sup> of Dec. | Revision of RK II Visit 1 (Physical. Mental and Nutritional Needs of 12-24 months old Children) Tea Break | 9:00am to 9:30am<br><br>9:30am to 11:00am<br><br><br><br>11:00am to 11:15am | Play and Interaction Activities for 13-24 months old children | 11:15am to 2:00pm |

# 9. Structured checklist for LHW Observations

| CHECKLIST for observations of LHWs delivering 5P in the community | |
|---|---|
| **5P Component / Technique** | **Performed correctly** |
| 1. **Family support** | |
| Involves key family members in the discussions | |
| Encourages family members to support mother and infant | |
| 2. **Empathic listening** | |
| Greets the mothers | |
| LHW has a friendly exchange with the mother (e.g. makes eye contact. smiles, friendly tone) | |
| Asks how the mother and/ child is | |
| Shows he/she is listening (nods, eye contact, acknowledging sounds) | |
| 3. **Guided discovery** | |
| Shows the picture and asks the family what the picture shows | |
| Explains the picture and discusses the positive behaviour | |
| 4. **Behavioural activation** | |
| Uses positive words and gestures when the mother says something right | |
| Counsels in steps rather than only giving advice | |

| 5. **Problem solving** | |
| --- | --- |
| Asks about problems the family may have in putting the advice into practice | |
| Empathizes with the problems | |
| Discusses ways of overcoming the problems | |
| Discusses getting support from the wider family to overcome problems | |

**10.Tools for feasibility study**

**FGD GUIDE**

**1.** Introducing one self
2. Thank LHW for being part of the pilot
3. Information about the aims of the FGD (their views on what they learnt during the trainings)
4. Informed Consent for participation, audio recording
5. Anonymity, confidentiality
6. Can Refuse to participate

Questions

1. How did you feel about this training?
2. What were the most important things that you learnt in this training?
3. Which parts of the training did you find most relevant to you work?
4. Would you want to use this approach in your work? If no why not?
5. Do you feel confident that you can use this approach? Which areas covered in the training do you feel you additional support or training in?
6. What challenges do you think you will encounter when you try out what you have learned?
7. Do you think this approach is appropriate for your community?
8. How will the community react to this approach in your opinion?

**Semi structured interview guide for LHW's: 2-3 months post training**

**Aim:** After having implemented the new maternal and child health intervention for some time, what are the views of the LHW about various implementation aspects including of this new intervention?

1. **Background**

1.1 LHW ID:

1.2 Interview date:

1.3 Interview start time:

1.4 Interview end time:

1.5 Age of LHW:

1.6 Length of time as a LHW:

1.7 Education level:

1.8 Place of residence:

**Introduction**

Greetings! We are...(name of Researcher) and ..(name of Researcher) from Health Services Academy, Islamabad. We are collecting information on the SPRING intervention for which you had been trained. Your views are very important for us and this information will be used to help other families in the brought-up of their children.

Thank you very much for your time.

| No. | Question | Sub-questions |
|---|---|---|
| | Let us begin by listening from you about the new intervention. So, please tell us something about your experiences. | How many visits have you conducted during the past X months? In how many of these visits did you talk about components of SPRING program or used MPW approach? |
| | | What other main topics were typically discussed during these MCH visits? |
| | | Maternal nutrition and wellbeing is one part of SPRING. What was easy and difficult while delivering this part? |
| | | Child nutrition is 2nd part of SPRING. What was easy and difficult while delivering this part? |
| | | Interaction and play is the 3$^{rd}$ part of SPRING. What was easy and difficult while delivering this part? |
| | | What was easy and difficult for mothers or families about each of the 3 components of SPRING i.e. maternal wellbeing, child nutrition and child interaction & play? How? |
| | Please tell us something about the proceedings of a visit in which you addressed the new component? | How did you usually begin the discussion? Which of the 3 parts was addressed first and why? |
| | | On average, how much time did you give to the SPRING topics and how much you spent on other topics? |
| | | How often did you carry the counselling cards with you? How did you use it? |
| | | How helpful were the counselling cards? In what ways |

could they be improved?

How often did you carry the health calendar with you? How did you use it?

How helpful was the health calendar? In what ways could it be improved?

| | |
|---|---|
| Families can have the environment and context of their own. Tell us about how at times you may have adapted the content and conduct of a visit? | What were the usual situations in which you made changes from the ideal plan in a visit?<br><br>How often did this happen during the last X visits?<br><br>What were the main reasons in your mind when you adapted or modified a visit?<br><br>In what ways did you change what you talked about in a visit? In what ways did you change how you carried out the visit? |
| What are your views about the backup support that was available to you during the period while you were carrying out these visits? | How often did you attend the X number of routine supervision meetings headed by your supervisor at your health center? To what extent was SPRING discussed and issues related to it addressed during these meetings?<br><br>To what extent did you find any support or help you needed from the supervisor during those meetings?<br><br>Did you find additional supervision support during these meetings? Was it helpful; how?<br><br>How important was this additional support for the new component? Could you do a good job with the new program on your visits without this support? Could other LHWs do a good job with the new program without the additional supervision? |
| How do you think the mothers and their families are reacting to you and to the new component? | Has your relationship with mothers changed in any way after you started to use the new program?<br><br>Out of the 3 SPRING parts, which one was the most challenging in terms of communicating during this program?<br><br>Did mothers seem to like the new program? Did fathers and other family seem to like the new program? |

| | |
|---|---|
| Is there anything that can be helpful to enhance the implementation at the mother and family level? | Was there anything about doing the new program that was difficult for families? What about doing the program seemed easy for the families to do? |
| | The new intervention relies on building mother's capacity for being resourceful when promoting her childrens' health. How successful do you think the program has been? What will help in further improving it? |
| | Increasing family support for the mother and child is also part of this new program. How much has your counseling helped to increase family support? What are the challenges to this? How can we address these challenges? |
| What is your advice on improving the chances for sustainability of new programs like SPRING? | What are some of the difficulties that other LHWs will have adding this program in their current visits? How we can address these difficulties? |
| | What are some things that other LHWs will like about this program? |
| | Which of the job-aids do you think should be provided to all LHWs? Why? |
| | What other changes do you recommend to the job-aids or to the training program in general? |

**Semi structured interview guide for mothers**

**Aim**: To explore what does a mother's work and life look like, how she and her family members were taking care of child's health and development, and what are her views about the new child health messages?

1. Mother's ID:
2. Interview date:
3. Interview start time:
4. Interview end time:
5. Age of mother:
6. Number of children (if applicable):
7. Education level:
8. Place of residence:

Introduction

Greetings! We are...(name of Researcher) and ..(Name of Researcher) from Health Services Academy, Islamabad. We are collecting information on how mothers and families take care of their children's growth and development. This information will be used to help other families in the brought-up of their children.

Thank you very much for your time.

| No. | Question | Sub-questions and probes |
|-----|----------|--------------------------|
| | Let us begin by talking about yourself and your views about being a mother. | In your daily life, what are some of the things that make y happy? What things make you unhappy? |
| | | What do you imagine your children's future will be like? What do you want them to be in their professional life? In family life? |
| | Please tell us something about the LHW visits. | How long have LHWs been visiting your home? |
| | | How has your LHW helped you? |
| | | How has your LHW helped your child be healthy? |
| | | Does the LHW listen to your problems? |
| | | Does she provide solutions? |
| | | Does she involve other family members to find solutions? |
| | | Has she selected a support person from the family for the child care? |
| | | Does the LHW use pictures? How do you feel about those |
| | | What does the LHW do if you can not follow her advice? |
| | | How did you find the calendar? Was it helpful? |
| | Please tell me about how you take care of your child? | How do you feed your child? |
| | | Exclusive breastfeeding |
| | | Complementary feeding |
| | | What other things do you do for your child? |
| | | Do you ever play with your child? |

Do you talk to the child using words? Without usi8ng words?

How much does the child's father and other family members get involved in raising your child?

In feeding the child/

In playing and interacting with the child?

In the past couple of months; have you made any changes to the way you take care of your child?

 If yes:

What were these new changes?

Why did you make these changes?

Did the LHW help you with any of these changes?

What was the most important among these changes?

If not:

Did you hear anything new from your LHW about child care during the past couple of months?

Do you remember what was it and how she talked about it?

Was there anything that kept you from following the LHWs recommendations for taking care of your child?

How would you describe your experience of feeding and taking care of the child after receiving new messages?

Tell us things that you liked about:

Your own nutrition and wellbeing?

The child's nutrition?

Interaction and play?

Tell us things that you did not like about:

Your own nutrition and wellbeing?

The child's nutrition?

Interaction and play?

How much do you think you will be able to use the new learning in your daily life?

What are your views about using this information on a long-term basis?

In the long run, what will help you carry out this new advice?

What are likely challenges in this implementation in the long run?

What would help make it easier for you to make these changes in your daily life?

What steps would likely improve the LHW visits and ultimately the child care at your home?