Psychological distress during pregnancy in a conflict-affected area in Pakistan: A study of prevalence, risk factors, and an intervention to improve awareness

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

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Abstract

Background

Humanitarian emergencies, including conflict, are a known risk factor for common mental disorder. The impact of such an emergency on the mental health of women in the perinatal period has not been studied. This is important because, in addition to personal and family distress, poor perinatal mental health has a negative impact on infant development and contributes to intergenerational disadvantage. Lack of awareness about such conditions hinders appropriate help seeking. This study, which was conducted in a post-conflict area in Swat, Pakistan, had the following aims: a) to determine the prevalence and associations of psychological distress in perinatal women, and; b) to evaluate the feasibility of a psychoeducational intervention to improve awareness of common mental disorder amongst such women and their families.

Methods

The study was conducted in a rural area in Swat that had witnessed a decade-long armed conflict between the military and local insurgents. Study participants included all pregnant women on the list of local community health workers (Lady Health Workers) aged 17 to 45, living in the study area and not suffering from a physical disorder. Psychological distress was assessed using the Self Reporting Questionnaire (SRQ). Conflict-related traumatic events were measured with the Harvard Trauma Questionnaire (HTQ). Stressful life-events and perceived social support were measured by the Life Events Checklist and the Multidimensional Scale of Perceived Social Support (MSPSS), respectively. Information was also collected on demographic and socio-

economic variables. Half of the women who scored =>9 on the SRQ (n=34) were randomised to receive a 2-session psychoeducational intervention, and the remaining (n=37) acted as controls. Outcomes including appropriate help-seeking, perceived social support and levels of psychological distress were measured 2 months after intervention delivery.

Results

The prevalence of psychological distress (SRQ score =>9) was 38.1%. Psychological distress was positively associated with four or more traumatic events and there was a dose-response relationship, with levels of psychological distress increasing with an increase in the number of traumatic events [4 events (OR=2.80, 95% CI: 1.18 to 6.65), 5 (OR=2.85, 95% CI: 1.04 to 7.79) and 6 or more (OR=4.62, 95% CI: 1.59 to 13.44)]. Psychological distress was also independently associated with three or more stressful life events in the post-conflict year. Family support and living in a joint family was protective, as was being primi gravida. There was very low level of recognition of psychological distress in the trial participants at the baseline. Following intervention, more women sought assistance for their distress from their community health worker in the intervention arm, compared to women in the control arm (71% intervention arm vs 46% control arm P= 0.036). There was no difference in the levels of perceived social support or severity of symptoms although mean reduction of SRQ score from baseline was significantly more in the intervention arm compared to control arm. There was a high response rate, and attrition rates were low.

Conclusions

This study is one of the first epidemiological studies to assess the prevalence of psychological distress during pregnancy in an area affected by conflict. The study shows that over a third of all

women show evidence of significant psychological distress, and are likely to be suffering from a common mental disorder. A psychoeducational intervention to improve awareness and appropriate help seeking showed promising results in the context of this rural post-conflict setting.

Declaration

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis. Furthermore, the material contained in this thesis has not been presented, nor is currently being presented, either wholly or in part for any other degree or qualification.

About the author

I was born and grew up in the beautiful valley of Swat in Northern Pakistan. I obtained my early education in Swat and studied medicine at Ayub Medical College in Abbottabad. In these formative years, I saw the transformation of my hometown and its surrounding district from a peaceful, progressive society to one that was disturbed by frequent unrest and, at times, violence. There were times when we had to leave our village and spend prolonged periods of time in Peshawar or Islamabad. My thesis describes the history of the unrest in some detail. But what affected me most was the impact that these events had on the local population – my family, and our community. I experienced first-hand the distress and uncertainty posed by the situation, and the long-term impact it had on one's well-being.

Following my medical degree, I decided to pursue a career in public health. I was interested in maternal and child health, as I felt this was the area where one needed to invest for a healthy future generation. I got valuable experience working as a Field Officer for the WHO's Polio Eradication Programme in Swat. I then did my Masters in Public Health at the Health Services Academy, Islamabad Pakistan in 2009. Following this I took up an academic post at the department of Research and Development at the Health Services Academy – a premier Public Health institution in Islamabad. I was then fortunate to be awarded a prestigious scholarship by the Higher Education Commission in Pakistan to pursue a topic of study that was of importance to Pakistan's public health context. I could not think of a topic more important than maternal mental health, in the context of the humanitarian crises that had taken place in my home district.

Over the last 4 years, I have been fortunate to study the impact of conflict on women of child-bearing age in Swat, and to pilot an intervention that could raise awareness about maternal depression, a hidden disorder. Following my PhD, I plan to return to my home town, and work towards improving the lives of the many who are suffering due to the situation that continues to prevail in many parts of Pakistan.

Acknowledgments

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I am grateful to the people behind the numbers- all those women and their families who were part of this thesis. I would like to thank the health staff at the primary care centres and especially the Lady Health Workers and their supervisors for their support – without them this study would not have happened.

Of course, none of this would have been possible without my team in Pakistan. I am grateful to Human Development Research Foundation (HDRF) for financial assistance in completing the field work, and Dr. Siham Sikander for his valuable inputs throughout the course of my research activities. Importantly, I would like to thank my field team in Swat - Mr Nasir Ali Khan, Miss Shah Bibi, Miss Nusrat Shaheen and Miss Alia Khattak.

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Abbreviations

AKUDS	Aga Khan University Anxiety and Depression Scale
ANP	Awami National Party
BBC	British Broadcasting Corporation
BDI	Beck Depression Inventory
BHU	Basic Health Unit
CBT	Cognitive Behavioural Therapy
CES-D	Centre for Epidemiological Studies – Depression
CH	Civil Hospital
CI	Confidence Interval
CIDI	Composite International Diagnostic Interview
CIS-R	Revised Clinical Interview Schedule
CMD	Common Mental Disorders
CPRS	Comprehensive Psychopathological Rating Scale
DCO	District Coordination Officer
DDHO	Deputy District Officer Health
DQ	Developmental Quotient
DSM-IV	Diagnostic and statistical manual of mental disorders, 4th edition
DSS	Demographic Surveillance System
EDOs	Executive District Officers
ESMGT	Emotional Self-Management Group Training
EPDS	Edinburgh Postnatal Depression Scale

FP	Family Planning
GDP	Gross Domestic Product
GHQ	General Health Questionnaire
GP	General Practitioner
HDRF	Human Development Research Foundation
HSA	Health Services Academy
HTQ	Harvard Trauma Questionnaire
IASC	Inter-Agency Standing Committee
ICD	International Classification of Diseases
IDPs	Internally Displaced Persons
IUGR	Intra-Uterine Growth Restriction
K10	10-item Kessler psychological distress scales
K6	6-item Kessler psychological distress scales
LBW	Low Birth Weight
LEC	Life Events Checklist
LEDS	Life Events and Difficulties Schedule
LHS	Lady Health Supervisor
LHV	Lady Health Visitor
LHW	Lady Health Worker
LMIC	Low Middle Income Countries
LTP	Learning Through Play
MCH	Maternal and Child Health
mhGAP	Mental Health Gap Action Programme

MHPSS	Mental Health and Psychosocial Support
MINI	Mini International Neuropsychiatric Interview
MSPSS	Multidimensional Scale of Perceived Social Support
NETSCC	National Institute for health research Trials and Studies Coordinating Centre
NIPS	National Institute of Population Studies
NWFP	North West Frontier Province
OR	Odds Ratio
PAIMAN	Pakistan Initiative for Mothers and Newborns
PAS	Psychiatric Assessment Schedule
PATA	Provincially Administered Tribal Area
PEI	Polio Eradication Initiative
PHC	Primary Health Centre
PHQ	Patient Health Questionnaire
PIQ	Personal Information Questionnaire
PTEs	Potentially Traumatic Events
PTSD	Post Traumatic Stress Disorder
RCTs	Randomized Controlled Trials
RHC	Rural Health Centre
ROC	Receiver Operating Characteristic
S.D	Standard Deviation
SCAN	Schedule for Clinical Assessment in Neuropsychiatry
SCID	Structured Clinical Interview
SPSS	Statistical Package for the Social Sciences

SRQ	Self-Reporting Questionnaire
SWIRS	Satisfaction with Interpersonal Relationships Scale
THP	Thinking Healthy Programme
THQ	Tehsil Head Quarter
TNSM	Tehreek Nifaz-e-Shariat-e-Muhammadi
UK	United Kingdom
UNHCR	United Nations High Commissioner for Refugees
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
US	United States
WHO	World Health Organization
WONCA	World Organization of Family Doctors

Structure of the thesis

This research conducted for my PhD consisted of two linked studies, and this is reflected in the layout of the thesis. The first study (Study 1) is related to the prevalence and risk factors of psychological distress, and is described in Chapters 1 to 5. The second study, related to evaluation of an intervention to improve awareness about psychological distress, is described in Chapters 6 to 10.

Part 1 (Chapters 1 to 5)

Chapter 1: Describes the background to the study and settings in which it was conducted, along with a brief history of the conflict and militancy in the region. The current literature on the impact of such humanitarian emergencies generally, and specifically on pregnant women, is summarised.

Chapter 2: Describes the aims and objectives of Study 1.

Chapter 3: Describes the methodology for conducting Study 1.

Chapter 4: Describes the findings from Study 1.

Chapter 5: Discusses the findings in relation to other literature in Pakistan and other regions of the world, and the implications of the findings for future research and policy.

Part 2 (Chapters 6 – 12)

Chapter 6: Describes current approaches to psychosocial support for populations exposed to humanitarian emergencies. A brief review of psychosocial interventions for perinatal mental health in Low and Middle Income (LAMI) countries is described, including a brief description of the intervention evaluated in this study.

Chapter 7: Describes the aims and objectives of Study 2.

Chapter 8: Describes the methodology for conducting Study 2.

Chapter 9: Describes the results of Study 2

Chapter 10: Discusses the findings in relation to other literature in Pakistan and other regions of the world, and the implications of the findings for future research and policy.

Author's contribution to this research

I was physically based in the study area for the duration of the planning and field-work, and led the small research team in Swat. I therefore had responsibility for designing, planning as well as execution of all the research activities, supported by my supervisors and advisors from the Human Development Research Foundation a non-profit research organization in Islamabad. I adapted all the measures used in the study. I liaised with the local health administration for smooth execution of the study. I organised and monitored all field activities. On a daily basis, I checked, entered and cleaned the data. I conducted the analysis, and interpreted the findings.

PART ONE

Chapter 1: Introduction

This chapter begins with a description of the setting where the research was carried out. The setting is explored in terms of its location, demography, history and the humanitarian emergency situation. The literature pertaining to mental health consequences of humanitarian emergencies is then reviewed. Finally, the chapter focuses on perinatal mental health, which is the key topic of study.

1.1. Research setting: the district of Swat

1.1.1. Location

Swat is an administrative district in the Khyber Pakhtunkhwa province of Pakistan. It is one of the districts comprising the Khyber Pakhtunkhwa's Malakand Division within the Provincially Administered Tribal Area (PATA). Swat is around 260 kilometres from Islamabad, the capital of Pakistan. Swat district is bordered by Chitral and Ghizer districts in the North, Kohistan and Shangla districts in the East, Buner and Malakand districts in the South and by the districts of Upper and Lower Dir in the West (see Figure 1.1). The total area of the Swat district is 5337 square kilometre which is divided in two tehsils (sub districts), namely Matta and Swat, having areas of 683 and 4654 square kilometres, respectively. Swat is a mountainous district, located among the foothills of the Hindu Kush mountain range at 600 meters above sea level in the South and rising sharply up towards the North to around 6,000 meters above sea level (Public Policy Research, 2010, PAIMAN, 2009, Sultan-i-Rome., 2008).

Swat is mostly an agrarian community as around 50% of economic activities are accounted for by agriculture. However, other sectors including industry, trade, mining, business and public service also contribute to the economy. Agriculture is the main source of income for much of the rural population of the district. Cultivated land is mainly at the southern part of the district as the northern part is mainly mountainous. Swat River is the main source of irrigation. The main crops produced locally are wheat, maize, vegetables, fruits, sunflower and soya bean. (Public Policy Research, 2010, Bangash, 2012).

1.1.2. Demography

The population of Swat is estimated to be approximately 1,743,361 persons (PAIMAN, 2009). The male to female ratio is 106 to 100. Eighty-six percent of the population lives in rural areas with the average household size of 8.8 persons. Male literacy measured as education of 10 or more years is 43%, and female literacy rate is 14% (Pakistan Bureau of Statistics, (2014)). The population groups according to this projected figure have been summarized in Table 1.1 below.

Table 1.1: Population groups in Swat

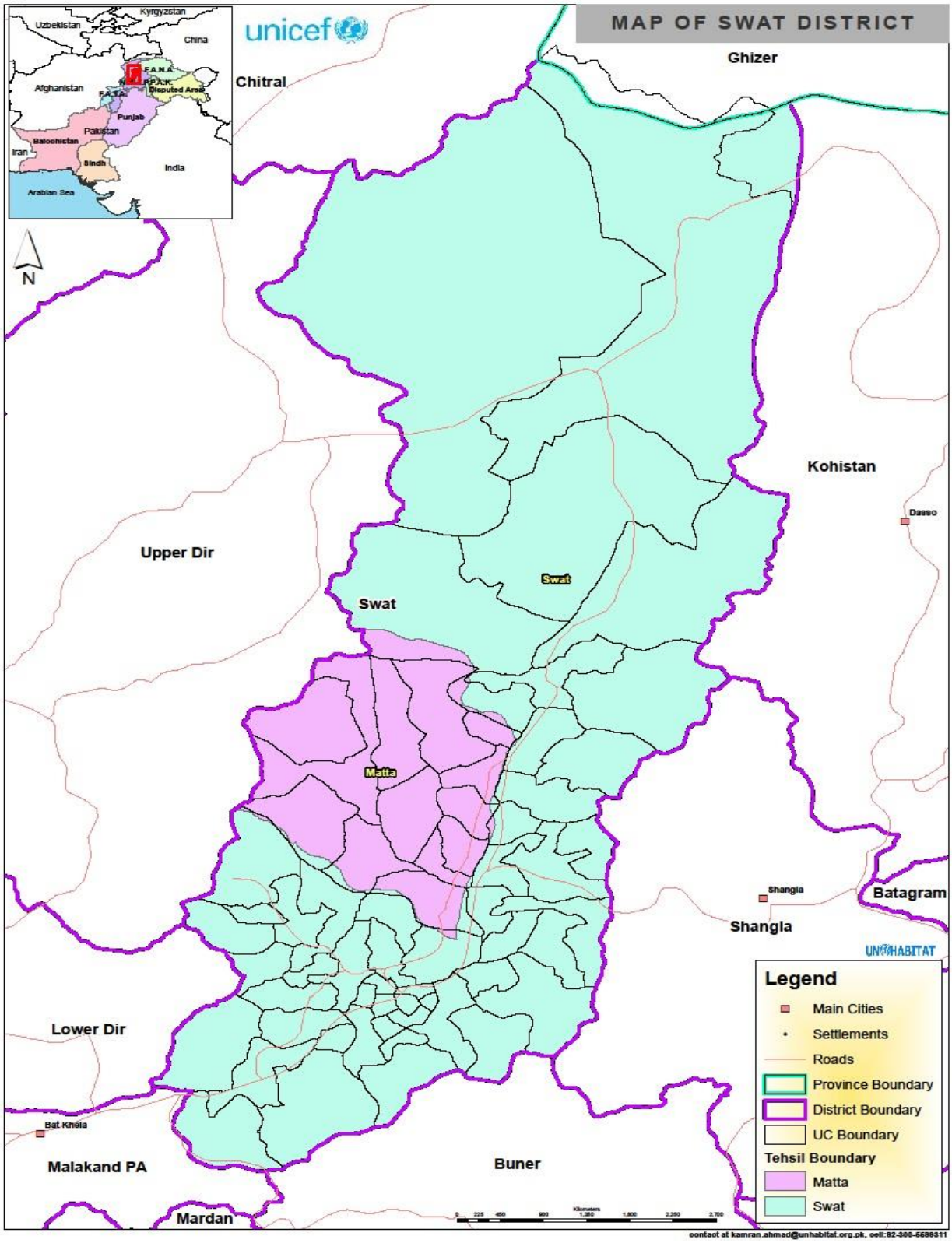
Population group	% of total population	Estimated population in 2008
Under 5 years	15.87	276671
0-14 years	44.04	767776
Women of child bearing age (15-49 years)	21.8	380053
Pregnant women	4.5	78451

Sourced from (PAIMAN, 2009).

1.1.3. Administration and health facilities

Administratively, as elaborated above, Swat is divided into two sub-districts: Swat and Matta. The smallest geographical administrative unit is the Union Council, and there are 65 Union Councils in district Swat (Pakistan Bureau of Statistics, (2014)). District Swat, like any other district of the country is administratively headed by the District Coordination Officer (DCO). DCO is appointed by provincial government and coordinates with Executive District Officers (EDOs) heading each of the district offices, including health. The EDO in health care delivery is assisted by the Deputy District Officer Health (DDHO) and other coordinators at the district level for many vertical programs. The district has one Tehsil Head Quarter hospital (THQ), 6 Civil Hospitals (CH), 3 Rural Health Centres (RHCs), 41 Basic Health Units (BHUs), 3 Maternal and Child Health centres (MCH), 17 Dispensaries, 3 Leprosy Clinics, one Reproductive Health Service, and 22 Family Welfare Centres (PAIMAN, 2009). Most of the union councils have a Basic Health Unit (BHU) with a workforce comprising of the following: a primary care physician in charge of the health facility; a Medical Technician; a Lady Health Visitor (LHV) to deal with the reproductive health issues; a vaccinator for vaccine administration, midwives to assist the LHV; and Lady Health Workers (LHWs). Roles and responsibilities of LHWs are described in detail in Section 6.5.2.

Figure 1.1: Detailed map of Swat with neighbouring districts



Notes: Sourced from UNICEF.

1.1.4. History of Swat

It is relevant to discuss the history of Swat in some detail in order to understand the evolution of the conflict and the current situation, and the context of the humanitarian crises in which the study was conducted.

The history of Swat can be traced back to over 2300 years from the time when Alexander the Great arrived here en route to India. Swat has been ruled by a number of dynasties including the Persians, Huns, Moryans, Ghaznis, Mughals, and more recently, the British. Even when under the influence of these dynasties, Swat retained its tribal culture and system and local chiefs such as the Khans, Akhunds, Wali, Bacha Sahib and Yousafzais ruled in alliance with these dynasties. During British rule in the early part of the 20th century, one of these chieftains, Miangul Abdul Wadood established a semi-independent state in Swat and became the first *Wali* (head of state). Early in his rule he started several developmental works and schemes, including education and health facilities. He also controlled and regulated arms possession. These changes were brought about based on a model developed through a mixture of traditional values, Islamic laws and contemporary norms. A period of peace, tranquillity and progress ensued in the area. In addition, Swat state developed its own judicial system based on customary codes of conduct known as *Dasturul Amal,* rather than strict Islamic laws. Decisions were made quickly and at a low cost and hence justice was easily accessible to the common man. Miangul Abdul Wadud's improvements in the social and economic development of Swat were continued by his son, Miangul Jahanzeb (Fleischner, 2011, Sultan-i-Rome., 2008, Sultan-i-Rome., 2011). Miangul Jaganzeb was the last *Wali* of Swat prior to the merger of the area in 1969 into Pakistan's administrative and legal structures. The merger lead to the Swat district becoming part of the Provincially Administered Tribal Areas (PATA) of Pakistan (Sultan-i-Rome., 2008).

The merger with Pakistan meant a new administrative system and a slowdown in the previous socio-economic development. The new administration was characterized by federal and provincial centralization and bureaucratisation where all laws had to be approved centrally by the President of Pakistan (Article 247 (3) of the constitution of Pakistan). Thus, the provincial government had no real constitutional or legislative power and was there to carry out the orders from the centre. As a result the previous more straightforward and acceptable process that had characterised Swat's administration prior to 1969 became technical, lengthy and costly in all areas but especially law and order (Sultan-i-Rome., 2011).

This was the beginning of unrest within the district, and to some extent was exploited by political forces, including religious parties, that hankered to the nostalgia for *Sharia* or Islamic system (as many believed) of jurisprudence that had existed prior to the dissolution of the princely state (Zafar, 2011). Maulana Sufi Muhammad, a cleric from neighbouring district Dir, was an active member of Jamaat-e-Islami, a conservative religious party. Signs of trouble first appeared in the Swat valley following his rise to power (Christine, 2007). In 1989, Maulana Sufi Muhammad left Jamaat-e-Islami and formed Tehreek Nifaz-e-Shariat-e-Muhammadi (TNSM - Movement for the Enforcement of Islamic Shariah) and demanded *Sharia* law in Malakand (Bangash, 2012). This was the beginning of the conflict and humanitarian crisis that continue to the current day.

1.1.5. Events leading up to the major conflict in 2008

The next 2 decades (1989 to 2009) were marked by unrest and violence interspersed with periods of stability. The Sharia Movement of the cleric, Mualana Sufi Muhammad gained momentum in the coming years, feeding off the dissatisfaction of the local populace to the corruption and inefficiencies of the central government. There were many clashes between the TNSM

supporters and security agencies often leading to casualties on both sides. (Sultan-i-Rome., 2009). In 1994, the political government of the time signed an agreement with Sufi Muhammad and agreed on the implementation of Sharia laws through the Nizaam-e-Shariat Regulation (Shariat-based justice system). However, the laws were not fully implemented and the unrest and tussle between government and the clerics continued.

The events of September 2001 in the US, followed by the US-led invasion of Afghanistan led to dramatic developments in the region, and especially Swat. Sufi Muhammad led around 10,000 mainly young and poorly trained and equipped men to fight against the US forces in Afghanistan (Ali, 2009) where many of the young men were killed. On Sufi Muhammad's return the Pakistani government jailed him and banned TNSM. However, in 2004, despite this clampdown, the movement continued to grow as another cleric, Maulana Fazalullah, (Sufi Muhammad's son in law) took charge. Fazalullah used unauthorised radio channels very effectively to propagate his ideas (hence his nickname Mullah FM). He used the events in Afghanistan and the Pakistani government's support of the US forces to discredit the state and foment rebellion. As his popularity grew he discouraged parents from sending their daughters to schools, and his followers set fire to girls' schools in the district (events leading to the well-known shooting of Malala Yousafzai, the school-girl activist for girls' education in Swat) He also spoke out against television and music which led to thousands of televisions being set on fire (Bangash, 2012, Khan, 2007, Khattak, 2010, Witte and Ali, 2007).

In the beginning, both the provincial and central governments did not react to this evolving rebellion in the district, and this emboldened the clerics and their followers to ignore the writ of the state and form their own parallel government, resorting to more extreme activities such as

public executions, targeted killings and destruction of public property (Khattak, 2010). After a series of failed attempts at negotiation and peace-deals, the Army launched an unprecedented military operation in late April 2009. Local residents were asked to vacate the area and nearly 2.5 million people were internally displaced to various cities in the province including Peshawar, Mardan, Swabi, Charsada, Nowshera to either live in camps, with relatives or in rented houses (Khattak, 2010, Bile and Hafeez, 2009). In the months of fighting, many militant commanders were killed, and their Swat spokesman, Muslim Khan, was arrested in September (Khan, 2009, Zafar, 2011). Nearly 1,300 militants were killed in the 2009 operations in Swat, Dir, Buner, and Shangla districts, and hundreds more arrested (Khattak, 2010).

At the end of July 2009, the government and military commanders claimed success and internally displaced persons began to return. The destruction to the land and people of Swat was enormous, a situation exacerbated by the behaviour of security forces towards the civilian populations with no respect for local values and traditions. Upon arrival of the people, *Lashkars* (group of people formed from the local residents to combat any militancy in the local area) were formed by the army. These *Lashkars* were given the authority to take up arms and make decisions such as exile people, burn or destroy houses, remove property etc. Moreover, the security forces compelled the civilians to take part in night-time patrols/watches and search operations against militants. They had no respect for the sanctity of the veil and privacy of houses during search operations, occupation of private property for military use and non-payment of rent, minimal compensation for buildings destruction during course of operations, banning cultivation of certain crops like maize, ruthless cutting of trees, forcing the entire area to have security passes, target killings of notables and a number of security check posts in the area

caused great stress to the population, who were caught between the militants and the Army (Sultan-i-Rome., 2011).

While peace has been restored in the region, the situation described above continues to the current day. It is in the backdrop of these events, both the conflict and the post-conflict situation, that my study was conducted.

1.2. Mental health consequences of humanitarian emergencies

Before proceeding to the literature review, it would be useful to describe the nosology of commonly used terms in the field.

Depression: According to the International Classification of Diseases (ICD-11) "depression is a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration". Depression can substantially impair a person ability to function in his daily life activities. The condition can be long-lasting or recurrent in nature (WHO, 2014).

Post-Traumatic Stress Disorder: "PTSD arises after a stressful event of an exceptionally threatening or catastrophic nature and is characterized by intrusive memories, avoidance of circumstances associated with the stressor, sleep disturbances, irritability and anger, lack of concentration and excessive vigilance" (WHO, 2001).

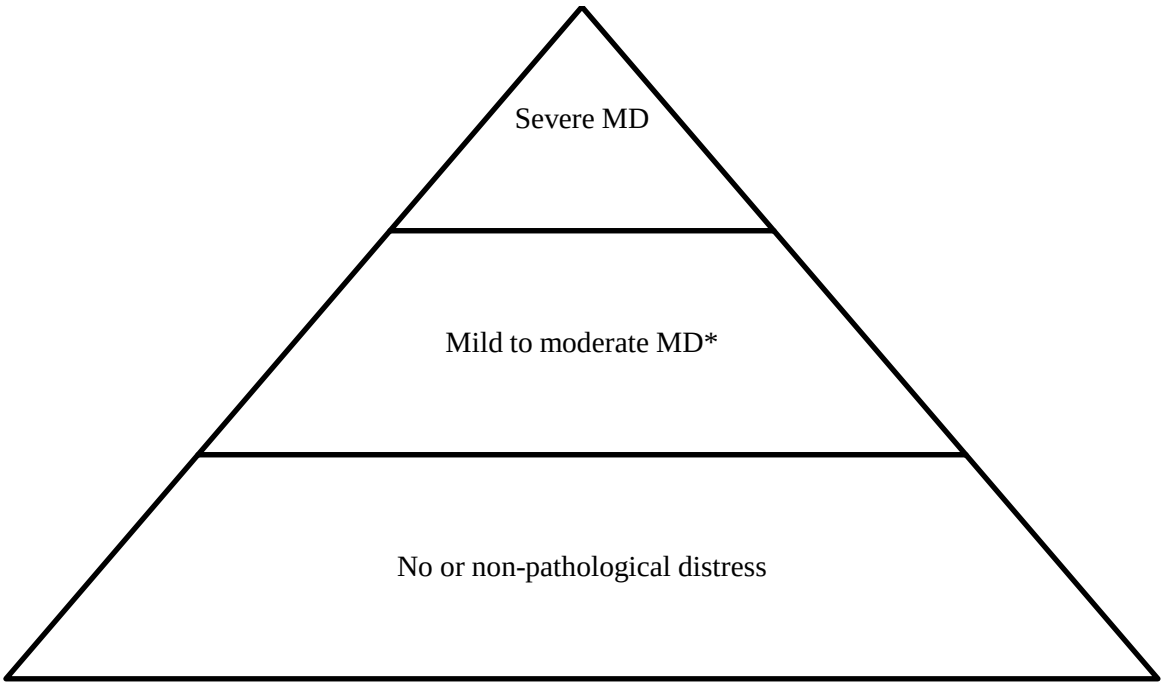
Common Mental Disorders: Common Mental Disorders (CMDs) is a broad term used for common mental health disorders. CMDs include depression, generalised anxiety disorder (GAD), panic disorder, phobias, social anxiety disorder, obsessive-compulsive disorder (OCD) and PTSD (NCCMH, 2011).

Psychological distress: Psychological distress is a general term used for a range of psychological and somatic symptoms experienced in the previous month (Akhtar et al., 2010, Husain et al., 2007). These symptoms are generally assessed through a screening instrument. In this study psychological distress was measured through the Self-Reporting Questionnaire (SRQ).

1.2.1. The range of mental health consequences following a humanitarian crisis

Research on the mental health consequences of humanitarian emergencies, including conflict, has been dominated by research on post-traumatic stress disorder (PTSD) (George et al., 2012). However, there is a broad range of mental health consequences following a humanitarian crisis (WHO, 2007). This can be better represented as a pyramid (see Figure 1.2). The largest group at the bottom of the pyramid is one displaying non-pathological distress or no distress at all (IASC, 2007). At the top is the smallest group – those with severe mental health disorders, including psychosis, dissociative, personality or seriously disabling mood, anxiety and stress-related disorders (Jones et al., 2007, IASC, 2007, Keyes, 2000). The middle group comprises people with mild or moderate mental health problems, including PTSD, depression, and anxiety disorders, such as generalized anxiety disorder or panic disorder, and substance misuse (Bhui and Warfa, 2007). In addition, this middle group includes culture specific syndromes (Silove, 2004, Mollica et al., 2004, de Jong et al., 2003, Keyes, 2000).

Figure 1.2: Mental health states in humanitarian emergencies



*Note: Surface areas do not accurately represent prevalence rates. *MD: Mental Disorder*

As reflected in the pyramid diagram, most people living in humanitarian emergency settings are not affected by mental disorders (IASC, 2007). Indeed many show an incredible resilience and ability to cope (Foa et al., 2006), retaining reasonable mental health through their psychological (e.g., positive coping mechanisms) as well as social, economic and spiritual (community and family support, or prayer) resources (Allden et al., 1996, IASC, 2007). This group of people may experience normal levels of distress in terms of cognitive, emotional, physical or behavioural symptoms, without developing clinically significant mental health problems (Burnett and Peel, 2001, van Ommeren et al., 2005a). This non-pathological distress may generally be characterized by symptoms of depression and anxiety, and has been reported to affect between 50-75% of emergency affected population (Palmer, 2005). This non-pathological distress may be mild and

might resolve in a few days or weeks, or moderate to severe, improving over a longer period of time (van Ommeren et al., 2005a).

While, the overall prevalence rates of mental disorders in humanitarian emergencies do tend to be higher compared to other populations, there is considerable variation between studies and settings (IASC, 2007, Mollica et al., 2004, de Jong et al., 2003, Cardozo et al., 2004, Foa et al., 2006, Steel et al., 2009, Irmansyah et al., 2010). This is especially the case with PTSD. A large meta-analysis reported prevalence rates ranging from 0% to 99% (rate across studies was 31%) in populations exposed to mass conflict and displacement (Steel et al., 2009). Likewise, the prevalence rates of the most widely reported disorders such as depression and other common mental disorders like anxiety vary significantly between studies. In the meta-analysis by Steel et al. (2009) the prevalence rates ranged from 3% to 86% (rate across studies was 31%). These large variations in prevalence rates of mental disorders across settings are likely to be due to the different methodologies used by these researchers (Mina et al., 2005, Steel et al., 2009, Porter and Haslam, 2005). Steele et al's (2009) meta-analysis argues that the large percentage of variation in prevalence rates of PTSD and depression (13% and 28% respectively) especially where the rates are high are due to differences in the studies, such as the use of non-random sampling, small sample sizes and self-report measures. Similarly, Mina et al (2005) notes that studies with large sample sizes and more rigorous design report smaller prevalence rates.

However, prevalence rates of severe mental disorders, as represented by the top of the pyramid in Figure 1.2, tend to be consistently elevated by around 1% above the baseline rate of 2-3% in humanitarian emergency settings (Keyes, 2000, IASC, 2007, Jones et al., 2007).

1.2.2. Risk Factors for mental health consequences in humanitarian emergencies

In the earlier section, the history and evolution of the humanitarian crisis in Swat was traced. It is evident that the people living in the midst of this conflict faced a number of stresses. Research on similar conflict situations shows that a number of factors contribute to both non-pathological and pathological mental health problems – these include loss of home or loved ones, displacements to camps, torture, sexual violence, rape, persecution, detention, harassment or forcefully made to fight (IDMC and NRC, 2009, Keyes, 2000, Allden et al., 1996, Cardozo et al., 2004, Mullany et al., 2007). Steel et al's (2009) meta-analysis found that 21% of survey participants who had a mental disorder had experienced torture. Similarly, a study on Burmese refugees living in Bangkok identified 30 traumatic events before and during migration, or after resettlement, that were associated with psychological problems. These traumatic events included interrogation, imprisonment and threats of deportation and torture (Allden et al., 1996). Other risk factors that contribute to elevated levels of distress and mental disorder found in humanitarian emergencies are discussed below:

Personal and demographic factors

These factors are known to be generally associated with higher risk of common mental disorder, but may be accentuated by the additional stress due to the humanitarian emergency. Female gender has often been identified as a risk factor although findings vary and are not consistent (Allden et al., 1996, Foa et al., 2006, Irmansyah et al., 2010, Roberts et al., 2009, Porter and Haslam, 2005, Brewin et al., 2000, Lopes Cardozo et al., 2004, Karunakara et al., 2004, Murthy, 2007, Silove et al., 1997). Although the significance is slight, a large meta-analysis found that studies with higher proportion of female refugees reported poorer mental health outcomes after

methodological differences were taken into account (Porter and Haslam, 2005). Conversely, Steel et al (2009), in their extensive meta-analysis, reported no association between gender and either depression or PTSD. One reason for these differences may be the different inclusion criteria employed by the two meta-analyses – the former included studies comparing refugee group to a non-refugee group of any age with any type of mental health measures used (Porter and Haslam, 2005), while the latter included studies only on adult populations with reported prevalence rates of PTSD or depression as a mental health outcome (Steel et al., 2009). To conclude, these differential gender effects point towards a possibility that these may not only be due to the different methodologies employed, but that female gender as a risk for poorer mental health may be context-specific.

Other personal and demographic factors that have been reported as risk factors in humanitarian emergencies include: age – both older age (Porter and Haslam, 2005, Karunakara et al., 2004, De Jong et al., 2001), and school-age (Murthy, 2007, Okasha, 2007); education level (lower and upper classes both) (Irmansyah et al., 2010, Brewin et al., 2000, Karunakara et al., 2004, De Jong et al., 2001, Bhui et al., 2003); occupation (lower risk if in a salaried job) (Karunakara et al., 2004); marital status (i.e. single, separated or widowed at higher risk compared to married) (Roberts et al., 2009); a history of personal or family psychiatric illness (Cardozo et al., 2004, Brewin et al., 2000); experience of traumatic events such as childhood abuse (Brewin et al., 2000); and diminished resilience beliefs (Irmansyah et al., 2010).

Events or experiences that occurred during the emergency

Apart from the personal and demographic factors, other risk factors for poor mental health outcomes in humanitarian emergencies are related to the events or experience that occur during

the emergency. A general description of these factors is given in the earlier section, and here, some of the more important factors are discussed in greater detail. Current research indicates that the event itself (type), its duration, frequency and severity are key determinants of the mental health consequences (Allden et al., 1996, Foa et al., 2006). Apart from these, exposure to traumatic events as a whole (Steel et al., 2009, Roberts et al., 2009, Bhui et al., 2003, Kamaldeep and Nasir, Bhui and Warfa, 2010), or as reported individual specific events within the traumatic situation, such as experience of torture (Steel et al., 2009, Mills et al., 2008, Steel et al., 2002, Shrestha et al., 1998, Lien et al., 2010); political imprisonment (Lien et al., 2010); witnessing an event like murder or physical abuse, receiving threats, property destruction or loss (Espié et al., 2009); direct exposure to the disaster (Irmansyah et al., 2010); physical injuries acquired during the event (Cardozo et al., 2004); forced displacement (Roberts et al., 2009) and the feeling of danger towards oneself, proximity to traumatic events, or the violation of human rights (IASC, 2007), all have important associations with mental health problems.

1.2.3. Challenges in humanitarian mental health research and current debates on role of risk factors

Because of the nature of humanitarian emergencies, the instability of the populations affected, and the challenges in obtaining robust information from participants who may be dealing with survival issues, it is difficult to conduct longitudinal studies in these settings. In humanitarian emergency settings, teasing out the main risk factors for poor mental health is also extremely hard due to the methodological and diagnostic issues in measuring mental health outcome, which become even more challenging in such settings. In addition to this, the relationship between different risk factors in these settings is complex (Norris et al., 2002, Brewin et al., 2000) and depends on the interaction of event-related, personal, family, cultural and environmental factors.

Generally, heavy emphasis has been placed on the traumatic events related to the humanitarian crisis and their associations with PTSD as an outcome (Mollica et al., 2007, Karunakara et al., 2004, De Jong et al., 2001). Research in this area has confirmed the strong association between traumatic events in the shape of torture, violence, conflict and PTSD (Steel et al., 2009, Karunakara et al., 2004, De Jong et al., 2001, Norris et al., 2002).

However, in the last few years, there has been a shift in focus, from traumatic events to a more holistic view, which gives consideration to other stressors and risk factors. This moves away from a linear explanation of mental health problems occurring as a consequence of traumatic events, to an approach that takes into account pre-existing vulnerabilities, co-occurring risk unrelated to trauma, and resilience. This broad approach has given rise to many questions, such as to what extent daily stressors or pre-existing risk factors account for the impact of traumatic exposure on mental health; how much variance in mental health outcome may be predicted by the daily stressors versus the traumatic events; and what is the nature of this interaction.(Miller and Rasmussen, 2010, Neuner, 2010).

Of late, models have been proposed to explain the interaction between daily stressors and traumatic events in humanitarian settings. One such model by Miller and Rasmussen (2010) proposes that the interaction between past traumatic events and mental health problems is partially mediated by daily stressors in humanitarian crises settings. Miller and Rasmussen argue that the experience of past traumatic events has a significant role in predicting mental health in humanitarian crises settings and such past events are often more relevant compared to the current daily stressors experienced in post-crises environments. While Miller and Rasmussen's model makes the distinction between past traumatic events and daily stressors, it is also holistic and

integrative. The model indicates that daily stressors should be addressed in the first instance, using a modified social-ecology approach, with specialist cares being considered if symptoms persist.

Miller and Rasmussen's model (2010) was based on analysis of recent research findings from various humanitarian settings. The authors noted that previous research relating to exposure to traumatic events could only account for a small percentage of the variance on mental disorders such as PTSD and depression (Miller and Rasmussen, 2010). For example Miller et al's (2008) study of exposure to war in the Afghan capital Kabul could only account for around 15% of the variance in PTSD symptoms. Further, a study of Darfur refugees found between 2% and 5% of the variance in psychological distress, and 1% of the variance in PTSD symptoms was attributable to past traumatic events. Conversely, between 4% and 9% of the variance in psychological distress, and 4% and 5% of the variance in PTSD symptoms, were attributable to daily stressors (related to basic needs and safety) (Rasmussen et al., 2010). Similar findings also emerged from another study amongst adolescents in Sri Lanka where daily stressors partially mediated the relationship between past traumatic events and mental health (Fernando et al., 2010).

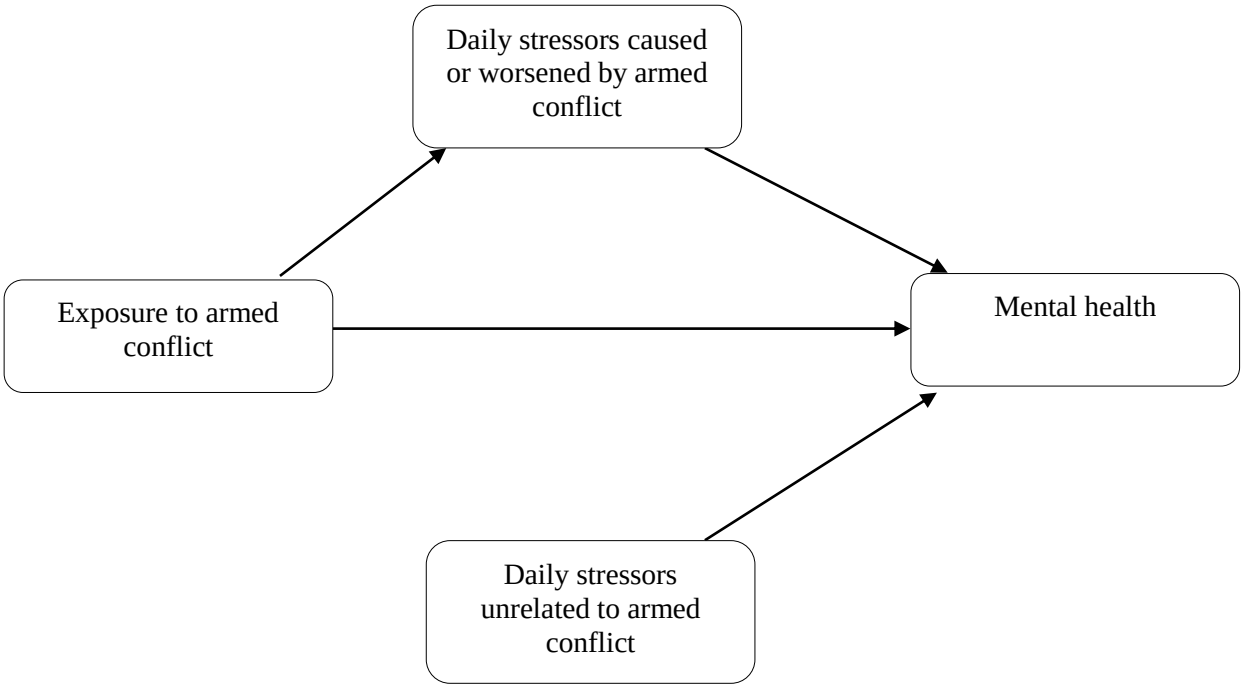
Neuner (2010) proposes a slightly different model, arguing that poor mental health may result from a change in the perception of daily stressors, or even the self-generation of daily stressors. The model differs from Miller and Rasmussen by suggesting that daily stressors are caused by poor mental health and related loss of adaptive skills, not the other way round. Neuner's model is supported by the postulation that poor mental health may increase the probability of experiencing

stressful life events – the "stress generation" effect (Hammen, 2006). However, Neuner's model needs further exploration in conflict- or disaster-affected populations (Neuner, 2010).

Empirical research directly assessing both these models is limited as the focus has been on war-related trauma (Miller and Rasmussen, 2010). Studies assessing exposure to other potentially traumatic events in a wider range of humanitarian settings are few. One study (Kessler et al., 2012) found that the loss of property or death of a loved one (termed as secondary stressors) was more strongly associated with mood/anxiety disorders than direct exposure to a natural disaster. However the study did not assess the nature of this interaction and had many limitations.

The hypotheses of the current study are more aligned to Miller and Rasmussen's model (see Figure 1.3). The study measures daily stressors in the form of current social support and stressful life events in the year following the conflict. It also measures traumatic events encountered during the humanitarian emergency in the region. This allows us to explore the associations of current psychological distress in women with both traumatic as well as stressful events following the emergency.

Figure 1.3: Miller and Rasmussen's model (Miller and Rasmussen, 2010)



1.3. Perinatal mental health

The Interagency Standing Committee on Humanitarian Emergencies (IASC, 2007) highlights the particular risks posed to women and children in humanitarian emergencies and calls for further research on these groups. Women of child-bearing age are a particularly important group, because of the impact of maternal depression on the growing foetus, infant, child and family (Rahman et al., 2003a, Rahman et al., 2013b). The current section will therefore review the research on perinatal mental health in low and middle-income countries, with a focus on South Asia. While much of the region has suffered a humanitarian emergency, either natural or man-made, in recent times, the paucity of research on mental health of pregnant women and women of child-bearing age who form up to 25% of the population is highlighted.

Significant physical and emotional changes are associated during perinatal period in the women. Some researchers have argued that the life-time difference in rates of depression between men and women is mostly due to the higher onset of depression during the perinatal period (Astbury, 2002, Epperson, 1999). In addition, it has also been hypothesised that the hormonal changes during the reproductive cycle increases the risk for affective disorders in a proportion of women (Parry and Newton, 2001). Mental symptoms during the perinatal period range in severity from transient low mood to psychotic depression (Brockington, 2004). It has long been suggested that pregnancy, being a major life event, along with the accompanying hormonal changes, presents a period of increased vulnerability either for a new onset of depression or recurrence (Robert, 1996, Wisner et al., 1999, Rich-Edwards et al., 2006). Therefore, for some women this may bring about the first episode of depression during pregnancy, while others having a previous

episode of depression will have an increased risk of recurrence during pregnancy (Burt and Stein, 2002, Noncas and Cohen, 2002).

1.3.1. Prevalence and risk factors of perinatal mental health disorders in low and middle-income countries

In the past, literature suggested that perinatal depression is a culture specific disorder and is limited mainly to Western societies (Kelly, 1967). Their argument was based on the observation that the more traditional societies offer greater support to women during perinatal period. This was evident, for example, in a study in China, where greater attention and support was provided to women by family and friends during the first postnatal month, much more than that provided to the infant (Pillsbury, 1978). Similar practice was observed in Nigeria, where the new mother and the baby were placed in a special hut and were taken care by the families for several months (Kelly, 1967). Both authors found little evidence of postnatal depression in these cultures, attributing this to traditional family practices.

However epidemiological studies in the last decade in low and middle-income countries have shown higher prevalence rates in these settings. These are reviewed below, with a particular focus on South Asia.

The prevalence of perinatal mental health disorders in South Asian countries is summarized in Table 1.2. As can be seen, there is a wide variation in the prevalence rates. Prevalence through self-reported screening instruments is high compared to those with diagnostic interviews. This is also supported by research in other parts of the world (Steel et al., 2009). The large variation between the prevalence estimate have been attributed to different instruments with variable cut

off scores; variable assessment period; and other socio demographic differences between the research settings (Fisher et al., 2012).

Similarly in a recent systematic review and meta-analysis, Fisher and colleagues (Fisher et al., 2012) identified 13 studies which had investigated common mental disorders prevalence in the pregnant women from 1979 till 2010. Five out of the 13 studies were done in tertiary hospitals, a further five investigated community based services, and only three studies recruited participants from the general population through community health workers or through established system of surveillance of the general population of pregnant women. The tertiary hospitals studies were least representative of the general population as most of the rural and socioeconomically disadvantage population cannot access the services. In the community services based studies the representative sample is likely to have come from the centres where the antenatal coverage was high. Thus, the studies through community health workers are most likely to be representative of the population. The average prevalence of common mental disorders in pregnancy across all settings was 15.6% (95% CI: 15.4 to 15.9). However after segregation of the prevalence data according to setting, higher weighted mean prevalence was found for community based studies i.e. 19.7% (95% CI: 19.2 to 20.1).

Various risk factors for perinatal depression in South Asian countries presented in Table 1.2 were identified and summarised below:

- Socioeconomic issues like unemployment, poverty, low income and education.
- Poor social relations like unhelpful mother in law and husband, lower social support, serious arguments with significant family member, no help at home, problems with in laws and parents and poor family relations.

- Son preference like overall preference for son, wanting son and delivered daughter and more than two female children.
- Stressful life events in the previous one year.
- Pregnancy concerns, poor physical health, antenatal psychiatric morbidity, previous depression, multi-parity, small family size coupled with multiple children, physical abuse/violence, perinatal death and smoking.
- Husband's alcoholism and polygamy.
- Nuclear family structure.

It is notable that none of the studies was carried out in the context of a humanitarian crisis. There is thus considerable scope for exploring how these established risk factors for perinatal depression interact with traumatic events – the topic of the current study.

The importance of studying this will become evident in the following section, where the impact of perinatal depression on the woman, her infant, and family is discussed.

Table 1.2: Prevalence and risk factors of perinatal depression in South Asian countries

Study	Time period	Sample size	Instruments	Prevalence	Risk factors
(Kazi et al., 2006) Urban Karachi Pakistan	Antenatal visits	Hospital based sample of 292	CES-D Cut off ≥16	39.4%	Social relations Pregnancy concern Increasing age Low education
(Shah et al., 2011) Rural Gilgit Pakistan	Pregnancy	Community sample of 128	EPDS Cut off ≥13	48.4%	Poor physical health and physical abuse
(Gausia et al., 2009a) Rural Bangladesh	3rd trimester	Community sample of 361	EPDS Cut off ≥10	33%	Son preference Unhelpful mother in law and husband and physical abuse
(Akhtar et al., 2010) Rural Rawalpindi Pakistan	3rd trimester	Community sample of 325	SRQ Cut off ≥7	56%	Not assessed
(Karmaliani et al., 2006) Hyderabad Pakistan	20–26 weeks pregnant	Community sample of 997	AKUADS > 31.5 How I feel scale > 83.5	11.5 % 13.5%	Not assessed
(Husain et al., 2006) Rural Rawalpindi Pakistan	12 weeks postpartum	Community sample of 149	EPDS Cut off ≥12	36%	lower social support increased stressful life events and psychological distress in pregnancy
(Rahman et al., 2003a) Kahuta Pakistan	3rd trimester, 10-12 weeks postpartum	Community based sample of 632	SCAN	25% AND 28% PND	Husband unemployment Serious arguments with significant family member Nuclear family ≥ 2 female children
(Chandran et al., 2002) Tamil Nadu, India	3rd trimester, 6-12 weeks postpartum	Community based sample of 359	CIS-R	11% incidence PND; 16% AND, 19.8% PND	Wanting son delivered daughter, No help at home, Low income, Problems with in laws and parents and adverse life events
(Regmi et al., 2002) Kathmandu, Nepal	2-3 months postpartum	Postnatal clinic sample of 100	EPDS > 12	12%	Not assessed

(Continued from above)

Study	Time period	Sample size	Instruments	Prevalence	Risk factors
(Patel et al., 2002) Goa, India	6-8 weeks postpartum 6 month postpartum	252/270 from 3rd trimester 235/270 from 3rd trimester	EPDS > 11	23% 22%	Antenatal psychiatric morbidity, poverty, poor marital relationship, gender of the infant, marital violence and hunger.
(Ho-Yen et al., 2007) Lalitpur, Nepal	5–10 weeks Postpartum	426 postnatal women at clinics/hospital/community	EPDS > 12	4.9%	Husband's alcoholism, polygamy, previous depression, stressful life events, multiparity, smoking and depression during pregnancy.
(Gausia et al., 2007) Dhaka Bangladesh	6-8 weeks postpartum	100 postnatal women from immunization clinics	SCID (DSM-IV)	9%	Not assessed
(Gausia et al., 2009b) Matlab, Bangladesh	6-8 weeks postpartum	346 women from MCH clinics followed from pregnancy	EPDS > 9	22%	past mental illness, depression in current pregnancy, perinatal death, poor relationship with mother-in-law, either the husband or the wife leaving home after a domestic quarrel
(Black et al., 2007) Matlab, Bangladesh	12 months postpartum	221/346 DSS identified eligible women	CES-D > 16	52%	Poverty, low income, low education, small family size coupled with multiple children,
(Nagpal et al., 2008) Delhi, India	Up to 6 months postpartum	195 community sample	EPDS > 9	59.4%	Not assessed

AKUADS: Aga Khan University Anxiety and Depression Scale, AND: Antenatal Depression, CES-D: Centre for Epidemiological Studies – Depression, CIS-R: Revised Clinical Interview Schedule, DSM-IV: Diagnostic and statistical manual of mental disorders, 4th edition, DSS: Demographic Surveillance System, EPDS: Edinburgh Postnatal Depression Scale, PND: Postnatal Depression, SCAN: Schedule for Clinical Assessment in Neuropsychiatry, SCID: Structured Clinical Interview, SRQ: Self-Reporting Questionnaire

1.3.2. Impact of perinatal mental health disorders

It is well established that Depressive disorders, including maternal depression, account for the largest proportion of the burden associated with mental or neurological disorders (Prince et al., 2007, Vos et al., 2012). Addressing maternal depression could play an important role in achieving the Millennium Development Goals, especially as 3 out of the eight goals are directly related to women and children (Miranda and Patel, 2005). Below, the impact of maternal depression is discussed in more detail.

Impact on the pregnant woman and family

Depression and associated feelings of despair and hopelessness have consequences for poor partner relationships (Hickey et al., 2005). Apart from the poor partner relationship, there is associated maternal morbidity and mortality with untreated mental conditions. Depression and anxiety in pregnancy have negative impact on the mother herself. Research has found an association between depression and anxiety in early pregnancy and the subsequent risk of preeclampsia (Tapio et al., 2000, Bonari et al., 2004). Similarly, in another study, pre-pregnancy or gestational diabetes was independently associated with perinatal depression, including new onset of postpartum depression (Kozhimannil et al., 2009). These mental conditions can affect a woman's functional status, her ability to obtain antenatal care and avoid unhealthy behaviour. This was evident in a larger sample study conducted by Lanzi et al (1999) where strongest association was obtained between depression and maternal chronic health problems. Furthermore there is an increased risk of depression postpartum and in severe cases of suicidal ideation or attempts (Bonari et al., 2004). Similarly, depressive symptoms in women during pregnancy and the postpartum in poor families have been associated with use of tobacco,

alcohol and illicit drugs (Zuckerman et al., 1989). Additionally, maternal depression has been associated with low maternal self-esteem (Turner et al., 2000) and parenting difficulties (Albright and Tamis-LeMonda, 2002).

Impact on the foetus and infant

In the last decade, substantial research has been conducted on the relationship between depression during pregnancy and preterm birth (<37 weeks gestation), low Birth Weight (LBW) (<2500g birth weight) and intra-uterine growth restriction (IUGR) (<10th percentile for gestational age). The findings have been inconsistent and inconclusive (Yonkers et al., 2009). Some evidence, especially from low-income countries or lower socioeconomic groups in developed countries, suggests a strong association with preterm birth (Straub et al., 2012, Dayan et al., 2006, Neggers et al., 2006, Steer et al., 1992), LBW (Neggers et al., 2006, Rahman et al., 2004, Steer et al., 1992) and IUGR (Steer et al., 1992). Other studies have reported no direct association (Andersson et al., 2004). These contradictory results have been described by Grote et al, in their met-analysis (Grote et al., 2010), suggest that the variation may be explained by a number of factors such as: design; sample size; depression assessments; and misclassification of bias regarding depression or birth outcomes, sourced population and confounding factors of preterm birth, LBW or IUGR. One of their key conclusions was that depression during pregnancy is associated with preterm birth and low birth weight and the risk of the latter was significantly larger in low-income countries (Grote et al., 2010).

One of the key studies supporting the above was conducted in Pakistan by Rahman and colleagues (2004). In this robustly conducted prospective cohort study, 632 pregnant women in their third trimester were diagnosed for depression using the WHO Schedules for Clinical

Assessment in Neuropsychiatry (SCAN). Of these, 160 were diagnosed as having an ICD-10 depressive episode. Each of these depressed women was matched on gestation duration and residence with a non-depressed woman. Follow up assessments of mental health were measured at birth, 2, 6 and 12 months postnatal along with weight and length of the new-born baby. Mean weight-for-age z-score difference at birth was 0.30 (95% CI: 0.01 to 0.59; P<.05), increasing at one year to 0.70 (95% CI: 0.48 to 0.92; P<.01). Mean length-for-age z-score difference at 2 months was 0.24 (95% CI: –0.01 to 0.48; P=.06), increasing at 1 year to 0.63 (95% CI: 0.38 to 0.88; P<.01). Maternal depression predicted underweight and stunted children at both 6 and 12 months after controlling for all other variables. Similarly relative risks of both LBW and excessive diarrheal episodes were significantly associated with maternal depression. Similar results were obtained in another study from India (Patel, 2006).

Besides growth, depression has a negative impact on other developmental and health outcomes. In a review, children of depressed mothers were found to have poorer long-term cognitive development. In addition, these children have higher rates of antisocial behaviour, attention difficulties, hyperactivity and experience emotional problems (Wachs et al., 2009).

To conclude, there is significant evidence to demonstrate that children of depressed mothers, especially in low income settings, are at increased risk for health issues like preterm birth, low birth weight and in some studies intra uterine growth restriction as well as developmental and behavioural problems.

1.4. Summary

This chapter shows that globally, there is a higher prevalence of mental disorders after and during humanitarian emergencies. The district of Swat in Pakistan has seen conflict in the last 2 decades, which intensified during recent years. The impact of such humanitarian emergencies can be long-term. Mental disorders during pregnancy and postnatal period are not only harmful for the pregnant/postnatal woman but also for the unborn/newly born child and affects physical as well as mental health.

The literature review was not able to identify a single study on this target group conducted in a humanitarian emergency setting. Women who have been exposed to a humanitarian crisis such as conflict are likely to have more risk factors for mental health problems. Considering the impact of perinatal depression on the infant and the potential for inter-generational risk transmission, this is a gap in our understanding, which the current study hopes to begin to address.

Chapter 2: Aims and objectives – Study 1

2.1. Aim of the project

Introduction

From the literature review, we have seen that populations exposed to humanitarian crises such as conflict are at a higher risk of mental health problems. The available evidence suggests that this is because of cumulative risks from direct exposure to traumatic events related to the crisis, as well as everyday stresses in the aftermath of the crisis. While women, especially those in the perinatal period, have been identified as a vulnerable group in such humanitarian situations, there is no research on the prevalence and risk factors for psychological distress in this group. There is thus a gap in our current understanding of the prevalence and risk factors of psychological distress in pregnant women exposed to a humanitarian crisis. It is important to explore this area because there are important implications of perinatal mental health and child outcomes.

The aim of this study was to determine the prevalence and associations of psychological distress in a sample of pregnant women in an area affected by conflict in the Swat District of Pakistan.

2.1.2. Objectives

The objectives of this study were:

a) To determine the prevalence of psychological distress in pregnant women living in two Union Councils in the District of Swat, Pakistan.

b) To study the associations of psychological distress during pregnancy with exposure to potentially traumatic events as a result of armed conflict occurring in the study area.

c) To study the associations of psychological distress during pregnancy with stressful life events occurring in the post-conflict year.

d) To study the associations of psychological distress during pregnancy with social support available to the women.

2.1.3. Hypotheses

Study 1 has the following hypotheses:

Hypothesis 1: Pregnant women with higher levels of psychological distress will have been exposed to more potentially traumatic events compared to pregnant women with lower levels of psychological distress.

Hypothesis 2: Pregnant women with higher levels of psychological distress will have more stressful life events in the post-conflict year compared to pregnant women with lower levels of psychological distress.

Hypothesis 3: Pregnant women with higher levels of psychological distress will perceive to have less support from *Significant Other*, *Family* and *Friends*, compared to pregnant women with lower levels of psychological distress.

Chapter 3: Materials and methods - Study 1

3.1. Selection of study area

The study area has been described in detail in Section 1.1. As described, the District of Swat consists of 65 Union Councils (the smallest administrative and geographical unit). Each Union Council (UC) has a population of about 30,000 people living in 7-10 villages of varying size. Each UC is served by one Basic Health Unit. The study was conducted in two Union Councils of Swat, Qambar and Odigram. These Union Councils were chosen for a number of methodological and logistic reasons. Firstly, their proximity to major city of Swat (Mingora) meant that the area was accessible compared to the more inaccessible rural areas of the district. There was good coverage of the catchment areas by the community-based primary care workers (Lady Health Workers) through whom I approached the pregnant women, and who were later involved in delivery of the psycho-educational intervention (Study 2). Finally, this area was also one of the most affected areas during the conflict and militancy because one of the headquarters of the insurgency was located in a village in Qambar.

Each of the BHU's serving the respective Union Councils has 15-20 Lady Health Workers (LHWs). LHWs are women from the local community who have completed secondary school education (ten years of education), and are trained mainly to provide preventive mother and child health care and education in an assigned local catchment area. The LHWs live in the same villages where they provide a service, under supervision from the BHU. LHWs roles, responsibilities, selection and training in the programme are reported in Section 6.5.2.

3.2. Study design and population

The research design was a cross sectional survey conducted between 1st September and 1st November 2012. The study population was identified through the official list of pregnant women, including all newly registered pregnancies, held by the LHWs in the catchment area of two BHU's in Qambar and Odigram. Independent evaluations of the LHW Programme estimate that they cover on average 85% of the households, and register a similar proportion of pregnant women from the total population of the Union Council they cover (Oxford, 2009). As this study relied on women registered with the LHWs, pregnant women not registered with the LHWs or an area with no LHWs might have been missed and not included in the study.

3.3. Sampling technique and selection of subjects

All pregnant women were approached by their own LHW who explained the study and handed out information sheets (see Appendix 2 and 3 for information sheet and consent letter). Informed consent was obtained by the LHWs, who were trained by the research team. The LHWs are trusted members of the community and the women and their family members feel free to ask questions from them. It was therefore felt appropriate, especially in the context of a post-conflict situation, to approach participants through trusted members of the community. As majority of women were illiterate the LHWs were instructed to read out the information sheet to them and take thumb impressions of willing participants. The use of thumb prints follows routine practice in Pakistan for men and women who cannot sign their names. The women were allowed time to decide if they would like to participate, and encouraged to discuss their participation with family members if they wanted. All women who consented to take part in the study were then

approached by the field research team, accompanied by LHWs, who introduced the research team to the household members. Following the introduction, the team again confirmed the family's consent after informing them about the study and encouraging any questions they might have about the study. After confirming consent, the field research team conducted the survey interview. Ethical issues are discussed in greater detail in section 10.2.4.

3.4. Data collection procedure

On the appointed date, the household was visited by a member of the research team. As all the assessment team members were female, the survey interviews were conducted inside the participants' homes, in line with cultural norms. On the agreed day the assessment team would first go to the LHW, who would escort the team to the participants' homes. The LHWs only introduced the team to the family and were not involved in any data collection.

Before beginning the assessment, the team reconfirmed informed consent and discussed the main points on the information sheet, ensuring that participation was voluntary as described above. Participants' were free to withdraw consent at any point during the interview, or refuse to answer a particular question. All the instruments were administered in each interview except when the participants were unwilling to provide the required information. During the conduct of the survey one or more female relatives of the participant were frequently present in accordance with cultural norms, although best efforts were made to conduct the session in a separate room to ensure privacy. The LHW presence in the house was utilized to minimize this involvement and majority of family members were kept busy during the conduct of survey interviews. This

procedure for handling the issue of participant privacy emerged during the first few days of field activities and was suggested by the data collection team.

3.5. Instruments

3.5.1. Psychological distress during pregnancy

A key issue was the measurement of mental health problems during pregnancy. Key outcomes of interest were common mental disorder – anxiety and depression – in the current period of assessment. Common mental disorders have the highest prevalence and the largest public health impact (Fisher et al., 2012, Rahman et al., 2013a). Two approaches were available: a) Diagnostic interview, conducted by trained and experienced specialists, which would give a precise clinical diagnosis; and b) Screening instruments, which may be self-administered, or administered by non-specialist workers after brief training. These do not give an exact diagnosis but a 'probability' of having the disorder or problem being assessed.

It usually takes at least an hour to complete a diagnostic interview and requires specialist skills. By contrast, screening instruments are often quite quick and seldom require that the administrator has extensive clinical experience. They can therefore provide an economic means for obtaining information on emotional and behavioural problems in large population surveys.

The approach chosen for this study was to use a screening instrument that measures the probability of having a common mental disorder such as anxiety or depression, and provides a score that gives a measure of psychological distress. In addition, a cut-off score, derived from

previous studies in populations similar to the target population, could provide categorical 'probability' of being a case with sufficient confidence.

The reasons for choosing the latter approach were as follows:

a) The research setting, in the aftermath of a serious armed conflict, was challenging. Travel to and from the site was risky at times. The local population was not trusting of outsiders. Local persons were employed in the research team.

b) There were no specialists with sufficient clinical experience available locally who could conduct the diagnostic interviews.

c) The resources and time available to conduct the study were limited.

d) Reliable and valid screening instruments were available which meant that we would not need to adapt a tool or develop a new one. The screening instrument selected for the study is discussed in further detail below.

Self-Reporting Questionnaire (SRQ)

The SRQ was developed by World Health Organization (WHO) for screening common mental disorders in developing countries (WHO, 1994). The tool was developed through a collaborative study and adapted from four instruments each with similar objectives but from a variety of background settings. The SRQ is a 20-question tool primarily designed for self-administration but can be used by interviewers as well. It is suggested that one method should be selected in any particular study to have standardized results. Furthermore, a standard approach should be

followed while administering the tool for screening the questions and should be asked exactly as written with no influence from the researcher at all. The 20 questions relate to how the participant has been feeling in the previous month, answered with yes or no answer. To score the SRQ; each 'yes' response is scored 1 and 'no' a zero. Yes answers are added at the end to give a total score out of a possible 20. There is no one generalizable cut off point for registering someone with mental disturbance and the cut-off point is generally decided in settings in which the SRQ is used. Most studies used 7/8 as cut off score (Husain et al., 2011, Neuner, 2010, WHO, 1994, Harpham et al., 2003).

The SRQ was administered through trained interviewers (rather than self-administration) as the majority of women in rural Swat were uneducated (NIPS, 2008) and were therefore assumed not to be able to read sufficiently to complete the questionnaire. A standard procedure was used by all the interviewers, regardless of the educational status of the participants. Participants with suicidal ideation as assessed by the SRQ were referred to the primary health centre.

The SRQ-20 was selected to measure psychological distress during pregnancy because it has been culturally adapted and translated to Urdu for Pakistan (Rahman et al., 2003b). Rahman and colleagues' translation and cultural adaptation of the SRQ into Urdu followed a detailed seven-step procedure involving key informant interviews and focus group discussions. The translation was later followed by a validation study in a rural community for postnatal depression in non-literate women (Rahman et al., 2005). ROC curves analysis for the SRQ show values under the curve of 0.82 (95% CI: 0.78 to 0.86). The author favoured the use of SRQ in non-literate population. In addition they recommended a higher cut-off point (9/10) for routine screening. This study demonstrated that the instrument performed as well as the Edinburgh Postnatal

Depression Scale (EPDS), widely recognised as the 'gold-standard' for screening instruments for postnatal depression. In addition SRQ was selected instead of the General Health Questionnaire-12 (GHQ-12) as SRQ performed better in a study in rural India (Patel et al., 2008) and its use was preferred in non-literate population (Rahman et al., 2005).

The SRQ has also been validated in semi urban community settings in Pakistan (Husain et al., 2000). This was a population based study on the general public, conducted in a semi urban village with participants drawn from the electoral lists and approached in two phases. In the first phase 259 (96% response rate) participants were screened through SRQ and Personal Health Questionnaire (PHQ). While 1 in 2 high scorers of PHQ≥6 (total 55) and 1 in 3 low scorers PHQ 0-5, as a comparison group (total 48) were interviewed in the second phase using Psychiatric Assessment Schedule (PAS). For the SRQ, using cut-off ≥9 sensitivity was 80%, specificity 85.4%, positive predictive value 86.3% and negative predictive value 78.8%. While for PHQ, using a cut-off score of ≥6, sensitivity was 81.8%, specificity 74.5%, positive predictive value 78.9% and negative predictive value 77.8%. Therefore, this study concluded that the SRQ was more specific in the detection of depressive disorders than the PHQ in this population. Recently Husain and colleagues (Husain et al., 2011) have used SRQ for the assessment of psychological distress during pregnancy and after child birth in an urban population of Pakistan.

The SRQ has been validated in many countries i.e. China, UAE, Malawi, Portugal, Ethiopia, Mongolia, Vietnam and Pakistan (Santos et al., 2009, Chen et al., 2009, Ghubash et al., 2001, Giang et al., 2006, Hanlon et al., 2008, Hu et al., 2008, Pollock et al., 2006, Rahman et al., 2005, Stewart et al., 2009, Youngmann et al., 2008, Husain et al., 2000). In a study of primary care attenders in Goa, India Table 3.1 (Patel et al., 2008), the SRQ showed highest internal

consistency of Cronbach's alpha 0.88 compared to General Health Questionnaire-12 (GHQ-12) 0.83, K10 0.82, K6 0.74 and PHQ 0.79. Likewise, the highest correlations were shown by the SRQ with K10 0.84, PHQ 0.82, GHQ 0.79 and K6 0.78. The ROC curve analysis reported in the study showed an area under the curve (AUC) 0.88 for the SRQ for any ICD-10 diagnosis of common mental disorder compared to the highest of 0.89 for GHQ-12. The individual values of sensitivity, specificity and other characteristics of these instruments can be seen in Table 3.1.

Table 3.1: Properties of several screening questionnaires for common mental disorder assessed in a sample of primary care attenders in Goa, India

Questionnaire	Cut-off score*	Proportion correctly classified (%)	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Positive likelihood ratio
GHQ	5/6	87	73	90	61.2	7.58
	6/7	87	60	93	64.5	8.73
	7/8	89	52	97	77.1	16.16
K10	5/6	85	65	89	52.5	5.63
	6/7	87	54	93	61.9	8.26
K6	3/4	86	58	91	56	6.47
PHQ-9	11/12	88	64	90	51.8	7.9
SRQ	11/12	88	64	90	51.8	7.86
	12/13	89	55	92	53.3	10.36

GHQ: General Health Questionnaire, K10 and K6: 10- and 6-item Kessler psychological distress scales, PHQ: Patient Health Questionnaire, SRQ: Self-Reporting Questionnaire.
**5/6 represent a cut point between the values 5 and 6 and represent caseness.*

Coding the SRQ data

Individual SRQ-20 responses were added up to produce a score for each respondent with a value of 0 to 20. To report the prevalence of psychological distress during pregnancy, descriptive analyses and determinants of psychological distress, the SRQ-20 data was coded as a binary variable making it necessary to identify a threshold at which to ascribe caseness. The SRQ-20 threshold varies from one population to another and is influenced by the nature of the sample, the context and the specific disorder being measured. As summarized in Table 3.2 a range of cut off scores (ranging from 3-13) have been used in a variety of settings with varying degrees of sensitivity (ranging from 66-93%) and specificity (ranging from 46-97%). A cut off score of ≥3 to <7 has been used in UAE, Vietnam, Ethiopia and Uganda (Ghubash et al., 2001, Giang et al., 2006, Hanlon et al., 2008, Nakimuli-Mpungu et al., 2012) with high sensitivity and high specificity (apart from 46% by Giang et al). Likewise in Vietnam, China and Ethiopia (Giang et al., 2006, Chen et al., 2009, Hanlon et al., 2008) with threshold score of 7 or more, a higher sensitivity (apart from 68% by Hanlon et al) and low specificity was achieved. Elsewhere, 3 studies used a cut off score of 9 or more with 80% or higher sensitivity (apart from 66% by Stewart et al) and similar high percentage of specificity in Pakistan, Mongolia and Malawi (Stewart et al., 2009, Pollock et al., 2006, Husain et al., 2000). The different gold standard diagnostic interviews and participant selection criteria used in these validation studies could be a source of variation. Higher thresholds are associated with less sensitivity, whereas lower thresholds preserve the sensitivity but compromise the specificity of the SRQ, resulting in the over estimation of the prevalence of psychological distress. It was important to strike a balance between these two parameters. As Husain and colleagues (2000) previously had used SRQ in a

Pakistani settings with a cut off ≥9 that yielded more than an 80% sensitivity, specificity and positive predictive values, this cut-off was used in the current study.

Table 3.2: SRQ-20 cut off scores in literature

Study	Cut off score	Gold-standard diagnostic interview	Psychiatric Morbidity	Country	Context	Sensitivity/ specificity (%)
Husain et al., 2000	≥9	PAS	Depressive disorders	Pakistan	Community	80/ 85
Ghubash et al., 2001	≥4	CIDI	Psychiatric disorders	UAE	Community	83/ 83
Pollock et al., 2006	≥9	Psychiatrist diagnosis	Psychiatric disorders	Mongolia	Mixed clinical and community	93/ 97
		CIS-R				87/75
Giang et al., 2006	≥6	CIDI	Mental disorders	Vietnam	District hospital	85/ 46
	≥7				Community	85/61
Patel et al., 2008	≥12	CIS-R	CMD	India	Primary care centres	64/ 90
	≥13					55/92
Hanlon et al., 2008	≥3	CPRS	CMD	Ethiopia	Community	86/ 76
	≥7					68/ 62
Stewart et al., 2009	≥8	SCID	Perinatal depression	Malawi	Child vaccination attenders	66/ 72
	≥9					66/ 81
Chen et al., 2009	≥7	CIDI	Psychiatric disorders	China	Mixed community and PHC	93/ 62
Nakimuli-Mpungu et al., 2012	≥6	MINI	Depression	Uganda	HIV clinic in hospital	84/ 93

CIDI: Composite International Diagnostic Interview, CPRS: Comprehensive Psychopathological Rating Scale, SCID: Structured Clinical Interview for DSM-IV, CIS-R: Revised Clinical Interview Schedule, PAS: Psychiatric Assessment Schedule, MINI: Mini International Neuropsychiatric Interview, CMD: Common Mental Disorders, PHC: Primary Health Centre.

3.5.2. Potentially Traumatic Events (PTEs)

Research has established that over the course of a normal life span most people encounter events in their lives severe enough to meet the criteria, from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition,* for a psychological trauma (Norris, 1992). These events are very distressing but not everyone reacts the same way. Individual differences have been reported in prospective and longitudinal studies as some react overwhelmingly, while others recover in months, and yet others are functional and resilient soon after the event (Bonanno et al., 2004). The marked variability in response led to the conclusion that these events should be referred as potentially traumatic events (PTEs) (Bonanno et al., 2011). Therefore, I use the term "PTE" when referring the to the events that have occurred in Swat district since 2007 due to the militancy in the region (Bile and Hafeez, 2009, Khattak, 2010).

To this end the, the local version of the Harvard Trauma Questionnaire, validated in another part of Pakistan (Halepota and Wasif, 2001) was used to assess the level of trauma exposure experienced by pregnant women in the study site. The first part of the Harvard Trauma Questionnaire contains enquiry about the potentially traumatic events that the person have encountered during the actual conflict and militancy. For each of the potentially traumatic events there were four response categories depending on the proximity to the event and exposure level: (1) experienced, (2) witnessed, (3) heard, and (4) none. In this way exposure to potentially traumatic events was assessed in the population to measure the overall level of trauma whilst also exploring the association with psychological distress. This tool therefore captured the actual conflict-related potentially traumatic events faced by the population during periods of militancy in the region defined as September 2007 until September 2011. For univariate analysis individual PTEs were coded as is shown in Table 3.3. For further univariate and logistic regression analysis

the PTEs were added for each participant according to the proximity and level of exposure and later categorized into ≤ 2, 3, 4, 5 or ≥6 as shown in Table 3.4. Since the whole population witnessed at least one PTE (forced evacuation), a score of 2 or less was used as the baseline category.

Table 3.3: Potentially Traumatic Events (PTEs) in the analysis

Category/variable	Description and criteria
Water and food scarcity	Water and food scarcity encountered either as experienced by the respondent (Y or N), witnessed in the community (Y or N) or heard about (Y or N).
Inaccessible health care in need	Inaccessible health care when needed either as experienced by the respondent (Y or N), witnessed in the community (Y or N) or heard about (Y or N).
Loss of shelter and logistics	Loss of shelter (house) and logistics (household items) due to conflict either as experienced by the respondent (Y or N), witnessed in the community (Y or N) or heard about (Y or N).
Imprisonment	Imprisonment during conflict either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
Dangerously wounded	Dangerously wounded during the conflict either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
War like situation	War and war like situation either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
Brain washing	Brain washing during conflict either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
Sexual harassment	Sexual harassment either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
Forcefully separation from others	Forcefully separation from the rest of the community either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
Being close to death	Feeling the threat of death during conflict either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
Forceful separation from family	Forceful separation from the family either as experienced by the respondent (Y or N), or otherwise witnessed in the community (Y or N) or heard about (Y or N).
Murder of family member or friend	Murder of family member or friend as an event either experienced by the respondent directly (Y or N), witnessed (Y or N) or heard about (Y or N).
Unnatural death of family member or friend	Unnatural death of family member or friend as an event experienced by the respondent directly (Y or N), witnessed (Y or N) or heard about (Y or N).
Strangers' murder	Strangers' murder as an event experienced by the respondent directly (Y or N), witnessed in the community (Y or N) or heard about (Y or N).
Kidnapping	Kidnapping either as experienced by the respondent (Y or N), witnessed in the community (Y or N) or heard about (Y or N).
Torture	Torture either as experienced by the respondent (Y or N), witnessed in the community (Y or N) or heard about (Y or N).

Table 3.4: Potentially Traumatic Events categorization

Category/variable	Number of traumatic events
Potentially Traumatic Events	
	≤2
	3
	4
	5
	6+

3.5.3. Stressful events in the year following the humanitarian crisis

Stressful life events in the previous year have been demonstrated as associated with the development of psychological distress during pregnancy as well as the postnatal period (Rahman et al., 2003a, Karaçam and Ançel, 2009, Husain et al., 2012, Husain et al., 2006, Ho-Yen et al., 2007). The importance of adverse life events is augmented in a situation when the year has involved rehabilitation of an area and community following devastation by militancy. Hence this factor was considered important, and included in the survey of pregnant women to detect significant life events in the post-conflict year (previous one year) in the lives of these women. Through my literature review, I found that researchers had used instruments to capture stressful life events in the previous year locally in Pakistan and neighbouring India as described below.

A study from rural India (Chandran et al., 2002) reported adverse life events to be significantly associated with postnatal depression in the year preceding delivery (OR=7.3, 95% CI: 2.1 to 25.8 P<0.001). They developed a local checklist of adverse life events but did not report them individually, instead making a continuous variable with the total number of adverse life events. Therefore I could not yield any variables from that for my own comparison. But another study from Pakistan (Rahman et al., 2003a) derived a checklist of life events from the Life Events and Difficulties Schedule (LEDS) (Brown and Harris, (1989)). LEDS is a semi-structured instrument that explores events and difficulties in the previous year. This has been translated to Urdu and locally validated by Husain for local use in Pakistan (Husain et al., 2000). Rahman and colleagues (2003a) used Husain's (2000) data and developed a checklist from variables that were commonly associated with depression in that study. These life events are summarized in the table below with their effects and significance levels.

Table 3.5: Life events preceding delivery

Life events/ variables	Relative risk (95% CI)	Significance
Significant other made redundant	2.1 (1.6-2.8)	< 0.01
Financial difficulties	1.8 (1.2-2.8)	< 0.01
Housing difficulties	1.9 (1.4-2.6)	< 0.01
Major arguments, relationship difficulties	2.7 (2.0-3.5)	< 0.01
Serious marital problems	2.9 (2.0-4.1)	< 0.01

As can be seen in Table 3.5 these stressful life events are not different from the current difficulties reported as risk factors for depression. Therefore, if problems with livelihood/shelter and social network persist they represent potent risk factors for depression with the additional demands of pregnancy and childbirth. Questions on this checklist corresponded to the time period September 2011 until September 2012, and therefore were measuring the impact of post-conflict life events. These life events along with their coding as used in the study have been presented in Table 3.6 below. For further univariate and logistic regression analysis these life events were added for each participant and later categorized into ≤ 2, 3-4 and ≥5.

Table 3.6: Post-conflict stressful life events in the analysis

Category/variable	Description and criteria
Ill, accident or hospitalization	You or a close relative had been ill or had an accident which led to hospitalization.
Death, suicide or serious illness	Any of your close relatives died or committed suicide or had become seriously ill.
Livelihood problems	Has anyone in your family had problems of livelihood? For example unemployment, losing a job or starting new work/job.
Financial problems	You or someone in your family has had any financial problem (e.g. having debts).
Change in social status	You or someone in your family has had a change in social status (e.g. –engagement or marriage, separation or divorce, starting or finishing education).
Problem with residence	You yourself have had any problem with your residence (e.g. change of residence or problems with neighbours).
Troubled relations with relatives	Your relations with any of your close relatives or friends have been troubled (e.g. quarrels or falling out etc.)
Troubled marital relations	Your marital relations with your spouse have had problems. (e.g. Quarrels or rows etc.)
Worried about children's problems	You have been worried about your children's problems (e.g. Problems concerning Children's health and education etc).
Quarrels in the family	You or other family members have had rows/quarrels amongst themselves.
Categorized stressful life events in the post-conflict year	≤ 2
	3-4
	≥ 5

3.5.4. Social support

The Multidimensional Scale of Perceived Social Support (MSPSS) was used to assess perceived social support. MSPSS was developed by Zimet and colleagues (Zimet et al., 1988). It is a self-rating tool of perceived social support consisting of 12 questions which are rated on a 7 point scale. The questions are grouped into 4 categories and ask about support received from *Significant Other, Family and Friends*. The 7 point scale ranges from 1 "very strongly disagree" to 7 "very strongly agree". This tool has been translated to Urdu and validated on a Pakistani population and has been found to have good construct validity and internal consistency (Akhtar et al., 2010). Therefore MSPSS was preferred to other measures of social support as the former was validated and in addition to enable comparison with similar research in other parts of the country (Husain et al., 2006, Husain et al., 2012, Akhtar et al., 2010, Rahman et al., 2008). Similarly the MSPSS has been adapted and validated in Turkey, and has shown significant power in the assessment of social support across different strata of population (Eker D and Yaldiz, 2000).

The instrument's questions along with the analysis criteria are presented in Table 3.7.

Table 3.7: Current social support variables in the analysis

Category/variable	Description and criteria
There is a special person who is around when I am in need There is a special person with whom I can share my joys and sorrows I have a special person who is a real source of comfort to me There is a special person in my life who cares about my feelings **Score on *Significant Other* subscale**	These variables are scored from 1 to 7 where 1 is "very strongly disagree" and 7 is "very strongly agree". Higher scores indicate better perceived levels of social support. These four variables reflect support from "*Significant Other"*. *Significant Other* subscale score was derived by calculating the total score of the above four variables and is presented as interval/continuous data in the analysis.
My family really tries to help me I get the emotional help and support I need from my family I can talk about my problems with my family My family is willing to help me make decisions **Score on *Family* subscale**	These variables are scored from 1 to 7 where 1 is "very strongly disagree" and 7 is "very strongly agree". Higher scores indicate better perceived levels of social support. These four variables reflect support from *"Family"*. *Family* subscale score was derived by calculating the total score of the four variables, and is presented as interval/continuous data in the analysis.
My friends really try to help me I can count on my friend when things go wrong I have friends with whom I can share my joys and sorrows I can talk about my problems with my friends **Score on *Friends* subscale**	These variables are scored from 1 to 7 where 1 is "very strongly disagree" and 7 is "very strongly agree". Higher scores indicate better perceived levels of social support. These last four variables are reflecting support from *"Friends"*. *Friend's* subscale score was derived by calculating the total score of the four variables and is presented as interval/continuous data in the analysis.

3.5.5. Measurement of other socio-demographic risk factors

Variables pertaining to potential determinants of psychological distress during pregnancy were identified from a review of previous studies conducted in Pakistan, but in non-humanitarian emergency settings (Rahman et al 2003; Husain et al 2007). These are described below:

a) Maternal factors/variables:

i) Age

Age (in years) was taken as interval data and was later categorized.

ii) Education

Data on maternal education were collected using the question "How many formal years of schooling did you have?" The respondents had to recall the number of years of schooling they had completed and the highest level of education attained. This was normally responded to as the number of grades a person has passed and roughly equals the number of years of education (see Table 3.8).

iii) Duration of pregnancy

The duration of a pregnancy was reported by the participant in months. For comparison of results in different trimesters and association with psychological distress duration of pregnancy was subsequently categorized to 1st, 2nd and 3rd trimester as ≤3 months, 4-6 months and >6 months respectively.

iv) History of miscarriage, stillbirth or infant death

As rates of still birth, miscarriages and infant deaths are high in Pakistan (NIPS, 2008) these variables were explored in the survey as a series of questions. The first question was "have any of your children died from any cause?" The answers were continuous numbers as zero for no and 1, 2 and so on for yes answers. In the later questions these were categorized according to the age of death from ≥1 year, <1 year and during pregnancy as beyond infancy, infancy and pregnancy losses (miscarriage or still birth) respectively. Later on during analysis these individual variables were coded as yes or no whether the respondent had a history of pregnancy loss or infant death to see the association with the current psychological distress.

v) Primi gravida

Gravida is a term used in medicine which refers to the number of times a woman has been pregnant, irrespective of whether the pregnancies were interrupted by miscarriage, death or resulted in a live birth. Primi gravida therefore means that the first pregnancy irrespective of the outcome. Primi gravida variable was calculated later from the data; as women with no living children and pregnancy loss and or infant/child deaths, were categorized as primi gravida.

b) Family variables:

i) Husband's education

This variable was coded the same way as maternal education.

ii) Family size

A series of continuous questions were asked about the total number of children in the family, female children, male children and children less than 7 years old. From these continuous variables a dichotomous variable was generated as more than 2 children younger than 7 years of age in the family (yes or no). This was used to determine the presence of 2 or more children of young age and whether this has any association with psychological distress during pregnancy.

iii) Family structure

Family structure was explored during the survey and women were asked whether they are living in a joint family system (with the family, in-laws and parents living together in one household) or nuclear (where only the married couple lives with their children).

c) Socioeconomic status:

Socioeconomic status was assessed through a number of related questions which are discussed below.

i) Husband's employment

Husband's employment status was categorized into five main categories as employed (working on regular salaried employment whether public or private), working on daily wages, self-employment (running his own business, shop or work), subsistence farming and unemployed (doing nothing for earning).

ii) Husband living away

This is to explore whether husband living away from home has any effect on the psychological distress during pregnancy. This was therefore explored as, the husband living away from home for work or employment for 6 or more months each year. Husband living away for 6 or more months per year were coded as yes and the other category as no.

iii) Socio-economic status assessed by the LHW

A five-point Likert scale previously used by Rahman et al (2003a) for assessing the household's socio-economic status was employed to get a subjective assessment of the participants' socioeconomic status. This approach asks the local LHW about the socio-economic status of the participants residing in her community. The LHW has a good understanding of the socio-economic context of her community and the relative socioeconomic status of the household being assessed. Therefore, this scale makes use of the intimate knowledge of LHW in assessing the socio-economic status of that particular household. Thus, LHWs were asked by the survey team to rate households from 1 (richest) to 5 (poorest). Although this technique is subjective it is a useful and brief approach to the assessment of socio-economic status for comparative purposes. For analysis, the categories were collapsed into 3 – relatively well-off (high) (1 and 2); average for that area (middle) (3); and relatively poor (low) (4 and 5).

iv) Financial empowerment

Swat region is traditionally patriarchal, and financial matters are the domain of the males in the household (Mohmand and Gazdar, 2007). However through education, awareness and in some

cases, necessity, many women have now some control and access to household finances. Consequently the presence of some control over household finances was chosen as a measure of empowerment and status within the household.

The tool was based on a similar measure used by Rahman et al (2003) in their study of risk factors for perinatal depression in rural Rawalpindi. Financial autonomy was measured by asking women if they were given any money by the main earner for everyday use, and secondly, whether the women had any autonomy to use this money as she wished. Women answering yes to both were classified as financially empowered with in the household.

All these socio-demographic variables are summarized in Table 3.8.

Table 3.8: Socio-demographic variables in the analysis

Category/variable	Data type	Description and criteria
Maternal/Obstetric factors		
Age	Ordinal	≤ 19 years, 20-24, 25-29 and 30+
Education	Ordinal	No education, 1-5 years and 6 years+
Any infant death	Binary	Any previous infant death Yes or No
Any pregnancy loss	Binary	Any previous pregnancy loss Yes or No
Primi gravida	Binary	Current pregnancy is the first pregnancy Yes or No
Duration of pregnancy	Nominal	Trimesters
Family factors		
Husband's education	Ordinal	No education, 1-5 years and 6 years+
Family size	Binary	2 or more children younger than 7 years of the family Yes or No
Family structure	Binary	Nuclear family Yes or No
Socioeconomic factors		
Husband employment	Nominal	Employed, Working on daily wages, farmer, self-employed, unemployed
Husband living away	Binary	Living away from home for ≥6 months per year for work/job.
Financial empowerment	Binary	Has some control over household finances, Yes or No
Socioeconomic status by LHW	Ordinal	Subjective rating of socioeconomic status on a scale where 1 is high SES, 2 middle and 3 low SES
Outcome variable		
Psychological distress	Binary	SRQ[1] score of 9 or above (psychological distress) as an outcome variable Yes or No

[1]*SRQ: Self-Reporting Questionnaire*

3.6. Training of Survey Team

The next phase was the training of survey team on the survey tools. All the tools were in the local language and adapted from previous validated research in Pakistan (see Section 3.5 and Appendix-1). The tools were given to the survey team and each item was discussed to ensure clarity on their meaning. The survey team conducted role plays and dummy interviews to gain proficiency before the main study.

3.7. Sample size calculations

The sample size calculation was based on the first two objectives of the study: 1) estimation of prevalence of psychological distress in pregnant women, and 2) association of psychological distress with exposure to potentially traumatic events. For the first objective, based on a previous study in rural Pakistan (Akhtar et al., 2010), a prevalence rate of psychological distress was assumed to be 40%, and with an alpha of 0.05 and a precision of 0.05 (Naing et al., 2006), a sample size of 369 pregnant women would allow us to estimate the prevalence, using the following formula

$$n=z^2\ p(1-p)/d^2$$

Where z is the z statistic of confidence level, p is prevalence, d is the precision using openEpi version 2.3.1 at (Dean AG, 2011). Assuming a non-response rate of 25% for refusals and exclusions combined, the final sample size for the survey was 462.

For the second study objective - to find associations between psychological distress in pregnant women and exposure to potentially traumatic events, I estimated the sample size based on the following assumptions: an alpha-error of 0.05, a beta error of 0.2 (i.e., a power of 80%) and conservative prevalence of potentially traumatic events in the population at 40% and ratio of distressed vs non-distressed of 1:1.5. Using openEpi version 2.3.1 (Dean AG, 2011) and assuming an OR of 2 as a measure of clinical significance, the sample size required would be 300.

3.8. Statistical analysis

3.8.1. Data cleaning, coding and missing data

All the data collected on a designated day were cleaned, computerized and filed by the PhD student on a daily basis. The data were cleaned using the process described in Van den Broeck et al (2005). Briefly, I screened the data for errors using graphical methods, by checking ranges and frequency distribution, cross-tabulations and summary statistics. Likewise, data was randomly checked daily against the original format at the end of data entry. Data errors were diagnosed and corrected after checking with the data collection team when they returned from the field. This led data being complete on all the variables included in the survey.

The data were coded, entered and analysed using the SPSS 20 statistical package. The main outcome, psychological distress, was dichotomised on the basis of a cut off of score of 9 or above on SRQ (Husain et al., 2000) and a prevalence of distress was calculated. The outcome variable was dichotomised and not used as continuous variable to enable comparison with other relevant national and international research (Husain et al., 2000, Husain et al., 2007, Akhtar et al., 2010, Rahman and Hafeez, 2003, Ludermir et al., 2010) as well as estimation of the

prevalence. Such prevalence figures, and the statistics generated, are easier to understand by policy-makers and practitioners, and also provide a marker for when intervention may be necessary. Thus thresholds were preferred to continual scores for the primary outcome. For other variables, categorisation of continuous variables was avoided to preserve statistical efficiency, although some variables were categorised to ease understanding, and variable categories were informed by clinical or social knowledge rather than on the basis of statistical ease.

I excluded data from mothers who delivered, or their pregnancy was terminated, before collection of data. This exclusion was felt to be consistent with the survey objectives that focused specifically on psychological distress during pregnancy.

3.8.2. Descriptive analysis of the data

Socio-demographic characteristics were elaborated as frequencies (percentages) and mean (S.D) where appropriate. Similarly, Individual items of SRQ-20, perceived social support, life events and potentially traumatic events were analysed and frequencies (percentages) obtained.

3.8.3. Univariate analysis of the data

A univariate analysis of the association between psychological distress and socio-demographic characteristics, perceived social support, stressful life events and traumatic life events were carried out. Chi squared tests in case of categorical data (Fisher's two-sided exact test was used if numbers in the cells were less than 5) and t test with continuous data were applied. Associations were considered significant at the 5% level.

3.8.4. Multiple logistic regression analysis of the data

A multiple logistic regression analysis of the association between psychological distress and all other variables was carried out to remove the effect of confounding variables in the model and to obtain adjusted odds ratios with 95% confidence intervals. All those variables with p-value <0.1 on univariate analysis were entered in the logistic regression model. Collinearity between explanatory variables was assessed. Variables entered into the analysis were categorized through a *priori* developed criteria.

3.9. Ethical considerations

Ethical approval was obtained from the University of Liverpool ethics committee alongside local ethical approval from Health Services Academy Ethics Review Board, Islamabad, Pakistan. Informed written consent was obtained from every participant after explaining the purpose of research and providing written information (verbal explanation in the case of illiterate participant) to participants (see Section 3.3 above for more details on the consent procedure). The right to withdrawal from the study at any time without providing a reason why was reinforced to all participants during consent and prior to the conduct of the survey.

Confidentiality was ensured throughout the project and access to personal data was only available to PhD student. Ethical challenges that arose during the conduct of the research field activities are discussed in detail in Section 10.2.4.

Cases of severe depression or other medical ailments requiring emergency treatment were referred immediately by the LHW to the trained medical staff at the primary health centre. The

primary care staffs were trained on the management of common mental disorders, as described below:

Basic Health Units (BHUs) are the primary point of access to government health facilities at Union Council level for the management of common diseases, providing basic health education and prevention. Therefore the staffs of both BHUs in Qambar and Odigram were invited for one day training at the Psychiatry department of Saidu Sharif hospital, a tertiary level hospital in the capital of the district. This training was primarily to enhance the knowledge and skills of primary care providers for better management of common mental disorders at the primary care level. Secondarily, the training also sought to develop better referral linkages between the primary, secondary and tertiary healthcare providers for cases needing specialized care and admission.

The training was conducted by a district psychiatry specialist and was very interactive with discussion throughout. Anxiety, depression and other common mental disorders were discussed in detail and modalities of treatments explored. Safe medicines in pregnancy were also discussed and explored for future use. The training was attended by the Medical in-charge of both facilities along with Medical Technician, Lady Health Visitor and Lady Health Supervisor. They were provided referral materials in case any patient required specialized care and were briefed regarding the conduct of the study. Furthermore; it was stressed that cases requiring specialist care identified through the study would be referred directly to the BHUs at which point the procedure outlined in the training was to be followed.

Chapter 4: Results - Study 1

4.1. Overview of the chapter

The survey was conducted over two months, from 1st September 2012 to 1st November 2012.

A general description of the study is presented followed by univariate analyses for association of psychological distress with potentially traumatic events during militancy in the region, stressful life events in the post-conflict year, current perceived social support, and other risk factors measured. The final section presents multiple logistic regression analysis to control for the effects of confounders in the univariate analysis.

The results are presented as follows:

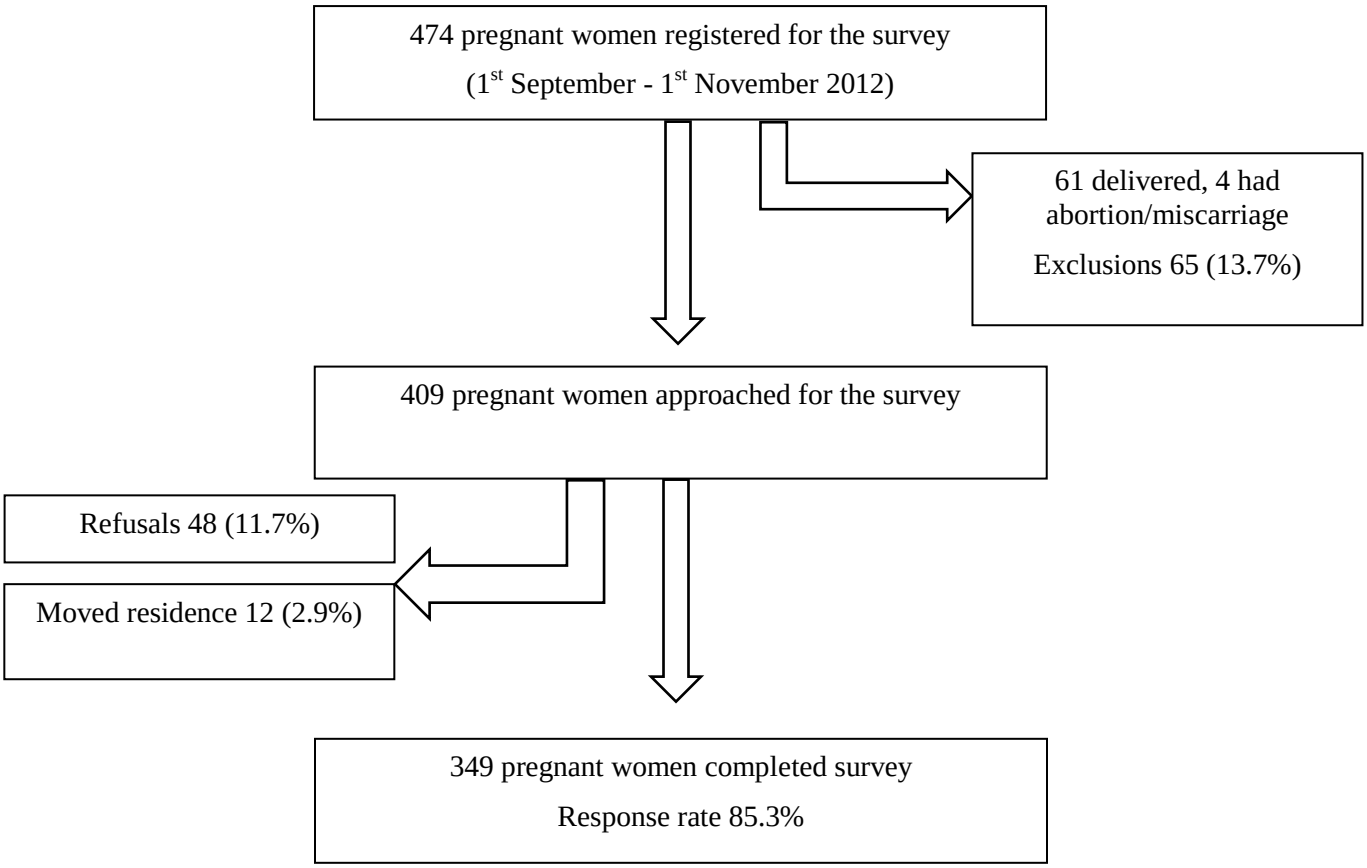
- Section 4.2 presents an overview of the sampling frame, study participants and follow-up rate in the survey.
- Section 4.3 (subsections 4.3.1-4.3.4) gives a general description of participants: their socio-demographic characteristics, potentially traumatic events during conflict, stressful life events in the post-conflict year and current social support. Frequencies and percentages are presented.
- Section 4.4 describes the prevalence of psychological distress as measured by the Self-Reporting Questionnaire (SRQ-20), accompanied by a description of the SRQ categories.
- Section 4.5 (sub sections of 4.5.1 to 4.5.4) presents findings of univariate analyses and associations of psychological distress with socio-demographic variables, potentially traumatic events during militancy, stressful life events in the post-conflict year and current social support. Chi squared tests (categorical) and t test independent samples (interval) were applied and associations considered significant at the 5% level.

- Section 4.6 presents associations of psychological distress with variables on multiple logistic regressions. Odds ratios are presented with 95% confidence interval and associations considered significant at the 5% level.

4.2. Overview of the surveyed sample and response rate

Four hundred and seventy-four pregnant women were enrolled during a two month period from 1st September till 1st November 2012. Of these 61 (12.9%) pregnant women delivered and four (0.8%) had abortion/miscarriage and were therefore excluded from the survey. The remaining 409 pregnant women were approached to take part in the study. Forty-eight (11.7%) refused to participate while twelve (2.9%) moved residence. Thus, a. total of 349 pregnant women were surveyed in the two union councils, with a response rate of 85.3%.

Figure 4.1: Flow diagram of the surveyed sample



4.3. Descriptive statistics of the sample

4.3.1. Socio-demographic characteristics of the sample

Table 4.1 describe key socio-demographic characteristics of respondents and their families. Half (51.9%) of the respondents were below 25 years of age and were in their third trimester (49.3%) of pregnancy, and more than half (56.4%) had no education. More than a quarter of respondents were primi gravida (29.2%) and a similar number had experienced pregnancy losses (26.6%) in the past. Mothers who had some control over household finances, defined as (a) having money to spend on day to day running of the household and (b) could make independent decisions on its use were classified as financially empowered. Based on this classification 51.9% of the pregnant women were financially empowered.

A third of respondent's husbands were uneducated (33.0%). A third of the husbands had regular employment (31.5%), while the most common employment status was working on daily wages (42.1%). About half of families (48.1%) were subjectively classified as relatively poor by their LHWs. Most families (88%) lived in a joint family structure.

Table 4.1: Socio-demographic characteristics (N=349)

Maternal/Obstetric factors		**Frequency**	**%**
Age	<= 19 years	68	19.5
	20 – 24 years	113	32.4
	25 – 29 years	90	25.8
	30+ years	78	22.3
Education	No education	197	56.4
	1 – 5 years	62	17.8
	6+ years	90	25.8
Infant death	Any infant death	25	7.2
Pregnancy loss	Any pregnancy loss	93	26.6
Primi gravida	First pregnancy	102	29.2
Duration of pregnancy	1st trimester	40	11.5
	2nd trimester	137	39.3
	3rd trimester	172	49.3
Family factors			
Husband's education	No education	115	33.0
	1 – 5 years	57	16.3
	6+ years	177	50.7
Family size	≥2 children younger than 7 years old	73	20.9
Family structure	Nuclear family	42	12.0
Socioeconomic factors			
Husband's employment	Regular employment	110	31.5
	Subsistence farming	18	5.2
	Working on daily wages	147	42.1
	Self employed	59	16.9
	Unemployed	15	4.3
Husband living away	≥6 months/ year from home	50	14.3
Financial Empowerment	Not empowered	168	48.1
Socioeconomic status by LHW	High	65	18.6
	Middle	116	33.2
	Low	168	48.1

4.3.2. Exposure to Potentially Traumatic Events during the conflict in Swat

For the purpose of this study, the period of active conflict was defined to begin in September 2007 and end in September 2011 (5 years), encompassing the period of time in which Pakistani military operations were conducted against the insurgents, as reported in Section 3.5.2.

Potentially Traumatic Events (PTEs) were subdivided into events that were experienced, witnessed or heard and are presented in Table 4.2. Widespread events such as loss of shelter and logistics (90%), war like situation (78%), inaccessible health care in times of need (59%), water and food scarcity (57%) and being close to death (48%) were experienced by majority of the respondents, as these events were more generalized. Conversely, specific PTEs like murder of family member or friend (13%), unnatural death of family member or friend (14%), strangers' murder (3%) and sexual harassment (1%) were experienced by a minority of the population.

Table 4.2: Potentially Traumatic Events (N=349)

Potentially traumatic events	**Experienced events** n (%)	**Witnessed events** n (%)	**Heard events** n (%)
Water and food scarcity	200 (57)	67 (19)	42 (12)
Inaccessible health care in time of need	206 (59)	38 (11)	48 (14)
Loss of shelter and logistics	314 (90)	15 (4)	9 (3)
Imprisonment	0 (0)	72 (21)	62 (18)
Dangerously wounded	0 (0)	126 (36)	74 (21)
War like situation	271 (78)	6 (2)	17 (5)
Brain washing	0 (0)	13 (4)	46 (13)
Sexual harassment	4 (1)	4 (1)	32 (9)
Forceful separation from others	9 (3)	1 (0.3)	24 (7)
Being close to death	168 (48)	7 (2)	18 (5)
Forceful separation from family	9 (3)	2 (1)	17 (5)
Murder of family member or friend	44 (13)	0 (0)	40 (12)
Unnatural death of family member or friend	48 (14)	5 (1)	18 (5)
Strangers' murder	10 (3)	33 (10)	99 (28)
Kidnapping	0 (0)	17 (5)	39 (11)
Torture	17 (5)	5 (1)	48 (14)

4.3.3. Stressful life events during the post-conflict year in Swat

The post-conflict year in Swat, for the purpose of this study, was defined as the year prior to conduct of the interview with the respondent. This corresponded with the period where the active conflict ended (Sept 2011) and the majority of inhabitants forcefully displaced from the region returned to their homes. The questionnaire therefore captures stressful events occurring during the rehabilitation and re-settlement period.

The stressful life events in the pregnant woman or her family in the post-conflict year have been summarized in Table 4.3. The table shows that rates of life events in the post-conflict year were high. More than half of the pregnant women answered positive to financial problems, which was by far the most commonly experienced stress. Likewise, half of the respondents had an event related to illnesses/accidents leading to hospitalization, and half experienced a change in social status i.e. marriage, engagement, divorce, or start of a new career. Livelihood problems, death or serious illness in close relatives and concerns over children's education and health were reported at around 40%. Less than one fifth reported problems of residence in the shape of change in residence or issues with their neighbours making this the least common life event of those explored in the checklist.

Table 4.3: Stressful life events in the post conflict year (N=349)

Stressful life events	Frequency	%
You yourself or a close relative of yours had been ill or had an accident which led to hospitalization	171	49
Any of your close relatives died or committed suicide or had gotten seriously ill	142	41
Has anyone in your family had problems of livelihood	159	46
You or someone in your family has had any financial problem	188	54
You or someone in your family has had a change in social status	175	50
You yourself have had any problem with your residence	61	18
Your relations with any of your close relatives or friends have been troubled	69	20
Your marital relations with your spouse have had problems	74	21
You have been worried about your children's problems	134	38
You or other family members have had rows/quarrels amongst themselves	98	28

4.3.4. Current levels of perceived social support

For the purpose of analysis, the Likert scale responses of the Multidimensional Scale of Perceived Social Support (MSPSS) were merged into 3 categories as follows: 'Disagree' (merging 1, very strongly disagree; 2, disagree; and 3, somewhat agree); 'Agree' (merging 5, somewhat agree; 6, agree; and 7 very strongly agree); the final category was 'neither agree nor disagree' (4 on the scale). According to these categories, current levels of perceived social support have been summarized in Table 4.4.

MSPSS demonstrates that current levels of social support were high in case of *Significant Other* (corresponding to the first four questions) and *Family* (corresponding to the middle four questions). As can be seen around 80% of the respondents felt they had good support from *Significant Other* and *Family* subscale. On the contrary, social support from the *Friends* subscale (corresponding to the last four questions) was relatively lower. Only one third of the participants agreed that had support from friends.

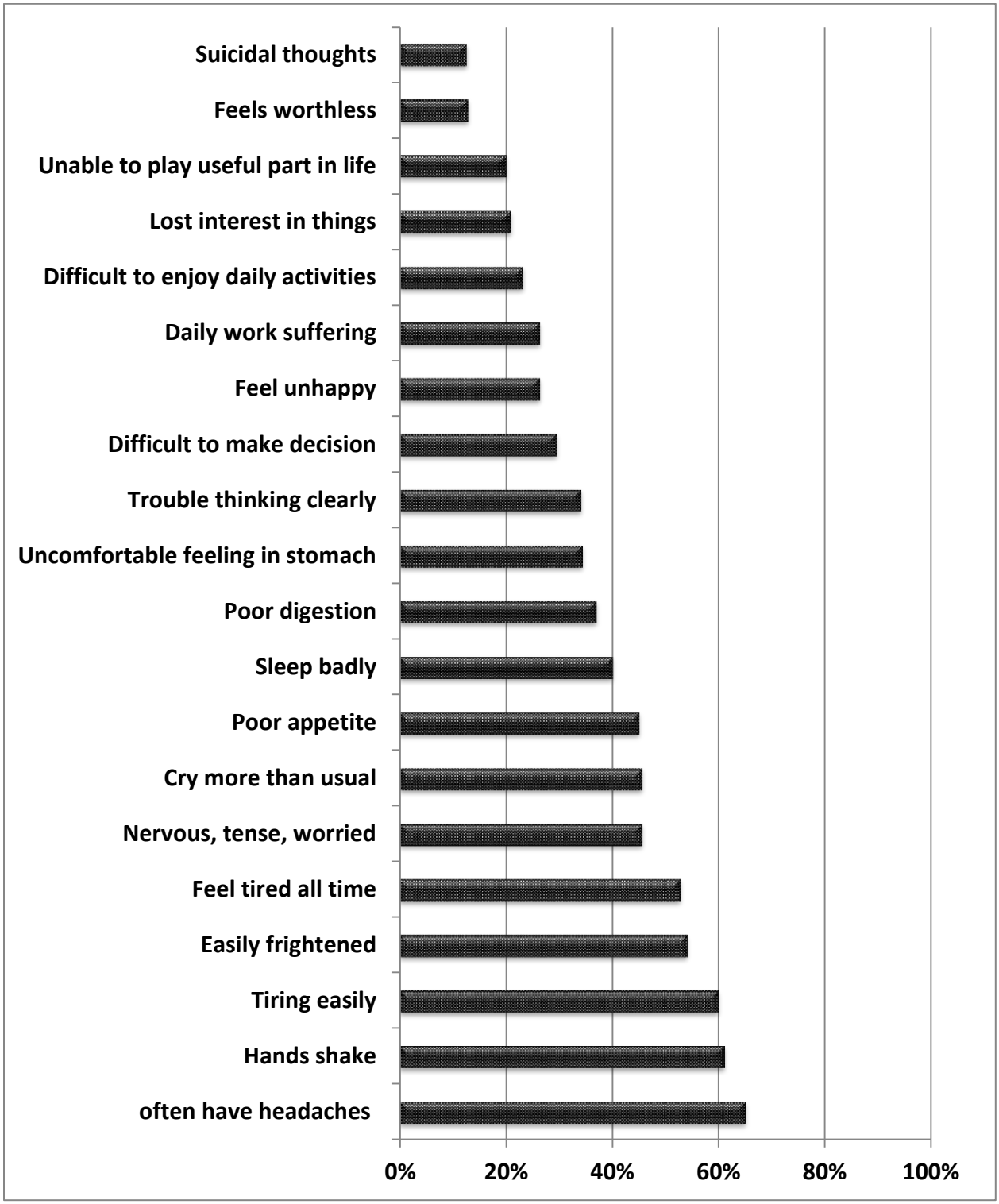
Table 4.4: Current levels of perceived social support (N=349)

Perceived social support	Disagree n (%)	Neither agree nor disagree n (%)	Agree n (%)
There is a special person who is around when I am in need	50 (4.9)	17 (14.3)	282 (80.8)
There is a special person with whom I can share my joys and sorrows	48 (13.8)	12 (3.4)	289 (82.8)
I have a special person who is a real source of comfort to me	49 (14.0)	15 (4.3)	285 (81.7)
There is a special person in my life who cares about my feelings	64 (18.3)	19 (5.4)	266 (76.2)
My family really tries to help me	52 (14.9)	16 (4.6)	281 (80.5)
I get the emotional help and support I need from my family	46 (13.2)	13 (3.7)	290 (83.1
I can talk about my problems with my family	56 (16.0)	15 (4.3)	278 (79.7)
My family is willing to help me make decisions	50 (14.3)	17 (4.9)	282 (80.8)
My friends really try to help me	89 (25.5)	140 (40.1)	120 (34.4)
I can count on my friend when things go wrong	108 (30.9)	156 (44.7)	85 (24.4)
I have friends with whom I can share my joys and sorrows	95 (27.2)	146 (41.8)	108 (30.9)
I can talk about my problems with my friends	94 (26.9)	145 (41.5)	110 (31.5)

4.4. Prevalence of psychological distress

Psychological distress was measured through the Self-Reporting Questionnaire (SRQ) which contains 20 questions relating to self-report psychological distress experienced over the previous one month. A score of nine or more was used to define psychological distress. Applying this definition, the prevalence of psychological distress in pregnancy was 38.1% (one hundred and thirty-three out of 349 women surveyed scored ≥ 9 on the SRQ). Figure 4.2 below graphically illustrates the individual percentages for each question in the SRQ.

Figure 4.2: Percentages of individual items of SRQ*-20



**Self-Reporting Questionnaire*

4.5. Associations of psychological distress on univariate analysis

4.5.1. Association with socio-demographic factors

Table 4.5 summarizes associations of socio-demographic characteristics with psychological distress. Among maternal/obstetric factors, a history of pregnancy loss and infant death were significantly associated with current psychological distress. Age, education and duration of pregnancy were not. Primi gravida was significantly negatively associated, i.e., had a protective effect against current psychological distress. Among family factors, having 2 or more children younger than 7 years of age and a nuclear family structure had a significant association with psychological distress, while husband's education did not.

Among socioeconomic factors, women with no financial empowerment demonstrated a significant association with psychological distress. Other socioeconomic factors including husband's employment, husband living away from home, and LHWs' subjective rating of socioeconomic status showed no association.

Table 4.5: Socio-demographic characteristics and association with psychological distress

		Psychological distress N= 133 n (%)	No psychological distress N= 216 n (%)	P- value
Maternal/Obstetric factors				
Age	<= 19 years	18 (14)	50 (23)	0.073
	20 – 24 years	42 (32)	71 (33)	
	25 – 29 years	36 (27)	54 (25)	
	30+ years	37 (28)	41 (19)	
Education	No education	73 (55)	124 (57)	0.154
	1 – 5 years	30 (23)	32 (15)	
	6+ years	30 (23)	60 (28)	
Infant death	Any infant death	14 (11)	11 (5)	0.056
Pregnancy loss	Any pregnancy loss	49 (37)	44 (20)	0.001
Primi gravida	First pregnancy	20 (15)	82 (38)	0.000
Duration of pregnancy	1st trimester	15 (11)	25 (12)	0.994
	2nd trimester	52 (39)	85 (39)	
	3rd trimester	66 (50)	106 (49)	
Family factors				
Husband's education	No education	40 (30)	75 (35)	0.510
	1 – 5 years	25 (19)	32 (15)	
	6+ years	68 (51)	109 (51)	
Family size	≥2 children younger than 7 years old	40 (30)	33 (15)	0.001
Family structure	Nuclear family	27 (20)	15 (7)	0.000
Socioeconomic factors				
Husband's employment	Regular employment	32 (24)	78 (36)	0.145
	Subsistence farming	6 (5)	12 (6)	
	Working on daily wages	64 (48)	83 (38)	
	Self employed	26 (20)	33 (15)	
	Unemployed	5 (4)	10 (5)	
Husband living away	≥6 months/ year from home	16 (12)	34 (16)	0.337
Financial Empowerment	Not empowered	74 (56)	94 (44)	0.028
Socioeconomic status by LHW	High	20 (15)	45 (21)	0.348
	Middle	44 (33)	72 (33)	
	Low	69 (52)	99 (46	

4.5.2. Association of potentially traumatic events (PTEs) during conflict with current psychological distress

Association of potentially traumatic events with current psychological distress are summarized in Table 4.6. *Experience* of PTEs associated with psychological distress were loss of shelter and logistics (P=0.050), being close to death (P=0.008), unnatural death of family member or friend (P=0.005), strangers' murder (P=0.035), and torture (P=0.005). Witnessing imprisonment (P=0.020) and hearing about sexual harassment (P=0.027) were the only significant events in the *witnessed* and *heard events* respectively that were associated with current psychological distress. After categorizing PTEs exposure into numbers of events experienced, witnessed or heard (≤ 2, 3, 4, $5 \geq 6$), only *experienced events* were significantly associated with psychological distress, while *witnessed* and *heard* events were not associated. These are reported in Table 4.7.

Table 4.6: PTEs and association with psychological distress

Potentially Traumatic events	Psychological distress N= 133 N (%)	No psychological distress N= 216 N (%)	P-value
Experienced PTEs			
Loss of shelter and logistics	125 (94)	189 (88)	0.050
Being close to death	76 (57)	92 (43)	0.008
Unnatural death of family member or friend	27 (20)	21 (10)	0.005
Strangers' murder	7 (5)	3 (1)	0.035[1]
Torture	12 (9)	5 (2)	0.005
Witnessed PTEs			
Imprisonment	36 (27)	36 (17)	0.020
Heard PTEs			
Sexual harassment	18 (14)	14 (7)	0.027

[1]*Fisher's exact test where number in cells less than 5, PTEs: Potentially Traumatic Events*

Table 4.7: Number of PTEs experienced, witnessed or heard and association with psychological distress

	Psychological distress N= 133 N (%)	No psychological distress N= 216 N (%)	P-value
Experienced PTEs			0.001
≤2	13 (10)	45 (21)	
3	34 (26)	71 (33)	
4	38 (29)	59 (27)	
5	22 (17)	24 (11)	
6+	26 (20)	17 (8)	
Witnessed PTEs			0.904[1]
≤2	116 (87)	192 (89)	
3	13 (10)	15 (7)	
4	3 (2)	6 (3)	
5	1 (1)	2 (1)	
6+	0 (0)	1 (1)	
Heard PTEs			0.759
≤2	89 (67)	158 (73)	
3	14 (11)	19 (9)	
4	9 (7)	11 (5)	
5	6 (5)	10 (5)	
6+	15 (11)	18 (8)	

[1]*Fisher's exact test where number in cells less than 5, PTEs: Potentially Traumatic Events*

4.5.3. Association of stressful life events in the post-conflict year with current psychological distress

Stressful life events in the post-conflict year were measured to explore association with current psychological distress. These are summarized in Table 4.8 below. Among the list of ten events that were explored, death or suicide, or serious illness of a close relative (P= 0.027), livelihood problems (P= 0.037), financial problems (P= 0.001), troubled relations with any of close relatives/friends (P= 0.000), troubled marital relations (P= 0.000), worry about children's health and education (P= 0.000) and rows/quarrels amongst family members (P= 0.000) were significantly associated with psychological distress. Problems with residence (P=0.276), change in social status (P=0.946) and illness/accidents leading to hospitalization (P=0.287) were not significantly associated with Psychological distress.

To assess the cumulative effect of multiple stressful events, these were added and the total numbers categorised into ≤ 2, 3-4 and ≥5 events in the previous year, as described in Section 3.5.3. Three or more life events were significantly associated with psychological distress while 2 or less were not significantly associated, as, shown below.

Table 4.8: Life's events and association with psychological distress

Stressful Life events during the past one year	Psychological distress N= 133 n (%)	No psychological distress N= 216 n (%)	P-value
You yourself or a close relative of yours had been ill or had an accident which led to hospitalization	70 (53)	101 (47)	0.287
Any of your close relatives died or committed suicide or had gotten seriously ill	64 (48)	78 (36)	0.027
Has anyone in your family had problems of livelihood	70 (53)	89 (41)	0.037
You or someone in your family has had any financial problem	87 (65)	101 (47)	0.001
You or someone in your family has had a change in social status	67 (50)	108 (50)	0.946
You yourself have had any problem with your residence	27 (20)	34 (16)	0.276
Your relations with any of your close relatives or friends have been troubled	41 (31)	28 (13)	0.000
Your marital relations with your spouse have had problems	44 (33)	30 (14)	0.000
You have been worried about your children's problems	71 (54)	63 (29)	0.000
You or other family members have had rows/quarrels amongst themselves	58 (44)	40 (19)	0.000
Categorized stressful life events in the post-conflict year			0.000
≤2	24 (18)	98 (45)	
3-4	44 (33)	62 (29)	
5+	65 (49)	56 (26)	

4.5.4. Association of perceived social support with current psychological distress

Association of perceived level of social support with psychological distress is presented in Table 4.9. Pregnant women with psychological distress had significantly less perceived social support (53.14±18.17) as compared to women without distress (64.76±12.24).

In addition, the association of each category of social support was compared separately with psychological distress. As is shown in the table below, psychologically distressed women significantly perceived less social support on the three subscales of *Significant Other* (mean difference 3.95, 95% CI: 2.49 to 5.41; P<0.0001), *Family* (mean difference 4.74, 95% CI: 3.19 to 6.28; P<0.0001) and *Friends* (mean difference 2.94, 95% CI: 1.42 to 4.45; P<0.0001).

Table 4.9: Perceived social support and association with psychological distress

Perceived social support	Psychological distress N= 133 Mean (SD)	No psychological distress N= 216 Mean (SD)	Mean difference	P-value
There is a special person who is around when I am in need	4.89 (2.11)	5.93 (1.41)	1.03	0.000
There is a special person with whom I can share my joys and sorrows	5.05 (2.11)	6.00 (1.37)	0.95	0.000
I have a special person who is a real source of comfort to me	5.11 (2.11)	5.95 (1.44)	0.84	0.000
There is a special person in my life who cares about my feelings	4.72 (2.27)	5.84 (1.58)	1.12	0.000
Score on *Significant Other* subscale	19.77 (7.56)	23.72 (5.12)	3.95	0.000
My family really tries to help me	4.80 (2.25)	6.01 (1.32)	1.21	0.000
I get the emotional help and support I need from my family	4.92 (2.15)	6.06 (1.25)	1.15	0.000
I can talk about my problems with my family	4.74 (2.28)	6.01 (1.38)	1.27	0.000
My family is willing to help me make decisions	4.89 (2.19)	6.00 (1.39)	1.11	0.000
Score on *Family* subscale	19.35 (8.22)	24.09 (4.78)	4.74	0.000
My friends really try to help me	3.61 (2.10)	4.43 (1.89)	0.82	0.000
I can count on my friend when things go wrong	3.20 (1.85)	4.04 (1.88)	0.83	0.000
I have friends with whom I can share my joys and sorrows	3.58 (1.95)	4.25 (1.92)	0.67	0.002
I can talk about my problems with my friends	3.62 (1.96)	4.25 (1.93)	0.62	0.004
Score on *Friends* subscale	14.02 (6.92)	16.95 (7.04)	2.94	0.000
MSPSS[1] total score	53.14 (18.17)	64.76 (12.24)	11.63	0.000

[1]*MSPSS: Multidimensional scale of perceived social support.*

4.6. Association with risk factors on multiple logistic regression analysis

Following univariate analysis, multiple logistic regression analysis was conducted to examine the effects of perceived social support, stressful life events in the post-conflict year, potentially traumatic events during conflict and socio-demographic factors on psychological distress in pregnancy by simultaneously controlling for all other variables.

For the multiple logistic regression analysis, only those variables which were significant in univariate analysis, or had a p-value of <0.1 were entered in to the model.

Psychological distress remained positively associated with nuclear family structure, three or more stressful life events in the previous year, and four or more potentially traumatic events. Being primi gravida and having perceived family support were negatively associated with psychological distress.

The multiple logistic regression analysis results are summarised in Table 4.10.

Table 4.10: Multiple logistic regression analysis (significantly associated factors highlighted)

Variables/factors		Odds ratio	95% CI of Odds ratio	P-value
Maternal/Obstetric factors				
Age	<= 19 years			
	20 – 24 years	0.613	0.27, 1.41	0.248
	25 – 29 years	0.516	0.21, 1.26	0.147
	30+ years	0.524	.20, 1.39	0.193
Infant death	Any infant death	1.826	0.66, 5.03	0.244
Pregnancy loss	Any pregnancy loss	1.145	0.62, 2.11	0.664
Primi gravida	First pregnancy	0.392	0.18, 0.85	0.018
Family factors				
Family size	≥2 children younger than 7 years old	1.469	0.77, 2.81	0.246
Family structure	Nuclear family	3.809	1.60, 9.08	0.003
Socioeconomic factors				
Financial Empowerment	Not empowered	1.070	0.62, 1.85	0.809
Number of PTEs	≤2			
	3	1.807	0.77, 4.25	0.175
	4	2.776	1.17, 6.60	0.021
	5	2.886	1.07, 7.77	0.036
	6+	4.786	1.70, 13.45	0.003
Number of stressful life events in the post-conflict year				
	≤2			
	3-4	2.924	1.48, 5.77	0.002
	5+	3.021	1.50, 6.07	0.002
Current social support				
Score on *Family* subscale		0.918	0.88, 0.96	0.000
Score on *Friends* subscale		0.974	0.94, 1.01	0.181

PTEs: Potentially Traumatic Events, CI: Confidence Interval

Chapter 5: Discussion

This first part of the chapter summarises the key findings, discusses methodological issues and, in the process, identifies strengths and limitations of the study. This is followed by a discussion of the main findings, covering two broad areas: the prevalence of psychological distress, and the nature of its association with traumatic events, stressful life events and current social support. This is done in light of other literature, focusing on Pakistan as well as other relevant international research.

Summary of key findings

This study was one of the first epidemiological studies to assess the prevalence of psychological distress during pregnancy in an area affected by conflict. The challenges of conducting research in such settings, and the paucity of research in this area, underline the significance of the study.

The prevalence of current psychological distress during pregnancy in a community-based sample of women living in a post-conflict setting in rural Swat, Pakistan, surveyed in a 2-month period between Sept-Nov 2012, was 38.1%. Current psychological distress in this sample was positively associated with exposure to four or more traumatic events during the years of the conflict, spanning from 2007 to 2011. There was a dose-response relationship, with levels of psychological distress increasing with an increase in the number of traumatic events. Psychological distress was also independently associated with three or more stressful life events in the year after the conflict. There was a similar dose-response relationship, with levels of psychological distress increasing with an increase in the number of stressful events. Perceived family support and living in a joint family was protective, as was being primi gravida.

5.1. General methodological considerations

5.1.1. Study design

Strengths and limitations

A cross sectional study design was chosen for this study, which was conducted in very challenging circumstances in a post-conflict setting where the security situation still presented a number of challenges for the researchers (see section 10.2.4). Theoretically, a prospective cohort design is the strongest, but would be almost impossible to carry out by the author in a setting where there was active armed conflict, given the risk to researchers and the resources required for such studies. Other designs, such as a case control study, were also not suitable as cases and controls are needed from a well-defined population. It was not possible for this study population because there was no facility/hospital where individuals suffering from psychological distress or depression would seek treatment. It is also known that only half of pregnant women receive antenatal care from a skilled provider in rural settings (NIPS, 2008), hence, the prevalence of psychological distress would have been underestimated.

Although the present study was a cross sectional study in which exposure and outcome information were collected at the same time, a history of exposure factors in the past (such as traumatic events, stressful life events) and the current status of exposure were assessed. The study design was, therefore an analytic cross sectional study with current and retrospective exposure measurements. Conventionally, it is not possible for this type of study design to assess the temporal relation between the exposure and the outcome i.e. whether the exposure led to the observed outcome or because of the outcome, an individual behaviour changed and the observed

exposure occurred. For example, in the current study it was found that low levels of perceived social support by the pregnant women was associated with psychological distress. However, it is not possible to predict if low levels of social support cause psychological distress or whether women who were experiencing psychological distress perceived low levels of social support.

Nevertheless, given the paucity of research in this area, even a cross-sectional study is important in providing preliminary information on which future studies can build.

5.1.2. Study population

Strengths and limitations

The study population for this cross sectional study consisted of all pregnant women enrolled during a two month period in the catchment area of two BHUs of district Swat. These health facilities were chosen on a number of methodological and logistic reasons as outlined in Section 3.1. Therefore, this is was a population-based study reflecting the true prevalence of psychological distress during pregnancy in the population. According to the demographic health survey (NIPS, 2008), only around half (53.5%) of pregnant women in rural settings receive antenatal care from a skilled provider (doctor, nurse, midwife and lady health visitor). Therefore a hospital-based sample would not have captured the true picture of the community. Lastly, female data collectors visited each woman in their own house according to the cultural sensitivities leading to high response rate (85.3%) as explained in detail in Section 3.4. The other unique characteristic of the study population was that almost all were exposed to mass displacement and potentially traumatic events that occurred during the early part of 2009 (Bile and Hafeez, 2009, Khattak, 2010). Thus, an important opportunity was available to document the

impact of the same traumatic events on the mental health of pregnant women in a single population.

Unlike many more remote rural areas of Pakistan, the study area was near a major city with easy access to hospitals, education institutions and other facilities. Thus, the findings might not be generalizable to other more remote rural areas. However, the study population is similar in terms of male and female literacy level to other rural areas of the country. Males and females with no education in the study area were 33% and 56.4% respectively, compared to 35.5% and 61.3% respectively for the overall rural areas of Pakistan (NIPS, 2008). On socioeconomic status (although there were significant differences in the way socioeconomic status was measured in this study), 48.1% of the households were classified as low socioeconomic status which is quite similar to the 50.4% for the province and 55.7% for the overall rural areas of the country (NIPS, 2008). Majority of the families were living in a joint family system (88%) which is the norm in this province (Husain et al., 2007) and high compared to those reported in other parts of the country/provinces, e.g. around 72-73% in rural settings in Rawalpindi (Rahman et al., 2003a) and an urban population in Karachi (Husain et al., 2011).

Another potential limitation is that the study relied on the list of pregnant women registered with LHWs and as pointed out earlier around 15% of households (Oxford, 2009) and areas which are not covered by LHWs could have been missed.

5.1.3. Study tools

A discussion about the measures used is important because if the instruments used are inappropriate or not valid and reliable, the results will be misleading.

Generally cross sectional survey questionnaires enquire about the current status of exposure. However, I also enquired about the past exposures of potentially traumatic events during the conflict (first section of the Harvard Trauma Questionnaire), stressful life events in the post-conflict year (Life Events Checklist for Pakistan) and psychological distress symptoms of the last month (Self-Reporting Questionnaire). There could be recall bias with retrospective questionnaires.

While some of the questionnaires such as the SRQ are designed to be self-administered, they had to be read out to participants as the literacy level of pregnant women in the area was low ($3/4^{th}$ of pregnant women with 5 years or less education). This was done in line with WHO guidelines for administration of such questionnaires to ensure a standard approach (WHO, 1994).

The strengths and limitations of individual instruments are discussed below.

Self-Reporting Questionnaire

The Self-Reporting Questionnaire is a frequently used instrument in low income countries and has been validated and used in Pakistani culture with high sensitivity and specificity – this is discussed in detail in Section 3.5.1. The SRQ includes many somatic symptoms, such as loss of appetite, inability to sleep well, fatigue which are also common during pregnancy. This may have contributed to a higher number of false positives. Indeed, However, research has shown that common mental disorders, especially in South Asia, are often expressed by somatic symptoms (Muñoz et al., 2005, Harding et al., 1980), and the SRQ is designed with this in mind. Furthermore, in line with recommendations from a validation study from rural Pakistan (Rahman et al, 2005), we kept a higher cut-off of ≥9 to adjust for the somatic symptoms of pregnancy.

Potentially Traumatic Events

These were measured using an adapted Urdu version of one section of the Harvard Trauma Questionnaire (HTQ) that includes a potentially traumatic event (PTE) inventory of 16 common traumatic events. The major event of militancy in the region happened during the early months of 2009 when nearly 2.5 million people were internally displaced to various cities in the province (Bile and Hafeez, 2009, Khattak, 2010). Given this study enquired retrospectively about exposure to potentially traumatic events that might have occurred around three years earlier, recall bias need to be considered. However, events with such a potentially severe traumatic influence will presumably be remembered for years. This is evident from a recent study conducted in a post-conflict area more than a decade after the actual militancy (Soosay et al., 2012).

Since the whole population was evacuated (part of PTE score), a score of 2 or less was used as the baseline category. This is in line with the literature which shows an increase in association between number of traumas and mental disorder (Steel et al., 2009).

Life Events Checklist for Pakistan

The life events checklist for Pakistan had been adapted from a study in the local context as discussed in Section 3.5.3. Checklists are criticised because they do not provide as detailed information as an in-depth interview. For example, the Life Events and Difficulties Schedule (LEDS), is an in-depth interview for the assessment of stressful life events in the past one year. However instead of the 'yes' or 'no' format of the Life Events checklist, LEDS has several probes to gain an in-depth understanding of the event (Husain et al., 2012). While the 'gold-

standard' to elicit stressful events of the previous year, LEDS takes at least an hour to administer and contains many detailed probes which many respondents, especially in a humanitarian crisis situation, feel uncomfortable. The Life Events Checklist, which takes only 10 minutes to administer, avoids these problems, but at the cost of greater validity and reliability of the information obtained. In my opinion, it is a good compromise because it is derived from the Life Events and Difficulties Schedule (LEDS) (Brown and Harris, (1989)). LEDS has been translated to Urdu and locally validated by Husain for local use in Pakistan (Husain et al., 2000). Rahman and colleagues (2003a) used Husain's (2000) data and developed the Life Events checklist as elaborated in Section 3.5.3. It has been used in previous studies in rural Pakistan.

Multidimensional Scale of Perceived Social Support

MSPSS had been locally translated and validated for use in Pakistan as explained in detail in Section 3.5.4. As with all the other instruments, MSPSS was read out to respondents because of the low levels of literacy. We found a high correlation (r = 0.85) between the *Significant Other* and *Family subscale* of MSPSS, and a weak correlation between *Friends* and *Significant Other* subscales (r = 0.22); and between *Friends* and *Family subscales* (r = 0.20). Therefore, the *Significant Other* subscale was not included in the final model of logistic regression analysis, to avoid collinearity between the two subscales. Other studies that have used the MSPSS in the Asian context have shown similar results (Zimet et al., 1988, Kazarian and McCabe, 1991). In a study of migrated Pakistani living in Hong Kong, Tonsing and colleagues found that only the *Friends subscale* was an independent factor while the *Family* and *Significant Other* were highly correlated and therefore collapsed into a single category of *Family subscale* (Tonsing et al., 2012).

A number of explanations were given by Akhtar and colleagues (2010) for the differences in the tool's behaviour in various cultural contexts. For example, the majority of the Swati population lives in a joint family system (88%). The *Significant Other* in this cultural setup is considered to be the husband as all of the respondents were married women and was difficult to conceptualize this person to be from outside the family. Therefore the support perceived from these two subscales i.e. *Significant Other and Family* subscale was considered to be the same and hence the high correlation between the two. The need to read out the Likert-type rating scales due to the women's low levels of literacy may also have introduced a degree of suggestibility and could potentially have resulted in response bias. Lastly, many (around 40%) of the respondents in the *Friends* subscale were neither agreeing nor disagreeing with the statements in the MSPSS scale. This could be possibly because of the cultural context of married women as they no longer have their childhood friends and stay most of the time inside their houses with their families.

Socioeconomic status

My survey used the five point Likert scale technique used by Rahman and colleagues (2003a) during his research for assessing the household's socio-economic status. Firstly, there is a possibility of bias in this method; psychologically distressed women may look poorer due to their condition. Secondly, due to the subjective nature involved in the measurement, the LHW's own perception of poverty may have influenced this measure. Nevertheless, it was decided that because LHW were local to the area they might be reasonable judge of socioeconomic status, especially since getting accurate estimations of household income is fraught with difficulties in agrarian settings where income is often pooled, or there is no set income that one could report.

Also, another study on women's mental health in South Asia found household income levels were rarely volunteered by the participants (Patel et al., 1997).

5.1.4. Potential biases in the study and measures taken to reduce them

Bias is a systematic error introduced into the study by either selection of study participants, data collection or data analysis leading to distortion of research findings. In broad terms, bias is generally divided into two groups i.e. selection bias and information bias.

Selection bias

Selection bias occurs when study participants are selected in some way dependent on the characteristics/factors to be compared. In the current study selection bias may have occurred if the probability of including pregnant women with or without psychological distress was different in relation to their location or exposure to traumatic events. Selection bias was minimized as every pregnant woman registered with an LHW from the area was approached for the survey regardless of her mental state or any other demographic/other traumatic characteristics. Importantly, the interviewing team was kept unaware of the way the psychological distress (outcome variable) will be defined from the SRQ scoring method. Although, as reported above, some of the households may not have been registered with LHWs or not covered by a LHW, and bias may have been introduced if not all the pregnant women in the area were enrolled into the study.

Information bias

In cross sectional studies information on outcome as well as risk factors is collected at one point in time. Self-reporting questionnaires are likely to produce information bias unless standardized methods are used and outcomes are measured objectively. Even in the case where information is objectively collected, respondents often provide information which is socially acceptable rather than the truth (Yu and Tse, 2012). Similarly information bias may occur if the interviewer is aware of the outcome or exposure status of the participant. There are various subtypes of information bias:

Interviewer bias

This type of bias may occur in relation to collecting information during an interview. For example, if interviewers have knowledge of the hypotheses of the study and become aware that the respondent is psychologically distressed, this might prompt them to enquire more about potentially traumatic events, perceived levels of social support or post-conflict stressful life events. However, in this study, the interviewers were not aware of the study's hypotheses or the diagnostic procedure and cut off score. Importantly, prior to any field activity the interviewers were rigorously trained on all the study tools through discussion, role plays and then piloting of the instruments in the field. The pilot results were then analysed and any misconception/misunderstanding clarified in the second refresher training. Therefore, every effort was taken to minimize interviewer bias.

Recall bias

Recall bias occurs when events are remembered or reported differently by affected and unaffected participants. This type of bias has been discussed above in relation to individual tools that were used during survey.

Misclassification bias

In epidemiological studies, there is often some degree of misclassification of exposure and outcome, which cannot be ruled out. Misclassification would be random (non-differential) if the different groups have nearly similar misclassification or differential if different groups have different misclassification. Random or non-differential misclassification underestimates the true estimation between exposure and outcome variables while the other may either over or underestimate the true association. A standard approach was used for all the participants and the interviewer were also unaware of how the outcome would be assigned. Thus, a random (non-differential) misclassification would have occurred in the current study. Therefore, the misclassification may have underestimated the association between the psychological distress and PTEs or stressful life events.

5.2. Discussion of the main findings

5.2.1. Prevalence of psychological distress during pregnancy

The first objective of study 1 was to determine the prevalence of psychological distress in pregnant women living in two union councils of the district of Swat, Pakistan. Psychological distress experienced in the month prior to interview was measured through the Self-Reporting Questionnaire (SRQ). A score of nine or more was used to define psychological distress. Using this definition, the prevalence of psychological distress in pregnancy was 38.1% (133/349 pregnant women scored ≥ 9 on the SRQ) in the study area.

As has been discussed in detail in previous sections, prevalence rates vary with the assessment approach used. When screening instruments are used, there is further variation in rates, depending on the cut-off score used to define the problem. Thus, in a recent study in rural Rawalpindi, with a cut of score of 7 and above on SRQ, the reported prevalence of psychological distress during the third trimester of pregnancy was 56% (Akhtar et al., 2010). For the current study, using the same cut-off yields a prevalence of 53.9% (188/349 pregnant women scored ≥ 7 on the SRQ). This is similar to the prevalence estimates of the Rawalpindi study with the study population being pregnant women in both study sites. In another study in urban Karachi; 292 pregnant women attending four hospitals were surveyed while attending for antenatal visit (Kazi et al., 2006). Depression symptoms were assessed through the translated version (in Urdu language) of Centre for Epidemiological Studies - Depression (CES-D) scale, which is a more detailed tool. On the cut-off score of 16; 39.4% (112/292) pregnant women were labelled as depressed. This prevalence estimate is also similar to what was found in the current study, using

a higher cut-off. A higher prevalence rate of depression during pregnancy (48.4%) using the Edinburgh Postnatal Depression Scale with a high cut off score of 13 or above was reported in a population based study in northern mountainous part of Pakistan (Shah et al., 2011). The most robustly conducted longitudinal cohort study of perinatal depression in rural Rawalpindi, using a detailed diagnostic interview by clinically experienced and trained specialists (Rahman et al, 2003) showed a prevalence of 25% in the prenatal period and 28%in the postnatal period. While all of these studies on the same target population but in different settings present a range of prevalence rates, studies (such as ours) that have used more conservative cut-offs indicate that around a quarter of women have clinically significant rates of psychological distress in non-humanitarian settings, and this increases to about a third in humanitarian settings.

Two studies from Pakistan, using the same instrument (SRQ) but on different target populations have, reported even higher prevalence rates. A population based study in tribal settings reported 60% prevalence in tribal women aged 16 years and above with similar cut off score of 9 or above (Husain et al., 2007). In another study from Pakistan in Afghani women caring for small children in two refugee camps in the Khyber Pakhtunkhwa province, using a higher cut off score ≥13, a prevalence rate of 36% was reported (Rahman and Hafeez, 2003). Using this cut-off, the prevalence in Swat would be 13.8%. One potential explanation for the higher rates in these groups could be the hostile and oppressive living conditions for the women in general in these settings (Omidian and Miller, 2006) – 'the worst place to be a mother' according to Save the Children's World's Mother's Report (Save the Children, 2012). The tribal study was conducted in a rural area with very limited resources in the shape of health facilities, infrastructure, transportation, schools etc. (Husain et al., 2007). The prevalence rate of 60% in the tribal area

was similar to another study in the neighbouring area of Afghanistan where depressive symptoms were found in 58% of women (Scholte et al., 2004).

Studies from the last decade in other low and middle-income settings, using comparable methodologies, have also reported results not dissimilar from ours. A community study in rural Bangladesh reported a prevalence rate of depression of 33% during pregnancy with a cut off score of 10 or above using a locally validated version of EPDS (Gausia et al., 2009a). Similar prevalence estimates of common mental disorders were obtained in a Brazilian community based study with pregnant women in their third trimester (Ludermir et al., 2010), who reported a prevalence of 43.1% using a cut off score of 8 or above. This finding is similar to the current study, where the prevalence is 44.4% if a cut-off score of 8 or above is used.

Very few studies have been done on women living in a conflict, or post-conflict situation. A cross sectional survey (Roberts et al., 2009) conducted in the town of Juba, the capital of Southern Sudan, enables comparisons with another country that has experienced mass conflict and militancy. Robert et al's survey was conducted almost 3 years after the peace agreement that followed years of civil war. A high prevalence of depression in women aged 18 years and above was reported – 58.7% using the Hopkins Symptom Checklist-25 with a cut off ≥ 1.75 (Roberts et al., 2009). There was higher prevalence of depressive symptoms in this study compared to my findings. The research settings and methods were quite similar as both collected data 3 years after the traumatic events; nevertheless the differences could perhaps be explained by the nature and severity of the conflicts.

In a large meta-analysis of a 117 studies on refugees or conflict affected populations (n = 57796) in all countries and on the general (rather than perinatal) populations, the prevalence of depression ranged from 3% to 85.5% and shows substantial heterogeneity. The weighted prevalence for depression across all 117 surveys was 30.8% (95% CI: 26.3 to 35.6). However, some of the surveys that used the self-report questionnaire reported higher prevalence of 36.7% compared to those applying diagnostic interviews of 23.2% (Steel et al., 2009).

To conclude, on the one hand, the prevalence in this population based study in Swat is quite similar to that reported in other parts of the country (Akhtar et al., 2010, Kazi et al., 2006, Shah et al., 2011). On the other hand, comparisons with areas where the population was exposed to conflict/displacement, the prevalence rate was relatively low (Roberts et al., 2009, Steel et al., 2009). One explanation could be that in the preceding year, life in the troubled Swat valley has progressed to normalcy, and that the nature and severity of the military conflict was qualitatively less severe and direct than what is faced by other populations. Nevertheless, traumatic events do have an independent effect on current levels of psychological distress, as is discussed in the next section.

5.2.2. Associations of psychological distress with traumatic events

The second objective of study-1 was to study the associations of psychological distress with exposure to potentially traumatic events as a result of armed conflict occurring in the study area. Compared to the reference range (2 or less potentially traumatic events, based on the premise that almost all participants were exposed to at least 2 events due to the general nature of the conflict), psychological distress was positively associated with four or more potentially traumatic events when adjusted for all the variables, as shown in Table 4.10. There was a dose response

relationship evident as well, where the odds of psychological distress increased as the number of PTEs increased.

In the study by Roberts and colleagues (2009) in Southern Sudan, life-time exposures to 8 or more potentially traumatic events were independently associated with depression (OR=2.21, 95% CI: 1.60 to 3.07). Additionally, in their study, an independent association with depression was obtained for 4 or more PTEs occurring in the last one year of the survey date (OR=2.09, 95% CI: 1.32 to 3.32). In my study I found that four PTEs were significantly associated with psychological distress and the association had a dose response relationship as the PTEs increased from 4 (OR=2.80, 95% CI: 1.18 to 6.65) to 5 (OR=2.85, 95% CI: 1.04 to 7.79) and then 6 or more (OR=4.62, 95% CI: 1.59 to 13.44). Likewise, in a study on Somali refugees in the UK, cumulative pre-migration traumatic events were independently associated with anxiety and depression states (Bhui et al., 2003, Bhui and Warfa, 2010).

Apart from the effects of the cumulative traumatic events as discussed above, individual traumatic events such as forceful separation from family, experiencing very ill health without access to medical care, and being injured were also independently associated with depression (Roberts et al., 2009). However in my study individual traumatic events (such as experiencing loss of shelter and logistics, being close to death, unnatural death of family member or friend, stranger or strangers murder, torture, witnessing imprisonment and hearing about sexual harassment) were associated with psychological distress on univariate analysis but were not independent predictors on multiple logistic regression analysis. One possible explanation could be that most of the potentially traumatic events were generalized and widespread in the study participants while others were very rare and sporadic to be independent predictors.

In a large meta-analysis of studies on refugees or conflict affected populations (Steel et al., 2009) (n = 57796), cumulative exposure to PTEs was strongly associated with depression. Due to the large variation in the list of PTEs assessed, an adversity ratio of PTE was derived by the average number of PTEs experienced divided by the total number of PTEs assessed. PTE adversity ratio of ≤0.19 yielded lower weighted depression prevalence of 13.7%. This increased to 34.8% and 40% with the PTE ratio of more than 0.30 and 0.40 respectively. This validates the dose response relationship in my study. Similar dose response effects were also obtained in two studies conducted more than two decades ago with Cambodian and Vietnamese refugees (Mollica et al., 1998a, Mollica et al., 1998b).

All these comparisons validate my findings of the independent associations between PTEs and psychological distress and the dose response effect, although all of these other studies were conducted on the general population and not specifically pregnant women. However, all the study populations in these studies were exposed to PTEs resulting from conflict or displacement.

5.2.3. Associations of psychological distress with stressful life events

None of the measured stressful life events occurring during the last one year were significant on multivariate analysis in the presence of other variables. However seven out of ten life events were significant on univariate analysis with psychological distress. These were death/suicide or serious illness in a close relative, livelihood and financial problems, troubled relations with any close relatives/friends, troubled marital relations, worries about children's health/education and rows/quarrels amongst family members. Illness/accidents leading to hospitalization, problems with residence and change in social status on the other hand were not significantly associated with psychological distress. However, taken cumulatively, three or more stressful life events in

the previous one year were independent predictor of psychological distress and there was dose-response relationship as the odds increased when the events increased from the category 3-4 to 5 or more.

Similar results were obtained in a rural sub district of Rawalpindi by Rahman and colleagues (Rahman et al., 2003a). Stressful life events in the previous one year that were associated with depression during third trimester of pregnancy in their study were unemployment of the earning member (usually the husband), financial difficulties, housing problems, relationship issues within the extended family and serious marital problems. There were some differences in the events associated with outcome: in the current study, close relative's death/suicide or serious illness was positively associated with psychological distress, while the Rawalpindi study found a positive association with housing problems which this study did not; problem with the law and lack of friend or confidant were associated in Rawalpindi and not in Swat; troubled relations with relatives/friends and worries about children were associated in Swat and not in Rawalpindi. A further dissimilarity between the two studies was that all the stressful life events in my study population were higher in prevalence as compared to the Rawalpindi study, which is understandable, given the humanitarian crisis context of Swat. Interestingly, another study in rural Punjab by Husain and colleagues (Husain et al., 2006) found none of these stressful life events significant in their study. They only found domestic violence to be associated with postnatal depression, a variable not assessed in this study. Instead, information about rows/quarrels amongst family members was obtained, which was found to have a significant association. The limitation of Husain et al's (2006) study was that in some of the strata, the number of subjects was very low to allow for any meaningful interpretation. However, the total

numbers of life events were significantly more in the depressed group as compared to the non-depressed, which is similar to the findings of this study.

Other low and middle income countries suggest similar association between life-stresses and mental health problems. A study in Nepal (Ho-Yen et al., 2007) with postnatal women, stressful life events were independent predictors of postnatal depression in the presence of other risk factors. Ho-Yen et al did not ask for a list of stressful life events but only a single question about stressful life events in the previous year as 'yes' or 'no'. Likewise, recent stressful life events were independent predictors of both depression and anxiety in pregnant women in Turkey (Karaçam and Ançel, 2009). Furthermore, a study with British Pakistani pregnant women in their third trimester found depressed pregnant women were more likely to have had non-health related difficulties, such as housing, financial and marital issues in the past one year preceding the assessments (Husain et al., 2012). These difficulties were independently associated with depression during third trimester in the presence of other risk factors. Again, like the Nepal study (Ho-Yen et al., 2007) only one category was reported by Husain et al, and not a list of events, and might have been calculated from the sum of individual difficulties in terms of housing, financial and marital issues. Similar findings were obtained in my study where 3 or more stressful life events in the previous year were independent predictors of psychological distress during pregnancy and the risk increased with increasing difficulties.

5.2.4. Associations of psychological distress with social support

Perceived level of social support was assessed through MSPSS. The scale assesses social support from three main areas i.e. *Significant Other, Family and Friends,* as discussed. Pregnant women with psychological distress had significantly less total perceived social support (53.14±18.17) as

compared to women without distress (64.76±12.24). Likewise, all individual areas on MSPSS and on the three subscales, psychologically distressed women perceived less social support as compared to women without distress. On multiple logistic regression, only the *Family* subscale was an independent predictor of distress and this association was negative. Which means decrease in social support from the family was increasing the likelihood of psychological distress in the presence of other risk factors.

In the study in rural Rawalpindi by Husain and colleagues on postnatal women (Husain et al., 2006), 8 out of the 12 items on MSPSS and all three subscales of social support had significantly lower mean scores in depressed women than the non-depressed. Husain et al did not report further analysis on the data that could have yielded useful comparisons with the Swat study. A study in urban Karachi in Pakistan also found social relations as independent predictor of depression during pregnancy (Kazi et al., 2006). Social relations were assessed pertaining to the relations of the pregnant woman with husband, in-laws and children. Social relations as a whole as well as relations with husband and in-laws (separately) were independent predictor of depression during pregnancy in the presence of other risk factors. Similarly, in a prospective cohort study of British Pakistani women (Husain et al., 2012), the mean scores on all the three subscales of MSPSS along with the total score of MSPSS were significantly lower in depressed pregnant women during their third trimester. But none of the three subscales of social support were independent predictors of depression either during third trimester or during the postnatal period. This is different to my study where I found family support to be a protective factor against psychological distress. One possible explanation could be that the family structure in my study area was largely extended, and family support is an important part of everyone's lives. In

the study by Husain et al, the social context of British Pakistani women may be different and therefore might not be significant in the prediction of psychological distress.

Studies conducted in other low and middle income countries also provide interesting comparisons with the Swat study. In Turkey, perceived social support was the strongest predictor of depression during pregnancy (Karaçam and Ançel, 2009). This study showed only the total score of MSPSS and did not report individual subscales of the tool and hence individual comparisons with the subscale were not possible. In another study from Turkey (Golbasi et al., 2010), significant negative correlation (r = -0.43) was found between perceived social support and depression during pregnancy. A similar correlation (r = -0.45) was observed in the Swat study.

These comparisons validate my findings presented here and reiterate the importance of family support in order to minimize the risk of depression during pregnancy and after childbirth. This may be especially important in humanitarian emergency situations – keeping families together and providing an environment where families could support each other may be an important preventive strategy.

5.2.5. Associations of psychological distress with other factors

Nuclear family structure was an independent predictor of psychological distress during pregnancy. Or conversely, a joint family structure was protective, supporting the importance of family support described above. Thus, both living in an extended family system after the disaster, and *perceived* support from the family are important protective factors. Similar findings were found in rural Punjab (Husain et al., 2011) where living in nuclear family structure was an

independent predictor of depression during pregnancy. Similarly, in another study from rural Pakistan (Rahman et al., 2003a), living in an extended family was found to protect against postnatal depression.

This finding across many studies validates my findings, and also stresses the importance of social, especially family support as a protective factor.

Primi gravida was a protective factor in the presence of other risk factors. This may be because newly pregnant women might not have the additional stress of having young children (two or more children under age 7 was associated with distress on univariate analysis). Also, they might receive extra care and support for their first pregnancy.

5.2.6. Factors which were not significant

Maternal/obstetric factors

I did not find a significant association between maternal age and psychological distress, although there were more psychologically distressed women in the higher age categories. There is inconsistent evidence regarding age and psychological distress from studies in low and middle-income countries. Some studies have reported an association with younger age, others an association with older age, and yet others found no association with age (Fisher et al., 2012, Husain et al., 2012, Husain et al., 2011).

Similarly, no association was obtained for maternal education. In a recent systematic review, higher levels of education amongst perinatal women were found to be protective against common mental disorders in low and middle-income countries (Fisher et al., 2012). A possible

explanation could be that in Swat, only 3/4th of the pregnant women had only very basic education (up to 5th grade or less). This overall low level of education in the sample could be the reason for not finding a discernable association between maternal education and psychological distress.

Any pregnancy loss (miscarriage and still births combined) was significantly associated with psychological distress in univariate analysis but not in logistic regression. *Any infant death* in the past was not associated with psychological distress at both levels of analysis. Similar results were obtained in a study from the urban Karachi, Pakistan (Husain et al., 2011) where no association was found between *ever lost a child* and depression during third trimester of pregnancy. However, significantly high depression and anxiety scores were reported in women with previous history of single or more abortion compared to normal pregnancy and or first time pregnancy in India (Chalana and Sachdeva, 2012). Furthermore, depression and anxiety scores decreased with increase in time gap between abortion and current pregnancy. Although, I did not measure the time period since the last pregnancy loss in my study, I found there was a significant difference between SRQ scores of those with a history of pregnancy loss compared to those without. However, none of these factors independently predict psychological distress in the presence of other risk factors.

Lastly, pregnancy duration (trimesters) was not associated with psychological distress and a similar prevalence was observed between the three trimesters of pregnancy. A meta-analysis (Bennett et al., 2004) found different rates of depression in the three trimesters. The authors reported 7.4%, 12.8% and 12% prevalence rates in first, second and third trimester respectively, but argued that interpretation should be cautious as few studies were available for the first

trimester of pregnancy and the rates were determined on a small number of patients. Similarly lesser number of pregnant women (12%) participated in the current study during their first trimester, compared to the 2nd and 3rd trimester of 39% and 49% respectively. This could be because few women seek antenatal care until further advanced in pregnancy – only 23.5% women had a first antenatal care visit with less than 4 months of pregnancy duration (NIPS, 2008).

Family factors

Family size of 2 or more children younger than 7 years was highly significant in univariate analysis but was not associated with psychological distress on logistic regression. Similar results were obtained in a Rawalpindi study (Rahman et al., 2003a), where significant associations were obtained between family size and postnatal depression in uni-variate analysis but not during logistic regression.

In my study the husband's literacy level was also not associated with psychological distress, which is similar to the urban study in Karachi Pakistan (Husain et al., 2011). Similar results were obtained in the Rawalpindi study (Rahman et al., 2003a) where husband illiteracy was not a risk factor for postnatal depression in the presence of other risk factors.

Socioeconomic factors

None of the socioeconomic factors that were explored in my study were independent predictors of psychological distress. Nevertheless, a recent review of literature regarding risk factors of perinatal common mental disorders in low and middle-income countries did report

socioeconomic disadvantage as a risk factor. However, the evidence was not consistent, especially for factors such as low income, unemployment or economic hardships (Fisher et al., 2012). My findings were more consistent with findings from another study conducted in rural Punjab (Rahman et al., 2003a) where no association was found with socioeconomic status (assessed through subjective rating by LHWs) and husband's living away for work for more than 6 months per year with postnatal depression. Although, contrary to my study, they found the husband's unemployment to be independently associated with postnatal depression (Rahman et al., 2003a). Likewise, women's financial independence was significantly protective against depression in both settings but was not independently protective in presence of other risk factors. This protective influence might be related to issues of empowerment, as women with financial independence may have more freedom and autonomy and hence might be less distressed both before and after childbirth than those with no control over household finances.

5.3. Conclusion

This study was one of the first epidemiological studies to assess the prevalence of psychological distress during pregnancy in an area affected by conflict. The study shows that over a third of all women show evidence of significant psychological distress, and are likely to be suffering from a common mental disorder (anxiety or depression). Exposure to 4 or more potentially traumatic events during the time of active conflict, even though it ended a year before the study commenced, was still independently associated with psychological distress. There were a higher number of stressful events in the year following the conflict, and exposure to more than 3 or more such events was independently associated with psychological distress. Family support, both perceived by the women, and in the form of a joint family structure, was an important protective

factor. These findings fit the model proposed by Miller and Rasmussen (Miller and Rasmussen, 2010), described in detail in Section 1.2.3. This model proposes that the interaction between past traumatic events and mental health is partially mediated by daily stressors of life in the context of humanitarian settings. Miller and Rasmussen argue that the experience of past traumatic events has a significant role in predicting mental health in humanitarian settings. However, past events are often overly focused upon, compared to the daily stressors that are present in abundance in post-conflict environments (Miller and Rasmussen, 2010). According to Miller's and Rasmussen's model, a more holistic and integrative approach is needed that addresses the daily stressors through psychosocial interventions in the first instance. If, following this approach, symptoms are not relieved, referral to specialist care should be considered for individuals whose persistent distress does not abate with the reduction of daily stressors. Therefore based on this, it is vital to engage families in the management of psychological distress in this conservative cultural setup and address these daily stressors. As evident in the current study, family support was protective against psychological distress; therefore psychosocial interventions need to be delivered in the current settings in order to increase family support for pregnant and postnatal women. As explained elsewhere, awareness regarding mental health issues is poor in the region (Rahman et al., 1998). Therefore a psycho-educational intervention cognisant of local cultural sensitivities could be helpful in raising awareness and seeking appropriate health-care. This was the main aim of the second phase of the research study and will be discussed in the subsequent chapters.

PART TWO

Chapter 6: Introduction - Study 2

Study 1 informed us that over a third of perinatal women exposed to armed conflict and temporary displacement from their communities, and now living in a post-conflict situation, were psychologically distressed. Traumatic events as well as stresses of everyday life contributed to these high rates. Family support appeared to have a strong protective effect. It would therefore be important to explore the feasibility of interventions that lead to recognition of psychological distress in such women, and lead to greater support by the family, and appropriate help-seeking if necessary. Study 2 describes such an effort in the context of Swat in Pakistan. The current chapter reviews approaches to intervention in humanitarian contexts, and describes interventions for perinatal mental health in low and middle-income countries that could inform our intervention.

6.1. Mental health in humanitarian emergencies

In Section 1.2, it was observed that not everyone affected by a humanitarian crisis develops a mental disorder. The broad range of reactions to traumatic events, such as humanitarian emergencies, were represented by a pyramid (see Figure 1.2) where the base of the pyramid displayed no or non-pathological distress, the smallest group at the top represented severe mental health disorders and the middle group represented mild or moderate mental health problems (such as PTSD, depression, anxiety disorders such as generalized anxiety disorder or panic disorder, substance misuse as well as culture specific syndromes). The majority of our psychologically distressed women would fall in the middle of the pyramid.

6.2. Response to mental health in humanitarian emergencies

Mental Health and Psychosocial Support (MHPSS) is defined as "any type of local or outside support that aims to protect or promote psychosocial well-being and/or prevent or treat mental disorder" (IASC, 2007). The vast majority of research under the post-disaster mental health umbrella has been carried out on PTSD (George et al., 2012). However as summarised above, there are huge variations in the ways people are affected during humanitarian emergencies and therefore different forms of support are needed. Therefore a more holistic view of the response to mental health in humanitarian emergencies is required.

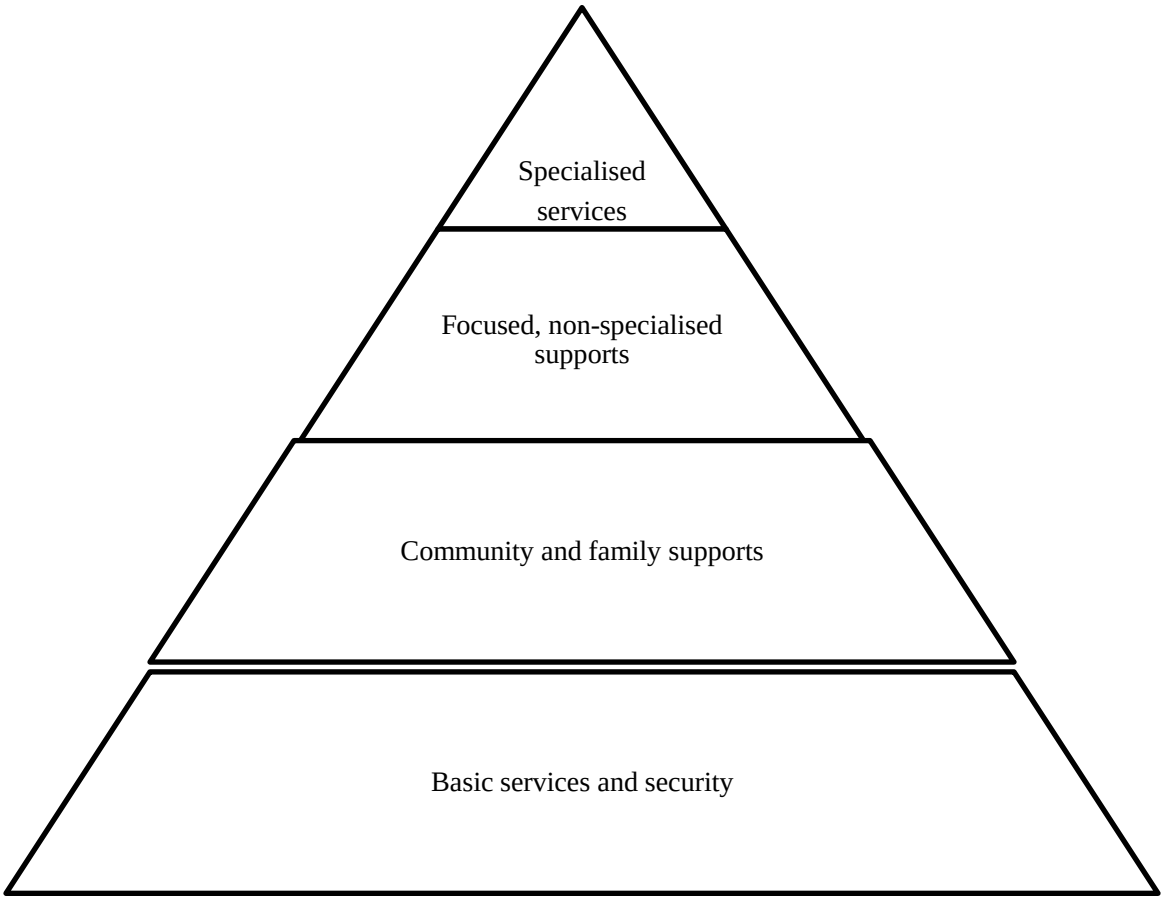
Recently, a broader vision of the support structures needed in the humanitarian field to address the mental health needs has been identified (IASC, 2007, Mollica et al., 2004, Miller and Rasmussen, 2010, van Ommeren et al., 2005a, Van Ommeren et al., 2005b). This vision has been advocated as an integrative model where a range of social programs along with more specialized

mental health interventions come together (IASC, 2007, Mollica et al., 2004, Miller and Rasmussen, 2010, van Ommeren et al., 2005a, Van Ommeren et al., 2005b). The World Health Organization (WHO) along with other agencies has called for a refocusing of the mental health strategy in humanitarian emergencies. These agencies stress the need for a broader framework that not only incorporates PTSD, anxiety and depression but includes the non-pathological distress which is found in the large proportion of the population (IASC, 2007, Mollica et al., 2004, Miller and Rasmussen, 2010, van Ommeren et al., 2005a, Van Ommeren et al., 2005b, Silove and Bryant, 2006, de Jong et al., 2003).

The IASC developed the framework along with their partner organisations based on the principle that was flexible enough to adapt according to situation and amenable to population demands. This framework is structured in a layered system of complementary support that aims to meet the needs of all for whom it is prepared. This can better be illustrated in a pyramid (see Figure 6.1) where all the layers are important and should be implemented at the same time.

Basic services and security: These are essential for the wellbeing of all the people and should be protected through security and provision of basic services like food, health and shelter. According to the mental health and psychosocial support these services should be provided in a way to preserve self-respect and dignity along with the documentation of its impact on the mental health and psychosocial wellbeing of the people. Therefore these should be delivered through responsible actors who cater for these sensitivities.

Figure 6.1: Intervention pyramid for mental health and psychosocial support in emergencies, as portrayed in the IASC Guidelines.



Community and family support: The second layer from the bottom represents the support and response for a smaller number of people who can maintain their mental and psychosocial well-being if they have community and family support. As in most emergencies, family and community networks are significantly disrupted and people will benefit from accessing greater

community and family support. Some useful ways of doing these are: tracing of and reunification with missing family members; awareness of coping methods; education; assistance with mourning and communal healing ceremonies; livelihood activities; and the activation of social networks. Study 1 adds to the evidence demonstrating the importance of social support.

Focused, non-specialised supports: The next layer represents the group of people who also require more focused individual, family or group interventions by workers who have received training and supervision to maintain adequate mental and psychosocial well-being. This layer of support includes, for example basic mental health care by a primary health care doctor or basic emotional and practical support by community health workers.

Specialised services: The top layer of the pyramid represents the group of people who require additional support as they face significant difficulties in basic daily functioning despite the support identified in the bottom three layers. This assistance is mainly provided by trained mental health specialists (psychiatric nurse, psychiatrist, psychologist etc.) and is unlikely to exist in primary/general health service settings unless personnel have received specific training. Therefore, a referral system will be necessary to specialised services.

A recent systematic review and meta-analysis (Tol et al., 2011) was conducted in line with the IASC Mental Health and Psychosocial Support (MHPSS) pyramid (IASC, 2007). All the identified studies were categorized according to the intervention pyramid in Figure 6.1 of the IASC guidelines (IASC, 2007). No studies focussed on the lowest level of the IASC pyramid. Majority of the studies focused on the top two layers of the pyramid and of the total of 32 studies reviewed, 9 (28.1%) focused on specialized services, 20 (62.5%) focused on non-specialized support, while the remaining three (9.4%) focused on strengthening community and family

support. Six studies were with children and adolescents and seven focused on adults. Significant effect was shown in the adult studies for a variety of psychological interventions. To conclude, the above review shows that more research has been done as we go towards the top of the pyramid, with specialized interventions and there is scarcity of evidence as we go down the pyramid (Tol et al., 2011).

The intervention I evaluate in Study 2 falls into the second (focused non-specialized support) and third (community and family support) layer of the MHPSS pyramid. Therefore, I reviewed in detail studies that focused on these two layers from Tol et al's (2011) systematic review. Three studies in adults focussed on the second layer and evaluated counselling. Two studies (Tol et al., 2009, Bass et al., 2012) showed improvement in functioning and coping but no effect on anxiety, depression and PTSD symptoms. The third study on women in Afghanistan (Frank Neuner., personal communication) identified improved coping and reduction in anxiety, depression, and psychosocial stressors from the counselling. A further two studies (Yeomans et al., 2010, Staub et al., 2005) observed improvement in PTSD symptoms through interventions that focused on trauma healing and reconciliation. Tol and colleagues (2011) noted the lack of evidence for MHPSS in humanitarian emergencies. Thus, they propose that further research is needed, especially in terms of moving beyond PTSD and internalising symptoms. In addition, there is a need to minimize the gap between research and practice, especially with reference to the most frequently implemented psychosocial interventions i.e. counselling, child friendly spaces and community support (Tol et al., 2011). Finally, each of these communities (communities with humanitarian emergencies) deserve programmes of psychiatric interventions based on sound evidence of feasibility and effectiveness, and with proven local cultural sensitivity (Igreja et al., 2004). The provision of such interventions first requires improvements in research methods by

developing the means to capture mental disorders, wellbeing and their determinants in culturally sensitive ways. An increased validation of instruments in different cultural contexts and long term follow-up assessments is needed to establish whether early interventions have improved, and long lasting effects (Tol et al., 2011).

Previously, I have argued that, women, specifically pregnant women are at greater risk of social and/or psychological problems in diverse emergencies (IASC, 2007), and furthermore poor perinatal mental health has a negative impact on the mother as well as the child as explained and elaborated in Section 1.3.2. Services that address these issues are important, but there is a lack of evidence-based interventions that address common perinatal mental health disorders in emergency humanitarian settings, especially in LMICs. Therefore, the next section will review current evidence of interventions targeting common perinatal mental health disorders in LIMC generally.

6.3. Interventions for perinatal mental health in LMIC

Recently a systematic review (Rahman et al., 2013a) was carried out of controlled trials of interventions to improve mental health outcomes in women during pregnancy or after recent birth (up to 36 months). They found thirteen eligible studies conducted before May 2012 representing more than 20,000 participants. The main outcomes assessed across the studies was maternal depression which resulted in a pooling effect size of −0.38 (95% CI: –0.56 to −0.21; I^2 = 79.9%). Although, the target population (mother or child), definition of outcome, frequency of intervention sessions and training and supervision differed across studies, the interventions were beneficial to both mother and child irrespective of the target population. Furthermore, all the interventions in the review except the study in Mexico (Lara et al., 2010) were delivered by, non-specialist health and community workers who while supervised had not had specialist training in mental health care. This has important implications for areas where there are limited numbers of mental health professionals. The design, location, nature of the interventions and the main findings of the review (Rahman et al., 2013a) are summarised in Table 6.1 below.

Table 6.1: Location, design, nature of intervention and main findings of 13 trials of interventions for CPMDs in women in LMIC (reproduced with permission) (Rahman et al., 2013a)

Study	Location	Design	Nature of intervention	Main findings
Addressed maternal depression directly				
(Rahman et al., 2008)	Union Council clusters in two sub-districts: Gujar Khan and Kallar Syedan in rural Pakistan	Comparison between women living in 40 union councils that had been randomized independently to intervention (20) and control (20) groups.	Thinking Healthy Programme (THP), a manualized intervention incorporating cognitive and behavioural techniques of active listening and collaboration with family; non-threatening enquiry into the family's health beliefs, a challenging of wrong beliefs, and substitution of these with alternative information when required; and inter-session practice activities. It is designed to be integrated into existing maternal and child health education home visits. Intervention group received: one THP session per week for the last month of pregnancy, three sessions in the first postpartum month and one session per month for the subsequent nine months (a total of 16 sessions).	Maternal mood – after adjusting for covariates women in the intervention group: – were less likely to be depressed at 6 & 12 months postpartum. – were less disabled at 6 months – had better global functioning at 6 months – had better perceived social support at 6 months Infant health and development: – no difference between groups in infant stunting or malnutrition; – infants of intervention group mothers had fewer episodes of diarrhoea at 12 months and were more likely to be fully immunized Family health and functioning: – intervention group more likely to be using contraception at 12 months – both parents dedicated time to playing with the infant
(Rojas et al., 2007)	Primary care clinics in Santiago, Chile	Comparison between participants randomized to multi-component intervention or to regular primary health care	A multi-component intervention that included: – eight weekly structured psycho-educational groups to convey information about symptoms and treatments and to teach problem solving and behavioural activation strategies and cognitive techniques using examples illustrative of the postnatal period – structured cost-free pharmacotherapy protocol of fluoxetine (20–40 mg per day) or sertraline (50–100 mg per day) for women who did not respond to	Maternal mood*:* – EPDS scores improved in multi-component intervention at 3 months. – EPDS scores were at least 3 points lower at 6 months than at baseline in 73% of the intervention group and 57% of the usual care group.

			fluoxetine or were lactating. – Medical appointments at weeks two and four and thereafter monthly for 6 months to monitor clinical progress and treatment compliance.	
(Hughes, 2009)	Goa, India	Pregnant women identified through 138 *anganwadi* centres and randomly assigned to intervention or standard care arms	Home visits lasting 45 minutes made twice antenatally and three times postnatally (at 4, 7 and 10 weeks, for a total of 5 visits). Visits involved supportive, empathic listening and education intended to: – provide information within a relationship of trust – focus on gender determination to help women overcome the notion that infant sex is maternally determined – conduct client-centred postpartum discussions, including demonstrations of infant massage.	Maternal mood (with control for between-group differences in socio-demographic factors) – No difference between groups in EPDS score > 12 Infant development – No difference between groups in DQ < 85 – No differences in mean infant weight between intervention and control groups.
(Mao et al., 2012)	First Hospital of Hangzhou, Zhejiang, China	Comparison of depression rates at 6 weeks postpartum in pregnant women randomly assigned to an emotional self-management training programme or to standard antenatal care	Emotional Self-Management Group Training (ESMGT) programme comprising 4 weekly group sessions and one individual counselling session. Each group session lasted for 90 minutes. Group session topics included self-management, effective problem solving, positive communication, relaxation, cognitive restructuring and improving self-confidence. On completion of group training, one individual counselling session was arranged to address personal problems. Control group received standard antenatal education at the study venue. This consisted of four 90-minute sessions conducted by obstetrics nurses. The content of the programme focused on preparation for childbirth.	Maternal mood: – at 6 weeks postpartum, intervention group had significantly lower mean PHQ-9 ($P < 0.01$) and EPDS scores ($P = 0.04$) than control group; – fewer in intervention group with SCID-I diagnosis of major depression.
Addressed adjustment to motherhood through programmes integrated into existing systems				
(Gao et al., 2010, Gao et al., 2012)	A regional teaching hospital in southern mainland China	Comparison between groups randomly assigned to intervention and control arms	Intervention embedded in the antenatal childbirth psycho-education programme. In addition to routine antenatal care (two 90-minute classes), the intervention group received two "interpersonal psychotherapy-oriented" classes lasting two hours each and a postpartum follow-up telephone call to reinforce principles. Classes included information-giving, clarification, role playing and brainstorming about new roles and	Maternal mood: – Intervention group significantly lower EPDS and SWIRS mean scores than control group at 6 weeks postpartum; – Difference in proportion with EPDS scores > 12 in intervention (9.38%) and control (17.35%) not significant ($P = 0.1$) at 6

			strategies to manage relationships with husbands and mothers-in-law, supplemented by written material.	weeks postpartum; – Intervention group significantly lower mean scores on EPDS and GHQ-12 at 3 months postpartum.
(Ho et al., 2009)	Taipei and Taiwan, China	Comparison between primiparous women assigned alternatively on day one postpartum to intervention or control group. Women in shared wards were assigned as a group	The education programme included a printed three-page booklet containing the incidence, symptoms, causes and management information about the postpartum depression. Women in the experimental group received the booklet and discussed it with primary care nurses on the second day after delivery.	Maternal mood: – No differences between groups in socio-demographic factors or "postnatal experiences"; – No difference between groups in EPDS score > 9 at 6 weeks or at 3 months postpartum; – Both groups experienced improvement in mood over time.
(Lara et al., 2010)	Mexico City, Mexico	Comparison of depression rates at 3 and 6 weeks and at 4 to 6 months postpartum in women randomly assigned to intervention and to regular antenatal care	Eight weekly sessions lasting 2 hours each and with no more than 15 participants per group. Intervention programme that included: (i) information about the "normal" perinatal period and risk factors for postpartum depression; (ii) a psychological component, aimed at reducing depression through various strategies (e.g. increasing positive thinking and pleasant activities, improving self-esteem and self-care), and (iii) a group component designed to create an atmosphere of trust and support. Control participants received the usual care provided by their institutions, and both groups received copies of a self-help book on depression especially designed for women with limited reading abilities. The book included a directory of community mental health services in the area.	Maternal mood: – Cumulative incidence of major depression over three time periods was 10.7% in intervention and 25% in control group ($P < 0.05$); – Significant reduction of BDI-II score in both groups, but no significant treatment effect; – Most participants who completed the intervention reported that it had a moderate to large influence on their well-being, mood, ability to cope with problems, role as mothers and relationship with their infants.
Indirectly addressed maternal mental health through individual or group parenting education				
(Baker-Henningham et al., 2005)	Nutrition clinics in Jamaica	Comparison between mother–infant pairs recruited from government clinics. Clinics were stratified	Weekly home visits lasting half an hour to: – Improve mothers' knowledge of child-rearing practices and parenting self-esteem – Use homemade toys, books and household items to demonstrate age-appropriate activities for the child by	Maternal mood: – Decline in depressive symptoms seen in intervention group but not in control group – Mothers receiving 40–50 home visits had greatest decline in depressive

		by size of client population and randomly assigned to intervention (11) and control (7) arms	involving mother and child in play – Provide experiences of mastery and success for mother and child; – Emphasize the importance of praise, responsiveness, nutrition, appropriate discipline and play and learning; – Friendly, empathic approach, but no specific focus on problem solving or on addressing maternal concerns – Standard health and nutrition care offered at clinics.	symptoms – Mothers receiving 25–39 home visits had lesser decline in depressive symptoms – Mothers receiving 0–24 home visits did not differ from control group Child development: – Final maternal depression and final DQ correlated in boys ($P < 0.05$) but not in girls.
(Rahman et al., 2009)	Kallar Syedan, a Union Council district of 60 villages in a rural area south-east of Rawalpindi, Pakistan	48 of 60 villages accessible by road. Comparison between mothers and infants living in villages randomly assigned to the intervention (24) or to usual care (24)	Learning Through Play (LTP) programme, developed for use by lay home visitors in Canada and adapted for use in low-income countries. It includes images demonstrating infant development, parent–child play activities and skilled parenting practices conducive to normal cognitive, social and emotional development in the child. The images are accompanied by simple text for groups with low literacy and are presented together as a calendar demonstrating developmental progress. A training manual for providers with additional information about child development is used as a supplement, together with group sessions or one-to-one sessions with parents. Intervention group received a half-day session on LTP in late pregnancy, with a calendar for home use. Mothers were subsequently visited for 15–20 minutes once a fortnight to discuss their infants' development, using the calendar as a reference point, until infants turned 12 weeks old. Participants were encouraged to meet informally in groups to apply the techniques in the calendar and provide mutual support to each other.	Maternal knowledge about infant development – Intervention group had significantly higher increase in questionnaire scores than control group at 3 months postpartum Maternal emotional distress – No difference in SRQ-20 scores between intervention and control groups.
(Cooper et al., 2009)	Khayelitsha, South Africa	Comparison between women, identified systematically during pregnancy via home visits and randomly assigned to	Same adaptation of the Health Visitor Intervention Programme incorporating principles of WHO's Improving the Psychosocial Development of Children programme, as used in Cooper et al. (2002) to: – Enhance maternal sensitivity and responsiveness towards infants and mother–infant interaction – Use items from the NBAS to sensitize	Mother-infant interaction – Intervention group significantly more sensitive and less intrusive in interactions with infants at both 6 and 12 months (all $P < 0.05$); Infant attachment: – More securely attached infants in intervention group

		intervention or standard care using minimization procedures to control for antenatal depression and unintended pregnancy	mothers to their infants' abilities and needs – Hour-long home visits to mothers made twice antenatally, weekly for the first 8 weeks after birth, fortnightly for the next 2 months and monthly for another 2 months (a total of 16 visits, finishing at infant age of 5 months) – Standard health care, which included a fortnightly home visit from a community health worker who assessed maternal and infant health and encouraged mothers to attend the local clinic for infant immunization and weight checks.	than in control group (OR: 1.70; $P < 0.029$); – Higher rates of anxious–avoidant attachment in control than intervention group. Maternal depression: – Lower prevalence of depression in intervention than control group at 6 and 12 months postpartum, but differences not significant; – EPDS scores lower in intervention than control group at both assessment points, but difference only significant ($P = 0.04$) at 6 months; – Depression ratings unrelated to maternal sensitivity or intrusiveness.
(Cooper et al., 2002)	Khayelitsha, a periurban settlement outside Cape Town, South Africa	Pilot investigation to inform a controlled trial, with comparison between two non-systematically recruited groups consisting of mother–infant pairs	Adaptation of the Health Visitor Intervention Programme by incorporating principles of WHO's Improving the Psychosocial Development of Children programme to: – Enhance emotional support for the mother – Promote sensitivity in interacting with infant – Use items from the NBAS to sensitize mother to infant's abilities – Provide specific practical advice about management of infant sleep, crying and feeding. Home visits to mothers were made twice antenatally, twice weekly during first month after birth; weekly for next 8 weeks; fortnightly for next month and monthly for next 2 months (a total of 20 visits).	Maternal mood: – Major depression 19% (6/32) in intervention group; 28% (9/32) in comparison group; Mother-infant interaction: – After controlling for age and education, mothers in the intervention group were more sensitive in play ($P = 0.02$) and tended to show more positive affect during feeding ($P = 0.08$). Infant growth – Infants in the intervention group were heavier ($P = 0.01$) and taller ($P = 0.02$), but no differences in head circumference or weight-to-height ratio were noted.
(Morris et al., 2012)	Camps for internally displaced people in Kitgum district, Northern Uganda	Comparison between women attending three Kitgum emergency feeding centres (intervention group) and	The intervention, derived from the LTP Play programme, was in addition to intensive feeding and included: – Culturally appropriate psycho-education about early childhood development – Given in mother–infant group sessions, which also provided opportunities to share experiences and discuss the new information	Maternal knowledge about child development – No effect of the intervention and the measure found to have poor internal consistency. Mother–infant relationship – Mothers in intervention group more emotionally responsive and used more

		women attending two other centres (control group)	– Supplemented by home visits – There were six mother–infant groups at weekly intervals, with an unspecified number of home visits.	play materials than those in the control group. Maternal mood – No differences between groups when interview location controlled.
Indirectly addressed maternal mental health by educating mothers about pregnancy, birth, neonatal health and health-care seeking				
(Tripathy et al., 2010)	Saraikela Kharswan, West Singhbhum and Keonjjhar districts in Jharkand and Orissa states, India	Comparison between women living in control and intervention communities from July 2005 to July 2008. Clusters stratified by whether or not women's groups were available, then allocated to intervention and control groups by a transparent number-drawing process on site	Monthly intervention consisting of facilitated women's group meetings in intervention clusters. The groups involved a participatory action cycle with a focus on maternal and neonatal health: clean births and care seeking. Contextually appropriate case studies used to identify and prioritize perinatal health problems, select strategies to address them (including prevention, home-care support and consultations), implement the strategies and assess results. Maternal depression not a direct focus of the intervention but potentially improved by social support of the group and acquisition of problem-solving skills.	Neonatal mortality ratio – 55.6, 37.1 and 36.3 per 1000 births in intervention clusters vs 53.4, 59.6 and 64.3 in control clusters in the 3 years of the study. Overall, 32% lower in intervention than in control clusters; 45% lower in years 2 and 3 Maternal mood – No significant differences between groups overall, but moderate depression 5% in intervention and 10% in control group in year 3 of the study Infant care – Clean birth care practices and rates of exclusive breastfeeding at 6 weeks higher in intervention than control groups.

CPMDs: Common Perinatal Mental Disorders, LAMI: Low and middle income, EPDS: Edinburgh Postnatal Depression Scale, THP: Thinking Healthy programme, GHQ: General Health Questionnaire, SRQ-20: 20-item Self-Reporting Questionnaire, LTP: Learning Through Play, PHQ-9: nine-item Patient Health Questionnaire, ESMGT: Emotional Self-Management Group Training, BDI-II: Beck Depression Inventory II, SWIRS: Satisfaction with Interpersonal Relationships Scale, DQ: Developmental Quotient, SCID-I: Structured Clinical Interview for DSM-IV Diagnoses.

It is evident from this review that most of the interventions are focused interventions delivered by non-specialists, whereas the literature from research in the humanitarian context identifies a gap in interventions that harness community and family support. Such interventions would involve raising awareness of psychological problems in the family and community, which would allow a supportive environment to be created around the distressed person. Such interventions are generally termed psycho-educational interventions.

Psycho-education is a type of intervention where education is provided to participants with psychological or other physical issues (Donker et al., 2009). This provision of education material can be of two types depending on the delivery of the material. When only materials such as single leaflets, emails or information websites are delivered, this is called 'passive intervention'. An intervention which is guided by a therapist is called an 'active intervention'. In the systematic review discussed in the previous section (Rahman et al., 2013a) interventions that had an active psycho-educational component in addition to targeted therapy were those conducted in Santiago Chile (Rojas et al., 2007), Goa India (Hughes, 2009) and China (Ho et al., 2009).

An example of a passive psycho-educational intervention was delivered to women at a general practice in the UK. The research was conducted with British Asians recruited from a general practice in London (Jacob et al., 2002). Women enrolled into the trial were of Indian origin, 18 years or above and fluent in Hindi or English. After initial screening through a validated version of the General Health Questionnaire 12 (GHQ-12), women scoring 3 or above (n= 70) were recruited. 35 women were randomly allocated to both the intervention arm (receiving the patient education leaflet) and the control arm (did not receive any leaflet).

The content of the education leaflet were developed from issues raised around common mental disorders in another study conducted with British Asians (Bhugra et al., 1997). The material provided information on the causes, prevalence, severity and alternative treatment options for common mental disorders. The psychiatrist conducting the assessment of the outcomes was blind to the allocation status of the participant. 34 participants in the intervention arm and 32 participants in the control arm completed the follow up assessments at 2 months' after the intervention. 42.9% (15/35) participants recovered (GHQ score of 2 or less) in the intervention arm compared to 20% (7/35) in the control arm (OR=2.99, 95% CI: 1.03 to 8.7; P<0.05). However, recovery was more in those with entry level GHQ score of 3-5 as compared to 6 or more.

6.4. Challenges in provision of psychosocial care in the Pakistani context

In Pakistan, awareness of mental health issues is poor and is coupled with stigma (Rahman et al., 1998). Also, people are likely to turn to traditional medicine (faith healers) for what they perceive to be mental health problems. In a study in Pakistan, it was found that more than 60% of the people attending five traditional faith healers were diagnosed with mental disorder when assessed using Psychiatric Assessment Schedule (PAS) and DSM-IIIR (Saeed et al., 2000). The majority of the women in this study were three times more likely to attend traditional faith healers than were men. Saeed and colleagues argue that women with mental health problems are more likely to seek help from a traditional faith healers compared to a similar group of men. Furthermore, the majority of people who visit traditional faith healers were found to be uneducated or have only minimal primary education. Most of these people believe in evil eye,

possession, magic to be the cause of mental disorders, and hence they approach traditional faith healers for treatment (Gadit, 1996, Gadit, 2003).

A further factor relevant to provision of psychosocial support to women in Pakistan is that the country, and especially the Northern Areas including Swat, is strongly patriarchal, leading to a male dominated society (Mohmand and Gazdar, 2007). Women are generally in a state of subordination with economic, political and social disempowerment; are unlikely to inherit property or land; and have restricted mobility due to the culture of *Purdah (veil)*. Due to *Purdah*, any intervention will need to be delivered inside the woman's house, and with the whole family to ensure cultural acceptability and maximum support. A further challenge to the success of the intervention was that the radio broadcasts during the militancy in Swat had engendered considerable hostility towards working women, especially the LHWs, forcing many to resign (Ud Din et al., 2012). Any intervention that focussed on women's psychological well-being through LHWs would therefore have to be very sensitively delivered.

Finally, other socio-cultural barriers identified in the study area include very low literacy levels in women.

Therefore, any intervention will have to address these obstacles to be acceptable to the community as well as the larger health system. Furthermore, scarcity of the trained mental health professionals in the country makes it a necessity to train non-mental health professionals in the existing health system. The use of non-mental health professionals has the potential to be cost effective and, therefore, more acceptable to the policy makers. There is evidence of the utility of training such non-mental health professionals to deliver mental health interventions in resource constrained countries (Rahman et al., 2013a).

6.5. Development of an intervention to increase awareness and improve family support for psychologically distressed women in Swat

The intervention evaluated in Study 2 was developed by a team of experts, including the team that developed the Thinking Healthy Programme, in Pakistan (described in Section 6.3), and the author and his team in Swat. In-depth interviews and focus group discussions were carried out with families and LHWs respectively to obtain an in-depth understanding of the issues that involved in designing (e.g. high illiteracy therefore use of sketches/images) and delivering (e.g. women mostly remain inside their houses therefore the session should be delivered inside the house) a psycho-educational intervention in the local context of Swat. The development of the intervention was not a part of this thesis, and is therefore discussed briefly below to provide context to Study 2.

6.5.1. Content of intervention

The training manual and counselling cards are attached as Appendix 5.

The intervention, consisting of two interactive sessions with the family, was called "Happy Mother, Healthy Child in Ten Steps", avoiding any reference to mental health or psychological problems. This was done to counter the stigma attached to these terms, and increase its acceptability by emphasising the 'child' aspects of the intervention. A brief intervention (two face-to-face sessions) was preferred because, a) this would be more attractive to policy makers for scalability and sustainability, and b) would not put extra burden on the Lady Health Workers. Furthermore as this was an awareness raising intervention and earlier formative work indicated that two sessions will be enough for the target population. The intervention is a fully manualized

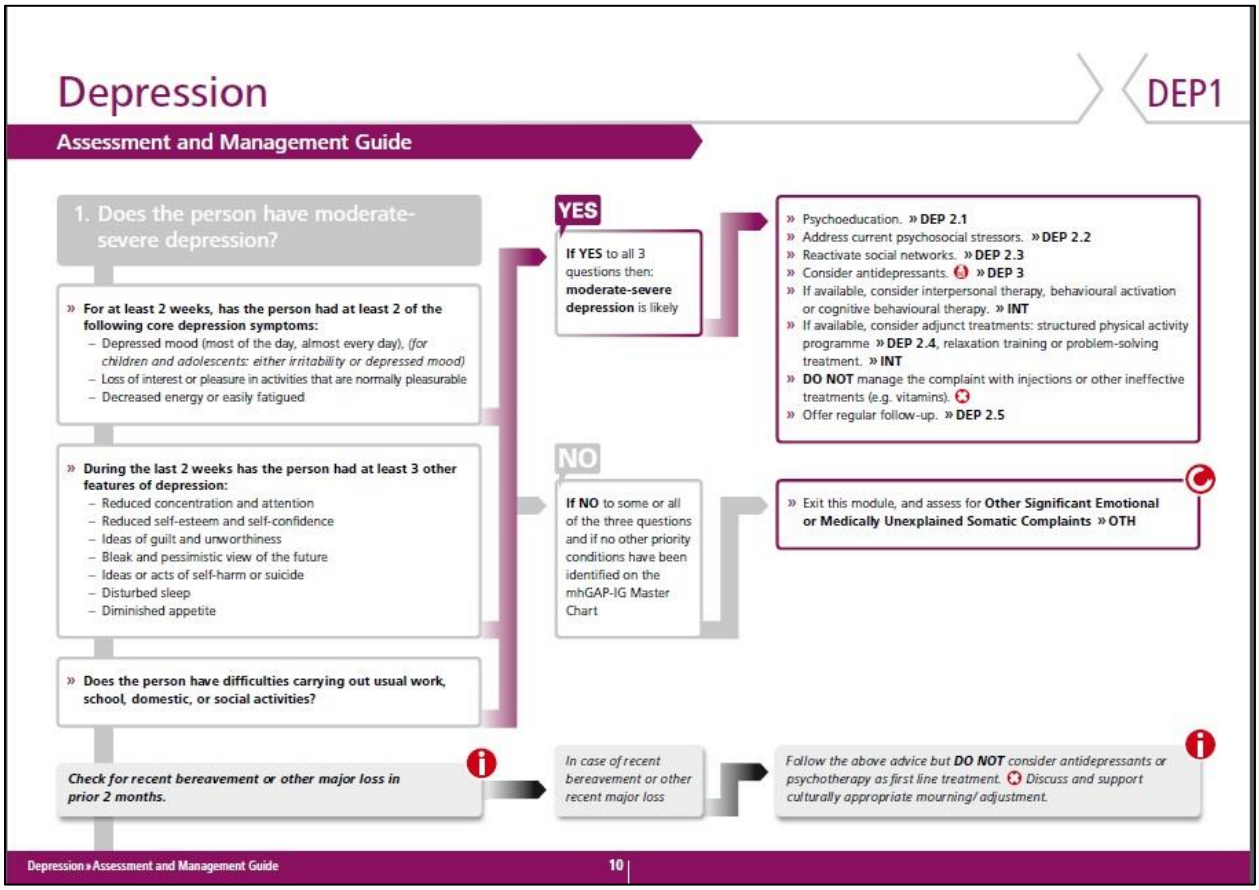
psycho-educational intervention. The sessions are delivered to psychologically distress pregnant women and their families (including husbands) in their homes by the trained LHWs serving their area. Along with the manual, counselling cards were developed as job-aids for LHWs while delivering a session. The counselling cards include bullet points of the important messages pertaining to each of the ten steps and are accompanied by illustrations. The messages are clearly formatted to be spoken and easily remembered by the LHWs in the session. In addition, illustrations with these messages were developed in a leaflet which was given to the family to keep. The intervention focuses attention on maternal psychosocial well-being associating it with the optimal growth and development of the unborn child. Every step has a maternal well-being message for the whole family. The intervention uses a simple pictorial approach of paired illustrations with one showing unwanted behaviours and the other positive actions to achieve the desired outcome of support for the mother. The session content was designed to allow a positive interaction with the family. The rationale behind the ten steps was to remind the family about important areas which need their attention to provide support to women throughout pregnancy and to one year after the birth of the child. As the majority of the families in our target areas were illiterate, illustrations were developed to enable the message to be clearly understood in case the participants were unable to read. This was achieved through frequent consultation with the target population and revisiting the sketches again and again for their full meaning to become clear.

The main areas of the intervention are: empathetic listening; ensuring the pregnant woman regarding the circle of support that is available; domestic peace; balanced diet and rest; engagement of the pregnant woman in pleasurable activities; routine check-up during pregnancy;

consulting doctor in case the distress is not relieved; and maintenance of household peace and harmony throughout.

The intervention was developed in line with the guidelines of the WHO's Mental Health Gap Action Programme (mhGAP) for mental, neurological and substance use disorders in non-specialized health settings (WHO, 2010). Our intervention covers the first 3 management steps for common mental disorders like depression outlined in the mhGAP intervention guide. These are psycho-education, addressing psychosocial stressors and reactivating social networks of the distressed pregnant woman. These are shown in the Figure 6.2 from the mhGAP intervention guide.

Figure 6.2: Depression assessment and management guide



Note: Sourced from the mhGAP intervention guide by WHO.

6.5.2. LHWs as the delivering agent of the psycho-educational intervention

The Lady Health Worker Program was launched in 1994 as the "National Program for Family Planning and Primary Health Care (FP&PHC)" (Hafeez et al., 2011, Oxford, 2009). The overall goal of the program (popularly known as "Lady Health Workers Program") was to contribute to poverty reduction by improving the health of the people of Pakistan. The main objective was to increase utilization of services at the community level for women and children in poor and marginalized areas. To achieve these objectives the program recruited and trained women (LHWs) with in the communities to deliver these services. These LHWs are recruited through

predefined selection criteria; with age between 18-45 years, at least 8 years of education, preferably married and lastly being acceptable and local to the community. Recruitment is followed by 15 months of basic training at the First Level Care Facility i.e. Basic Health Unit (BHU) and Rural Health Centre (RHC) or Tehsil Head Quarter (THQ) hospital, by staff working in these facilities in two phases using program training manuals and curriculum. During the first phase; every week 5 days training is given for three months while in the second phase the training lasts for 12 months with three weeks of field work followed by one week of classroom training each month. This basic training of the LHWs is followed up by a one day "Continuing Education Session" each month and 15 days "Refresher Training" on various topics every year.

One LHW is responsible for around 1000 people or 150 homes in her catchment area and visits 5-7 homes daily. The main areas that are covered in these visits range from: health education in terms of antenatal care and referral; immunization services; community mobilization; provision of family planning; and basic curative care. In this regard, the house of each LHW has been declared a "Health House" for her catchment area where people can access in emergencies for guidance or basic treatment. Each LHW is provided with the basic items for the "Health House", including essential drugs for minor ailments and contraceptives (all given free of cost). The LHWs have an official duty to record all pregnancies in their catchment area. They also take medical histories of all the family members and record any new conditions as they arise. This allows the LHWs to keep track of individuals and their need of services. In addition, each LHW provides a monthly report to their immediate supervision tier i.e. Lady Health Supervisor (LHS). These supervisory cadres from the community to the national levels are LHS at a ratio of 1:20-25 LHWs, Field Program Officers and the management at districts, provincial and federal level.

There are now close to 90,000 LHWs throughout the country providing services in all districts of the country.

LHWs training on the psycho-educational intervention

The training of LHWs was conducted in two batches in their respective health facilities. Before the training all the LHWs were provided with the training manual for "Happy Mother Healthy Child, in Ten Steps" and were asked to read it before coming to the training session. The training comprised of a half-day session. Training consisted of a lecture about psychological distress, discussions and role plays. At the start of each session an ideal role play was conducted by the training team as an exemplar. This was then followed by role plays by the LHWs based on experiences they may have had during their routine visits.

As a part of the training the LHWs were given counselling cards including pictorial sketches of all the ten steps within the intervention. The sketches were important especially in the case of women with low levels of literacy. Interpersonal communication skills were an important aspect of the training in order to enable the LHWs to engage with the family.

The aim of this study was to evaluate the intervention in Swat, through a pilot randomised trial. This is discussed in detail in the following chapters.

Chapter 7: Aims and objectives - Study 2

7.1. Aim of the project

Study 1 informed us that over a third of perinatal women exposed to armed conflict, and now living in a post-conflict situation, are psychologically distressed. Traumatic events as well as stresses of everyday life contribute to these high rates. Family support appears to have a strong protective effect. It would therefore be important to explore the feasibility of interventions that lead to recognition of psychological distress in such women, and lead to greater support by the family, and appropriate help-seeking if necessary. In the preceding section, the development of such an intervention is described.

The aim of this study was to evaluate the feasibility of the psychoeducational intervention to improve awareness of psychological distress in family members of pregnant women using a pilot randomised controlled trial.

7.1.1. Objectives

The main objectives of Study 2 were to:

- To evaluate if there was an increase in help seeking for psychological distress in pregnant women whose families received a two session psycho-educational intervention by Lady Health Workers (LHWs) compared to a control group that did not receive the intervention.

- To evaluate if there were improvement in perceived levels of social support in women whose families received a two session psycho-educational intervention by Lady Health Workers (LHWs) compared to a control group that did not receive the intervention.

- To evaluate if there were improvements in the rates and symptoms of psychological distress in pregnant women whose families received a two session psycho-educational intervention by Lady Health Workers (LHWs) compared to a control group that did not receive the intervention.

Secondary objectives of the Study Two were to

- Assess acceptability of the intervention in the target community.

- Assess feasibility of the intervention delivery in the delivering agents i.e. Lady Health Workers.

- Assess feasibility of procedures and tools for a future definitive trial.

7.1.2. Hypotheses

Study 2 had the following hypotheses:

- Hypothesis 1: Women with psychological distress who receive the psycho-educational intervention (intervention group) will show an increase in help-seeking for psychological distress at two months follow-up compared to a control group that does not receive the intervention.

- Hypothesis 2: Women with psychological distress who receive the psycho-educational intervention (intervention group) will have better perceived social support at two months follow-up compared to a control group that does not receive the intervention.

- Hypothesis 3: Women with psychological distress who receive the psycho-educational intervention (intervention group) will have lesser psychological distress at two months follow-up compared to a control group that does not receive the intervention.

Chapter 8: Materials and methods - Study 2

This chapter describes the research designs available to evaluate the feasibility of a psycho-educational intervention, and the rationale for the design chosen. It describes the study population and the process of attaining the sample for the study. This is followed by a description of the baseline and outcome instruments. Lastly, the chapter discusses different kinds of biases affecting randomised trials and measures taken to address them in this study.

8.1. Experimental study designs for evaluation of an intervention

There are two basic approaches to evaluate an intervention - randomized and non-randomised. Both of these kinds have advantages and disadvantages, which will be discussed in the context of the study, and in light of current theoretical perspectives (Torgerson, 2001, Kirkwood et al., 1997, Elwood, 2007).

8.1.1. Non-randomized trials

The basic difference, as is apparent from the name, is the absence of randomisation in these trials. They are further subdivided into pre/post intervention comparison, intervention vs. control comparison and adopters vs. non-adopters comparisons. Each subtype is explained below.

The pre/post-intervention comparison

In this type of comparison, the outcome of interest is measured before the introduction of intervention to the target population (pre-intervention) and is then compared to the post-intervention outcome (post-intervention). Comparison of outcomes and risk factors between the pre/post measurements strengthen the plausibility of statements regarding the impact of intervention, as long as the outcome, or risk factors or their rates, decrease after the intervention.

As some of the changes in the outcome or risk factors occur over time even in the absence of an intervention, there is a lack of compelling evidence to attribute the change to the intervention. The absence of a control group is a major disadvantage of this kind of design. This makes it difficult to conclude that the observed difference/change is due to the effect of the intervention and not due to an independent trend that would occur without the intervention.

The intervention *vs.* control comparison

This type of design has an arm receiving the intervention, with the other arm (control) not receiving the intervention as the comparison. Unlike traditional randomised control trials, this type of design select participants randomly and therefore there is a risk of selection bias during recruitment of participants for the trial. This can lead to differences in risk factors as well as outcome measures at the baseline in the two arms, and makes it more difficult to interpret that the differences observed are due to the intervention. Therefore, findings of such trials should be interpreted cautiously.

Adopters *vs.* non-adopters comparison

This type of design compares individuals who adopt the intervention to those who do not. Such a comparison is essentially a risk factor study rather than an impact study as it captures the benefits to an individual compared to the larger public health impact. In this type of comparison, controlling for the potential confounding factors is problematic as the adopters and non-adopters may be different in many important characteristics.

To conclude, the advantages of non-randomized trials are that they are simpler to carry out logistically, can be done on fewer subjects and in a shorter duration, and hence require fewer resources. However, the disadvantages i.e. selection bias and uncontrolled confounding factors, are very important weaknesses which limit the interpretation of results.

8.1.2. Randomized trials

The basic attribute of these kinds of trials is the presence of randomisation. Randomised trials are essentially of two types - individual randomised controlled trial and cluster randomized controlled trial. Both of these types are described below.

Individual randomized controlled trial

This type of a trial compares individuals receiving an intervention with individuals in the control group. The random allocation of research participants to these groups significantly reduces the likelihood of confounding and selection bias. At the end, the difference/change observed can be attributed to the intervention with greater confidence.

However, individual randomized controlled trials are not ideal in community settings as the risk of contamination i.e. spreading of information from intervention arm to control arm, either through participants or delivering agents, or through other means leads to adoption of the behaviours desired in the intervention arm by control arm participants. This leads to reduction in the estimate of intervention effect size.

Cluster randomized controlled trial

Cluster randomized controlled trials compare the intervention being given to a group (villages, union councils, schools or hospitals) with similar groups acting as controls. The analysis is done on the whole group rather than at the individual level. As the analysis is done on groups and members of the cluster cannot be treated as independent, the effect of this on the outcomes leads to a need for increase in the sample size. In other words, due to the correlation between the cluster members, the overall power of the study decreases on a given sample size and hence requires a larger sample for a more powerful study. This type of study design is therefore expensive due to larger sample size, length and complexity. However, this type of study is able to address the issue of contamination because of the geographical and administrative differences between the clusters.

To conclude, randomized controlled trials are superior to non-randomized trials in establishing the relationship or causal link between an intervention and outcome, and at the same time, ruling out the effects of confounding and selection bias. However, the main disadvantages of randomized trials are the levels of management, time and resources that are needed. In addition, such trials require a high degree of commitment and cooperation from researchers and participants alike.

As the current study was a pilot randomized controlled trial, the next section will discuss the differences between pilot and feasibility studies, as well as their advantages and limitations.

8.2. Pilot and feasibility studies

This section will discuss key characteristics of pilot and feasibility studies. In addition, the type of analysis required for this kind of study designs, and reasons for caution in the interpretations of the results, are discussed.

In a recent review to distinguish between pilot and feasibility studies (Arain et al., 2010), it was reported that the National Institute for Health Research Trials and Studies Coordinating Centre (NETSCC) definition of these two terms was reflected by the investigators in most of the studies (NETSCC, 2014). Pilot studies were seen as smaller versions of the main study and are conducted to test whether the components of the main study all work together. A pilot study is based on the processes of the main study and recruitment, randomization, treatment, and follow-up assessments are conducted exactly as they would in the main study. In addition, pilots resembles the main study in relation to assessing the main outcome, especially the determination of the initial data for the primary outcome, and assist in the estimation of the sample size for the larger trial (Ross-McGill et al., 2000, Stevinson and Ernst, 2000), and as a dummy run to ensure all procedures are put in place e.g. inclusion/exclusion criteria, training of field staff and assessment of intervention (Ross-McGill et al., 2000, Burrows et al., 2001), piloting of data collection forms and questionnaires (Carfoot et al., 2002), procedures for randomization (Ross-McGill et al., 2000, Burrows et al., 2001), recruitment and consent rate (Burrows et al., 2001, Ross-McGill et al., 2000, Carfoot et al., 2002), acceptability of the intervention and finally selection of most appropriate outcome measure (Bauhofer et al., 2001). Depending on the data of the pilot study, as in some cases this pilot phase data may contribute in the final analysis of the main study; this can be referred to as an internal pilot while in other cases this data is analysed

separately and is referred to as external pilot (Lancaster et al., 2004). Arain and colleagues found that studies labelled as pilot are done with more rigorous methodology i.e. having proper sample size calculations, randomization and a control group (Arain et al., 2010). Inclusion of the later (control group) lead to more realistic examination of the procedures, i.e. recruitment, randomization, implementation of interventions, blinded assessments, and retention. These aspects could be quite different if an open pilot study with no control group is conducted. Therefore through the addition of a control group, the pilot study can better address its objectives (Leon et al., 2011).

Regarding analysis of pilot studies, some authors suggests that this should only be descriptive (Grimes and Schulz, 2002, Lancaster et al., 2004, Bauhofer et al., 2001, Carfoot et al., 2002), as hypothesis testing requires a powered sample size which is not the case mostly in pilot studies. In addition to the smaller proposed sample size there is limited knowledge regarding the intervention in the target population (Leon et al., 2011). Furthermore such type of statistics requires a control arm which is also not always present in these kinds of studies (Arain et al., 2010). As an external pilot study the data is analysed separately and hence the study is treated as a stand-alone study, researchers have analysed them for hypothesis testing (Ross-McGill et al., 2000, Stevinson and Ernst, 2000). In the review by Arain and colleagues (Arain et al., 2010), 81% of the pilot studies had done hypothesis testing and performed inferential statistics to report significant results. These steps should be taken with extra care and no undue significance should be placed on the results, as no proper power calculations have been carried out. Furthermore with the small sample size, there is more likelihood that both the arms will have imbalance in variables, which would need adjustment in the analysis. In addition the confidence interval is likely to be imprecise even when the results are significant (Lancaster et al., 2004).

Feasibility studies are conducted to see if the main study can be done or not (Arain et al., 2010). Such studies are also conducted to estimate the parameters needed for the main study, i.e. the standard deviation of the outcome variable, willingness of the participants to be randomized, recruitment procedures, eligible participants, characteristics of the proposed outcome measure and in some cases designing and selection of suitable outcome measure, follow up rates, response rates to questionnaires, compliance rates, intra cluster correlation coefficients (ICCs) in cluster trials and time needed to collect and analyse data. Feasibility studies for randomized controlled trial may not necessary have randomization or estimation of neither the main outcome nor the usual power calculation for sample size. Instead the sample should be adequate to correctly estimate the parameters needed for the larger main study (Arain et al., 2010). Feasibility studies are flexible in their methodology. In a study on adolescent sexual health in rural Zimbabwe, both formative and process evaluation was incorporated to ensure that the intervention is designed and developed in the most effective way (Power et al., 2004). This led to substantial changes in both the content and delivery of the proposed intervention. To conclude feasibility studies are conducted prior to the main study with flexible quantitative and qualitative methodologies to see whether the research can be conducted as proposed and try to find suitable alternatives.

Based on the above discussion and differentiation between pilot and feasibility studies, the next section reports the choice of the current study design and the rationale behind the selection of a pilot individually randomized controlled trial.

8.3. Choice of study design and study methods

The ideal study design for the current study is a cluster randomised trial with villages or union councils as the cluster units for randomization. This is based on the utility of such trials to test interventions in a community setting, and so avoid contamination of intervention content and materials (Keogh-Brown et al., 2007). However these kinds of trials are difficult to execute, and are much more complex than the individually randomized controlled trials and therefore warrant a pilot study to explore problems and strategies to overcome them (Eldridge et al., 2004). Similarly, the new Medical Research Council guidelines for the evaluation of complex interventions, especially in 'hard-to-reach' populations, recommend pilot studies prior to large scale trials (Craig et al., 2008). These pilot studies will overcome problems in the delivery of intervention, acceptability of intervention in the community, compliance and recruitment/retention of participants (Craig et al., 2008).

Therefore a pilot randomized controlled trial was selected as the study design to explore acceptability, recruitment and retention for a future cluster randomized controlled trial. The total duration of the trial from enrolment/recruitment till final outcome assessments was from 1st September 2012 till first week of January 2013.

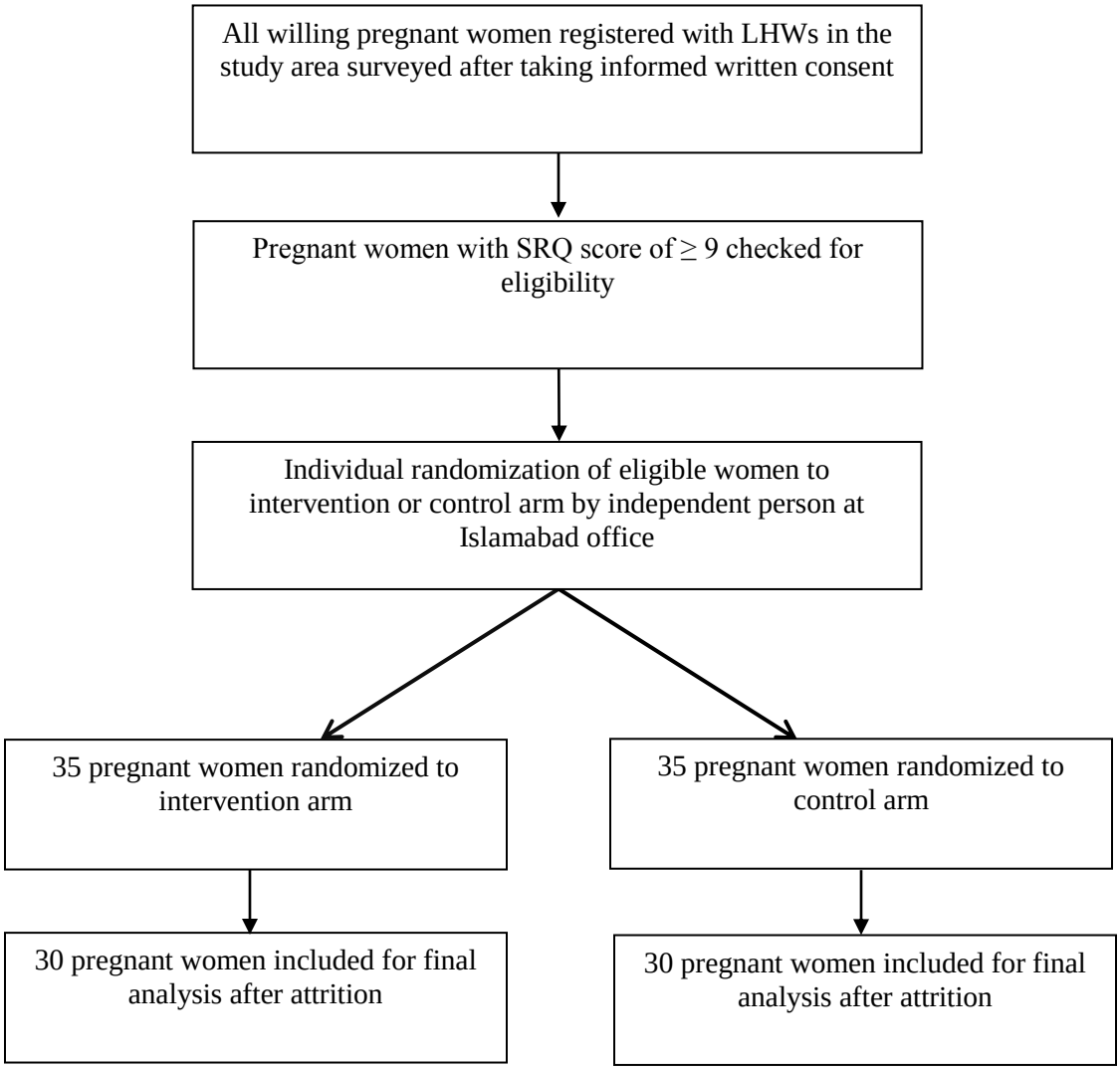
8.3.1. Study population

Trial participants were sourced from Study 1, through predefined inclusion and exclusion criteria, which will be discussed shortly.

8.3.2. Sampling technique and selection of subjects

Enrolment of participants to the trial was done on a weekly basis through a trial centre based in Islamabad. As the survey data (Study 1) was gathered at the field office in Swat, at the end of the week an excel sheet of those women fulfilling our inclusion criteria was created. Their unique identification number (UIN) sent to the trial centre in Islamabad by email. The UIN were then individually randomised in Islamabad and allocated to either the intervention arm (psycho-educational group) or the control arm (waiting group). This UIN with the randomization was then sent back to the research team in Swat. The families of those women falling into the intervention arm were visited by the relevant LHWs trained as described in Section 6.5.2 and the psycho-educational sessions delivered. The selection of participants and assignment into the two arms are presented below in Figure 8.1.

Figure 8.1: Flow diagram of Study 2



8.3.3. Sample size for the trial

The main outcome of the trial was an increase in help-seeking for psychological distress by the pregnant women. As this was a pilot study, the sample size was arbitrarily decided, based on the number of women with psychological distress identified by Study 1 and meeting the eligibility criteria for Study 2. A general rule of thumb for the estimation of sample size in a pilot study was applied, which is 30 or greater for an estimation of a parameter (Browne, 1995).

For Study 2, 42 women with psychological distress were recruited into the intervention arm and 39 in the control arm. The final number of participants, after attrition, in the intervention arm was 34 (excluding 8 subjects who gave birth before the intervention could be delivered). Similarly, in the control arm, 37 women completed follow-up (one woman left the area and the other did not want to continue with the study). Thus, around 95% of women in both arms completed followed up.

8.3.4. Inclusion and exclusion criteria

Pregnant women from Study 1 were included in Study 2 if:

- They had an SRQ score of 9 or above.
- They had no suicidal ideation.
- They were willing to participate in the trial.

Women were excluded with if

- They were severely ill with other medical or psychiatric disorder needing medical interventions.
- Lived in the same household.
- They gave birth before the intervention had been given delivered.

8.3.5. Process of randomization

As explained, randomization of women into intervention or control arms was done on weekly basis. The randomization process was carried out by an independent centre in Islamabad as elaborated. The Islamabad centre was not involved in the research and was unaware of the identity of the unique identification number (UIN). The LHWs who delivered the intervention were not aware of the status and procedure of the trial, they were simply informed by the Swat team to conduct the psycho-educational sessions with the specified family. Similarly, the assessment team was kept completely blind to the allocation status.

8.3.6. Intervention and Control arms

The intervention arm received two psycho-educational sessions of the intervention "Happy Mother Healthy Child, in Ten Steps" at their homes. These sessions were delivered as described earlier, by trained local LHWs from the study area. The LHWs were only informed of the women in the intervention arm and were instructed to deliver the sessions to only those women. (It is possible that the LHW would have women from the control arm in her area but she was instructed not to deliver the intervention to other women in her area till the end of the trial).

Therefore the control arm received only routine visits, similar to other pregnant women in the area.

8.3.7. Instruments

As explained above, participants for Study 2 were sourced from Study 1, and the same data collected through instruments described in Section 3.5 was used for baseline. Briefly, the instruments were: Self-Reporting Questionnaire (SRQ), Multidimensional Scale of Perceived Social Support (MSPSS), the Life Events Checklist (see summary Table 8.1 below and Section 3.5 in Study 1 for further details).

8.3.8. Primary and secondary outcome assessment

The primary outcome of the trial was help-seeking for psychological distress by pregnant women. It should be stated here that the primary outcome was chosen because it was easy to measure and was likely to be the most sensitive indicator of change in response to the intervention, and a convenient indicator for any positive trends. This was assessed at the end of the trial. This was determined through a semi-structured approach (see Appendix 1) by a researcher blind to allocation status at 2 months post-intervention. The information was obtained directly from the women's LHW. The LHWs were asked whether anyone in the family of the distressed pregnant women had contacted them for assistance with the mental health of the pregnant woman in the two months after the psycho-educational sessions. As the LHWs were the first point of contact for the women, they were considered to be the best source of this information. A potential limitation with this method was that there may have been an element of information bias as it is possible that the LHWs reported positive outcomes regarding their psycho-educational sessions with the families. However, there were grounds to suggest this type

of bias did not occur. Firstly, the LHWs were not aware of the methodology of the trial, i.e., which participants were in the intervention arm and which were in the control arm. They were instructed to deliver the sessions to families according to a schedule given by the research team. Therefore, they delivered the intervention to the control arm participants also, only later. Secondly, the information obtained from the LHWs was verified from the mother or a family member.

The secondary outcomes of Study 2 were psychological distress and social support at follow-up. Psychological distress was assessed through SRQ-20 (see Section 3.5.1) and was analysed both as a continuous and categorical variable with a score of 9 or more used as the cut off to indicate probability of having a common mental disorder. Social support was assessed through the Multidimensional Scale of Perceived Social Support (MSPSS) (see 3.5.2 for details) and the data used as interval data with the higher the score the better the social support perceived from *Significant Other, Family* and *Friends.*

Process evaluation and fidelity testing

For the process evaluation a mix method approach was adopted. Due to the limited resources, time and difficult setting, a rigid and extensive qualitative evaluation was not conducted. To assess participant recruitment and retention for the trial, the number of potential participants approached, the proportion fulfilling eligibility criteria, the proportion refusing participation, and the proportion actually completing the trial follow up were recorded. Fidelity was tested as follows: Half of the intervention arm sessions were observed by the Lady Health Supervisor (LHS) using a supervision checklist (specifically designed for the session). The checklist

evaluated how the session and content were delivered to the families and checked whether the agreed protocols were followed in the field.

Furthermore, every month, LHWs were gathered for a supervision meeting in their respective health facility. During these supervision sessions, the LHWs' field experiences were discussed, specific problems identified and brainstormed for solutions. LHWs also provided information regarding the community acceptability of the intervention. Informal notes were taken by an observer research assistant during the supervision sessions. Lastly, at the end of the trial, the female research assistants used a convenience sample to visit 5 of the 34 families in the intervention arm to discuss the families' perception of the intervention. Two female research assistants took part in these visits; one to interview the value and the other to take notes. All five visits adhered to the informed and voluntary consent as outline in the protocol.

8.3.9. Data collection and management procedures

The baseline data of the trial was the same as that collected for Study 1, as the participants who scored 9 or above on the SRQ in the survey were invited to take part in Study 2. The procedures are described in Sections 8.3.1-8.3.2 and summarized in Table 8.1. For the follow-up assessments, the SRQ and MSPSS were used. The data was collected by the same assessment team, using the same procedures described in Section 3.4. During the follow-up assessments, the team was not accompanied by the local LHW to prevent inadvertent identification of the allocation status. All the data were collected on a designated day. The data was cleaned, computerized and filed on the same day, at the field office in Swat. No personal information was entered during data entry and unique codes were assigned to each participant's data. Strict confidentiality of all data collected from the participants was maintained by keeping the files in a

locked room with access only by the PhD student. These procedures are summarized in Table 8.1 below.

Table 8.1: Summary of data collection of Study 2 Pilot Randomized Controlled Trial

Trial Phases	**Time point**	**Instruments used**	**Conducted by**
Recruitment/enrolment into the trial (Baseline)	Antenatal (During pregnancy)	SRQ PIQ LEC Pakistan MSPSS	The PhD student weekly at the Swat field office. Participants fulfilling the inclusion criteria were selected and recruited from the survey data.
Randomization of subjects	Weekly after survey data	Web based tool for random allocation	Local supervisor in Islamabad after taking Ids of participants through email from PhD student of eligible participants.
Psycho-educational sessions	After allocation and arrangement of session date	Happy Mother Healthy Child, in Ten Steps	Two sessions of psycho-educational intervention delivered by trained LHWs to the families.
Follow up	2 months after the session	SRQ MSPSS Help seeking for psychological distress.	Independent team only involved in the survey (hence blind to the participant allocation) did the follow up visit of the two arms after 2 months had passed after the psycho-educational intervention sessions.

8.3.10. Data analysis

The data were coded, entered and analysed using the SPSS 20 statistical package. Chi squared tests for categorical data (Fisher's two-sided exact test was used if numbers in the cells were less than 5) and t test for continuous data, were used to compare differences in the trial arms at the baseline as well as the follow-up assessments. Associations were considered significant at the 5% level.

8.3.11. Ethical considerations

Ethical approval was obtained from the University of Liverpool ethics committee and locally from the Health Services Academy Ethics Review Board Islamabad, Pakistan. Informed written consent was obtained from each participant after explaining the purpose of research and providing written information to participants (read out to those not understanding written material). For women who could not sign, a thumb print was requested in lieu of a signature. This was done through the LHW, who had been trained to take consent (see Section 6.5.2). The process of consent required two visits, the first where the LHW explained the study and obtained consent from the woman, and the second, to conform to local traditions, permission was obtained from the head of the family. Consent was reconfirmed by the research assistants when they visited the household for the actual interview. Confidentiality was ensured throughout the project and access to personal data (password protected computer) was only available to PhD student for follow up and referral of cases needing doctor consultation or specialized care. The participants were free to withdraw at any time during the course of the trial.

There were a number of ethical challenges of conducting research in this post-conflict environment. These are discussed in greater detail in Section 10.2.4.

Chapter 9: Results - Study 2

9.1. Overview of the chapter

The results for Study 2 are presented as follows:

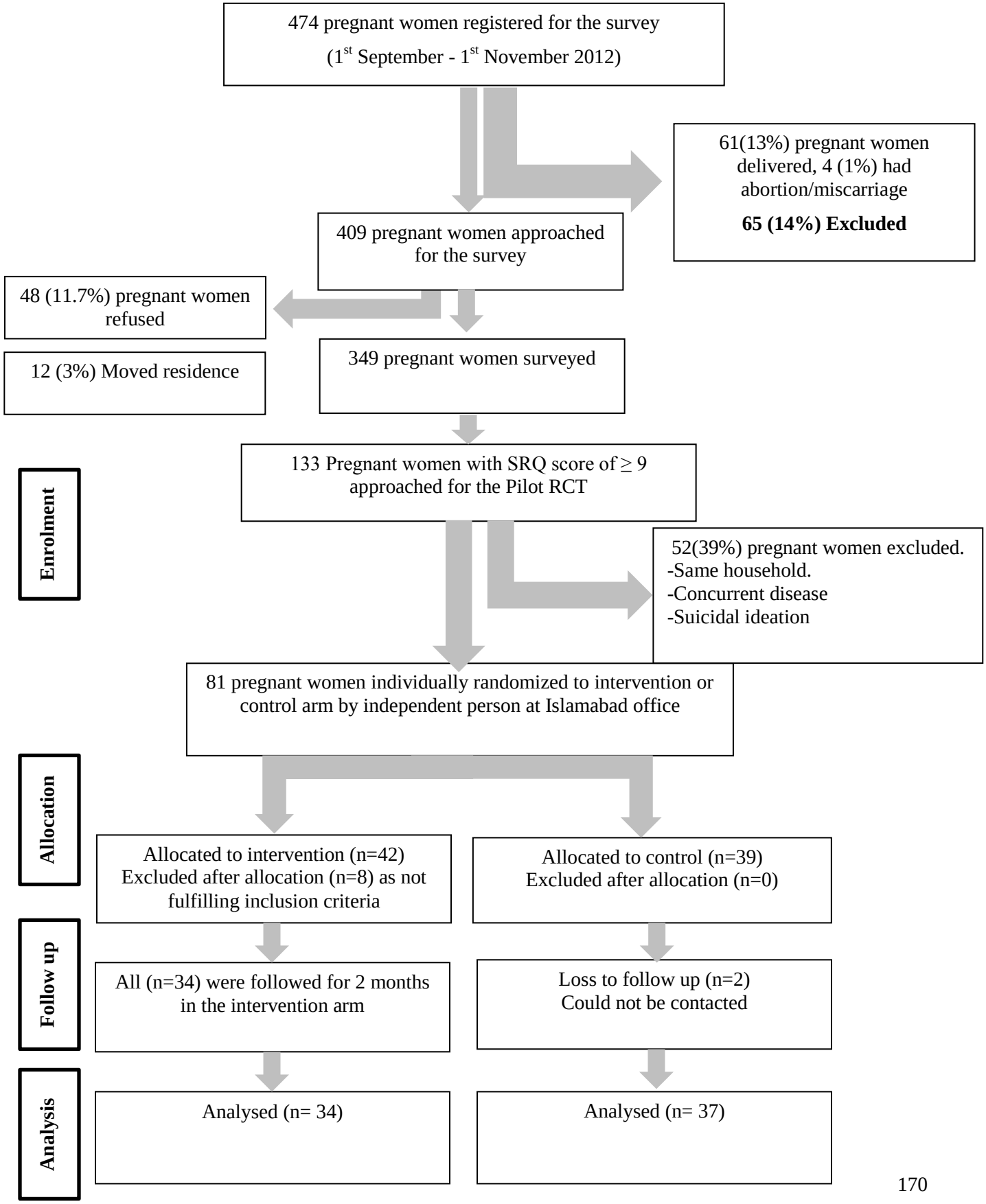
- Section 9.2 presents an overview of the sampling frame, study participants, randomization and response rate in the trial during follow-up.
- Section 9.3 compares the intervention and control arms at baseline on: psychological distress; perceived social support; personal and family characteristics; and stressful life events. Chi squared tests (categorical) and t test independent samples (interval) were applied and associations considered significant at the 5% level.
- Section 9.4 compares the intervention and control arms at follow up on the primary and secondary outcomes. Chi squared tests (categorical) and t test independent samples (interval) were applied and associations considered significant at the 5% level.

9.2. Overview of the sample and response rate

This is summarised in Figure 9.1. In all 474 pregnant women were registered in the study area (1st September 2012 till 1st November 2012) which consisted of the catchment area of two Basic Health Units (BHUs). Of these, 409 eligible women were approached for the survey. 349 (85%) pregnant women agreed to participate in the survey and were screened with the Self-Reporting Questionnaire (SRQ). Of the 349 surveyed, 133 screened positive for psychological distress i.e. had SRQ score of ≥ 9. Of these 133, a total of 52 women were ineligible for Study 2 for the following reasons: living in the same household with another pregnant woman of SRQ score ≥9 (n=3); concurrent medical conditions that had been diagnosed by a physician (n=6); suicidal ideation (n=13) who were referred to primary health centre for further management; and 30 were excluded because they had a combination of the three exclusion criteria (same household + concurrent disease = 6, same household + suicidal ideation = 10, concurrent disease + suicidal ideation = 11 and same household + concurrent disease + suicidal ideation = 3) making the total exclusion to 52. The remaining 81 women were individually randomised to either the intervention arm (psycho-educational session group) or control arm (waiting group). Thus, 42 study participants were randomised to intervention arm and 37 to control arm. A further 8 were excluded from the intervention arm as they had given birth before the psycho-educational sessions could take place making the total in the intervention arm 34.

Two participants in the control arm were lost at the two month follow-up. Thus, at 2 months the trial had a 100% (34/34) response rate in the intervention arm and 95% (37/39) response rate in the control arm.

Figure 9.1: Flow diagram of the prevalence survey and Pilot Randomized Control Trial



9.3. Comparison of intervention and control arms at baseline

In trials, randomization is carried out to ensure that the characteristics of participants that may influence outcomes, such as socioeconomic status, age, education etc., are distributed equally between the two arms. To ensure this, it is necessary to compare both intervention and control arms for any statistically significant differences. This is reported below.

9.3.1. Comparison of socio-demographic characteristics at baseline

Table 9.1 below compares the socio-demographic characteristics of the intervention and control arms at baseline. Maternal/obstetric factors – education and primi gravida status were significantly different between the two arms at baseline. There were significantly more uneducated pregnant women, and less primi gravida women, in the intervention arm. There were no statistically significant differences in age, duration of pregnancy, pregnancy loss or infant death. However, infant death was higher in the intervention arm compared to the control arm but this was not statistically significant.

Factors pertaining to family and socioeconomic status were evenly distributed between the intervention and control arm and no statistically significant difference was found.

Table 9.1: Socio-demographic characteristics of intervention and control arm at baseline

		Intervention arm N= 34 n (%)	Control arm N= 37 n (%)	P- value
Maternal/Obstetric factors				
Age	<= 19 years	4 (12)	6 (16)	0.743[1]
	20 – 24 years	8 (24)	12 (32)	
	25 – 29 years	12 (35)	10 (27)	
	30+ years	10 (29)	9 (24)	
Education	No education	22 (65)	15 (41)	0.036
	1 – 5 years	3 (9)	12 (32)	
	6+ years	9 (27)	10 (27)	
Infant death	Any infant death	7 (21)	2 (5)	0.077[1]
Pregnancy loss	Any pregnancy loss	11 (32)	12 (32)	0.994
Primi gravida	First pregnancy	2 (6)	10 (27)	0.018
Duration of pregnancy	1st trimester	4 (12)	4 (11)	0.803
	2nd trimester	17 (50)	16 (43)	
	3rd trimester	13 (38)	17 (46)	
Family factors				
Husband's education	No education	10 (29)	10 (27)	1.000[1]
	1 – 5 years	4 (12)	5 (14)	
	6+ years	20 (59)	22 (60)	
Family size	≥2 children younger than 7 years old	9 (27)	9 (24)	0.835
Family structure	Nuclear family	10 (29)	7 (19)	0.301
Socioeconomic factors				
Husband's employment	Regular employment	9 (27)	10 (27)	0.700[1]
	Subsistence farming	0 (0)	2 (5)	
	Working on daily wages	17 (50)	14 (38)	
	Self employed	7 (21)	10 (27)	
	Unemployed	1 (3)	1 (3)	
Husband's absence	≥6 months/ year from home	6 (18)	6 (16)	1.000[1]
Empowerment	Not empowered	17 (50)	21 (57)	0.569
Socioeconomic status by LHW	High	5 (15)	9 (24)	0.550
	Middle	14 (41)	15 (41)	
	Low	15 (44)	13 (35)	

[1]*Fisher's exact test where number in cells less than 5*

9.3.2. Comparison of recognition of psychological distress, SRQ, MSPSS scores and Life events at baseline between intervention and control arms

Table 9.2 compares both arms for the recognition of their psychological distress at the baseline. There was no statistically significant difference between the arms. A higher proportion of the intervention arm participants considered psychological distress as a physical problem (56% vs. 46% P= 0.403), but this difference was not statistically significant.

Likewise, a comparison of both arms were carried out on baseline psychological distress and perceived social support using SRQ and MSPSS measures respectively. These are summarised in Table 9.3. There were no statistically significant differences between the SRQ and MSPSS scores at baseline. Likewise, perceived social support, including all 3 subscales and individual items on MSPSS, showed no statistical significance.

Table 9.2: Comparison of psychological distress recognition at baseline

Recognition of mental health and help seeking	Intervention arm N = 34 n (%)	Control arm N = 37 n (%)	P-value
The problem requires the attention of a health professional	23 (68)	23 (62)	0.629
The problem is physical in nature	19 (56)	17 (46)	0.403
The problem is psychological in nature	4 (12)	6 (16)	0.737[1]

[1]*Fisher's exact test where number in cells less than 5*

Table 9.3: Comparison of SRQ and MSPSS score among trial participants at baseline

	Intervention arm N= 34 Mean (SD)	**Control arm N= 37 Mean (SD)**	**Mean difference**	**P-value**
SRQ* Score	11.41 (2.09)	10.73 (2.16)	0.68	0.18
MSPSS◊				
There is a special person who is around when I am in need	5.06 (2.10)	5.49 (1.89)	-0.43	0.37
There is a special person with whom I can share my joys and sorrows	5.06 (1.95)	5.49 (1.99)	-0.43	0.37
I have a special person who is a real source of comfort to me	5.56 (1.85)	5.46 (2.05)	0.10	0.83
There is a special person in my life who cares about my feelings	5.35 (2.03)	5.41 (2.10)	-0.05	0.92
Score on *Significant Other* subscale	21.03 (6.94)	21.84 (7.35)	-0.81	0.64
My family really tries to help me	5.41 (1.94)	5.30 (2.09)	0.11	0.81
I get the emotional help and support I need from my family	5.53 (1.73)	5.38 (2.07)	0.15	0.74
I can talk about my problems with my family	5.41 (1.96)	5.38 (2.15)	0.03	0.95
My family is willing to help me make decisions	5.44 (1.97)	5.68 (1.89)	-0.23	0.61
Score on *Family* subscale	21.80 (6.83)	21.73 (7.48)	0.06	0.97
My friends really try to help me	3.91 (2.15)	3.84 (2.35)	0.07	0.89
I can count on my friend when things go wrong	3.44 (1.91)	3.27 (2.01)	0.17	0.72
I have friends with whom I can share my joys and sorrows	3.68 (2.00)	3.86 (2.18)	-0.19	0.71
I can talk about my problems with my friends	3.71 (2.04)	3.84 (2.18)	-0.13	0.79
Score on *Friends* subscale	14.74 (7.25)	14.81 (7.52)	-0.08	0.97
MSPSS total score	57.56 (15.41)	58.38 (18.25)	0.82	0.84

**SRQ: Self reporting questionnaire, ◊MSPSS: Multidimensional Scale of Perceived Social Support*

In Table 9.4, the stressful life events in the post-conflict year, measured through the life events checklist, were compared in both arms at baseline and showed no statistically significant differences. However, a smaller proportion of the intervention arm participants reported: death/suicide/serious illness in a close relative in the post-conflict year (41% vs. 57% P= 0.190); change in social status (50% vs. 62% P= 0.302); illness/accident or hospitalization (47% vs. 57% P= 0.414); and financial problems (56% vs. 65% P= 0.439) but none of these were statistically significant. More participants in the intervention arm reported rows/quarrels amongst family members compared to the control arm (41% vs. 32% P= 0.445) but again this was not significant.

Table 9.4: Comparison of life events among trial participants at baseline

Stressful life events	Intervention arm N = 34 n (%)	Control arm N = 37 n (%)	P-value
You yourself or a close relative of yours had been ill or had an accident which led to hospitalization	16 (47)	21 (57)	0.414
Any of your close relatives died or committed suicide or had gotten seriously ill	14 (41)	21 (57)	0.190
Has anyone in your family had problems of livelihood	18 (53)	20 (54)	0.925
You or someone in your family has had any financial problem	19 (56)	24 (65)	0.439
You or someone in your family has had a change in social status	17 (50)	23 (62)	0.302
You yourself have had any problem with your residence	7 (21)	8 (22)	0.915
Your relations with any of your close relatives or friends have been troubled	8 (24)	11 (30)	0.556
Your marital relations with your spouse have had problems	11 (32)	12 (32)	0.994
You have been worried about your children's problems	17 (50)	16 (43)	0.569
You or other family members have had rows/quarrels amongst themselves	14 (41)	12 (32)	0.445

To conclude; this section compared the intervention and control arms on socio-demographic characteristics (maternal/obstetric, family and socioeconomic), psychological distress, perceived social support and stressful life events in the post-conflict year. When the process of randomization is carried out successfully there should be no significant differences between the intervention and control arms. However, there were significantly more uneducated pregnant women and less primi gravida in the intervention arm. These differences might be due to the small sample size of the trial. However no significant difference at baseline between the two groups on recognition of psychological distress, severity of psychological distress (measured through score of SRQ) and perceived social support. This was important to establish at the outset that any difference in the outcomes on follow-up can be confidently attributed to the intervention.

The next sections will report on the results pertaining to the three main objectives of the study as well as the secondary objectives of the study.

9.4. Effect of intervention on primary and secondary outcomes

The aim of this study was to evaluate the feasibility of a psycho-educational tool to improve awareness of psychological distress in family members of pregnant women using a pilot randomised controlled trial. The following hypotheses were tested:

- Hypothesis 1: Women with psychological distress who receive the two sessions of the psycho-educational intervention by LHWs (intervention group) will show an increase in help-seeking for psychological distress at two months follow-up compared to a control group that did not receive the intervention.

- Hypothesis 2: Women with psychological distress who receive the two sessions of the psycho-educational intervention by LHWs (intervention group) will have better perceived social support at two months follow-up compared to a control group that did not receive the intervention.

- Hypothesis 3: Women with psychological distress whose families receive the two sessions of the psycho-educational intervention by LHWs (intervention group) will have lower rates and symptoms of psychological distress at two months follow-up compared to a control group that did not receive the intervention.

The following sections report the results of each of these hypotheses.

9.4.1. Comparison of help-seeking for psychological distress between the intervention and control arms at follow up

Table 9.5 compares the intervention and control arms in terms of their contact and help from LHWs regarding their mental health. 71% of the women or a family member in the intervention arm compared to 46% in the control arm contacted the LHW for assistance with their mental health problems in the past 2 months and this was statistically significant P= 0.036.

In summary, there was significant improvement in help seeking for psychological distress in women receiving the two sessions psycho-educational intervention by LHWs compared to control at 2 months follow-up. The data indicates that hypothesis 1 is true.

Although this was a pilot study, and the aim was to evaluate the feasibility of conducting a definitive trial, the difference between the two arms is encouraging and indicates that the intervention might be improving awareness of the condition in mothers and their family members.

Table 9.5: Comparison of help-seeking for psychological distress between the intervention and control arms at follow up

Help seeking	Intervention arm N = 34 n (%)	Control arm N = 37 n (%)	P-value
Women seeking assistance for their mental health as reported by their LHW	24 (71)	17 (46)	0.036

9.4.2. Comparison of perceived social support between the intervention and control arms at follow up

Social support was measured using the Multidimensional Scale of Perceived Social Support (MSPSS). Table 9.6 compares the intervention and control arms on their perceived levels of social support at follow up. No statistically significant difference in their overall levels of perceived social support was found between the intervention arm and control arm (mean difference 0.039, 95% CI: -7.91 to 7.98; P= 0.992). A similar result was found on comparison of the subscales of the MSPSS: *Significant Other* (mean difference -0.619, 95% CI: -3.48 to 2.24; P= 0.667); *Family* (mean difference -0.983, 95% CI: -4.50 to 2.54; P= 0.579); and *Friends* (mean difference 1.766, 95% CI: -2.27 to 5.80; P= 0.386).

Thus, no statistically significant improvement in the perceived levels of social support of the women receiving the two session's psycho-educational intervention was found compared to the control arm at 2 months follow-up. Therefore, the data indicates that hypothesis 2 is false. However, this pilot study was not powered to detect a difference on this variable, and the result needs to be interpreted accordingly.

Table 9.6: Perceived levels of social support in intervention and control arms at follow up

	Intervention arm N= 34 Mean (SD)	Control arm N= 37 Mean (SD)	Mean difference	P-value
Score on *Significant Other* subscale	25.03 (7.10)	25.65 (4.86)	-0.619	0.667
Score on *Family* subscale	23.21 (8.68)	24.19 (6.05)	-0.983	0.579
Score on *Friend* subscale	9.44 (9.37)	7.68 (7.46)	1.766	0.386
MSPSS◊ total score	57.15 (19.11)	57.11 (14.28)	0.039	0.992

◊ *Multidimensional Scale of Perceived Social Support*

9.4.3. Comparison of rates and symptoms of psychological distress between intervention and control arms at follow-up

Psychological distress was assessed through the interval data of Self-Reporting Questionnaire (SRQ-20). Table 9.7 compares the intervention and control arms in terms of their SRQ score at follow up. The mean score in the intervention arm was less than that in the control arm, indicating that there was a comparatively better improvement in the intervention arm, but this was not statistically significant (mean difference -1.08, 95% CI: -2.75 to 0.59; P= 0.20).

Table 9.7: Improvement in the symptoms of psychological distress at follow-up

	Intervention arm N= 34 Mean (SD)	Control arm N= 37 Mean (SD)	Mean difference	P-value
SRQ* Score at follow up	5.35 (3.29)	6.43 (3.73)	-1.08	0.20

**Self-Reporting Questionnaire*

However, when the baseline and follow-up scores of the two arms were compared, the mean reduction of SRQ scores from baseline to follow-up was significantly more in the intervention arm compared to control arm (mean difference 1.76, 95% CI: 0.13 to 3.39; P= 0.035). This is presented in Table 9.8.

Table 9.8: Mean reduction in the symptoms of psychological distress from baseline to follow-up

	Intervention arm N= 34 Mean (SD)	Control arm N= 37 Mean (SD)	Mean difference	P-value
Mean reduction in SRQ* score from baseline	6.06 (3.01)	4.30 (3.78)	1.76	0.035

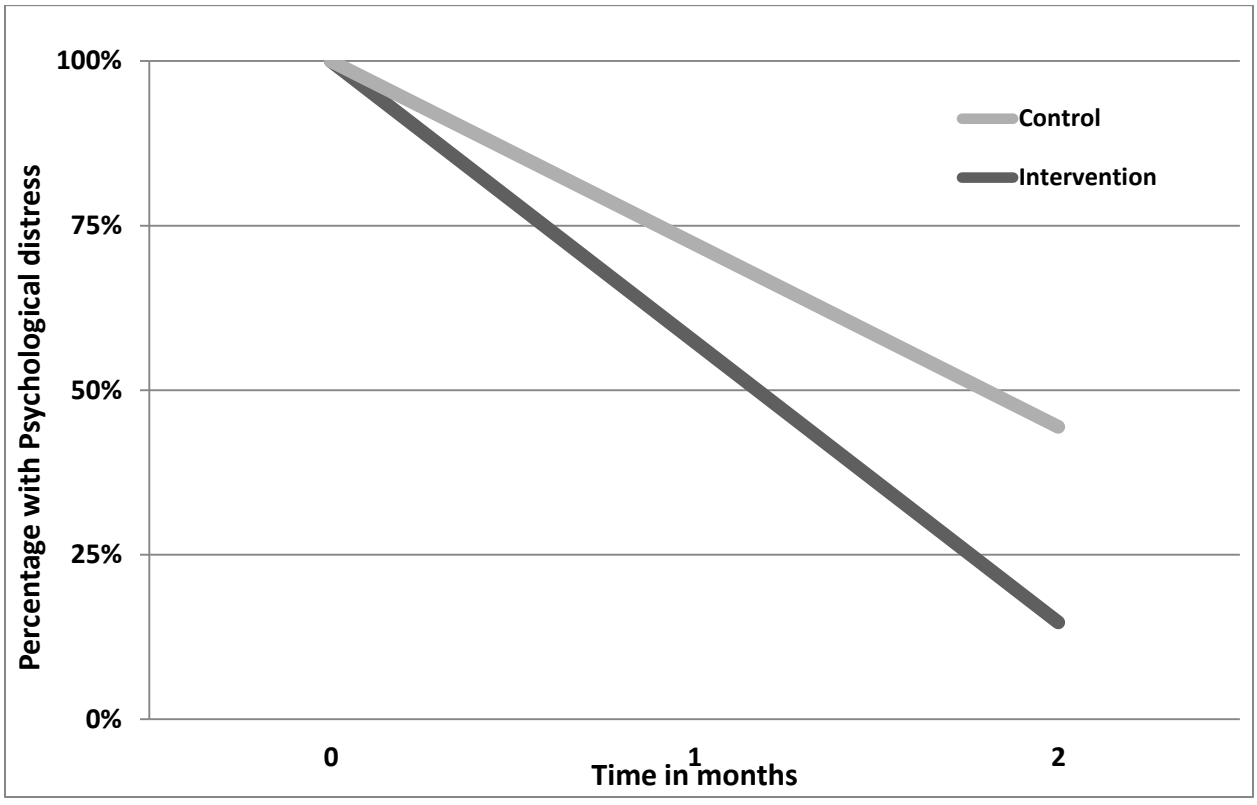
**Self-Reporting Questionnaire*

Table 9.9 and Figure 9.2 shows rates of psychological distress in the trial arms at follow up. The rate of psychological distress was higher in the control arm than in the intervention arm at follow up, but this result was not statistically significant.

Table 9.9: Rates of psychological distress in the trial arms at follow up

	Intervention arm N = 34 n (%)	Control arm N = 37 n (%)	P-value
Psychological distress	5 (15)	11 (30)	0.130

Figure 9.2: Rates of psychological distress in the trial arms at follow up



We also conducted the same analysis using a higher threshold for distress (SRQ ≥ 11). Table 9.10 compares the differences between the two arms at follow up. The rate of psychological distress was higher in the control arm than in the intervention arm at follow up and these findings were statistically significant (P= 0.040).

Table 9.10: Rates of psychological distress with higher baseline SRQ (SRQ ≥11) in the trial arms at follow up

	Intervention arm N = 20 n (%)	Control arm N = 15 n (%)	P-value
Psychological distress	4 (20)	8 (53)	0.040

To conclude, there was a positive trend in the reduction of the rates of psychological distress in women who received the two session psycho-educational intervention by LHWs compared to control at 2 months follow-up but this reduction was not statistically significant. Small statistically significant results were seen when a pre-post comparison of distress scores as well as rates of distress rates, were carried out between the two arms. As this was a pilot study and not powered to detect differences in symptom scores, the positive trend as well as the pre-post differences, are encouraging.

9.4.4. Acceptability of the intervention and feasibility of the procedures and tools

As discussed in Section 8.3.8, I obtained feedback on the acceptability of the intervention once the LHWs had delivered both psycho-educational sessions in the community. A convenience sampling approach was used to select 5 out of the 34 families in the intervention arm. Similarly, feedback was obtained from LHWs during the supervision sessions. A rigorous qualitative analysis was not within the scope of the study, but key impressions noted by the author are reported below, substantiated by some representative quotes:

Most of the families and LHWs were positive about the intervention. The sketches and illustrations accompanying the written text of the intervention were considered to be representative of the local cultural sensitivities and hence were perceived to be useful by the mothers and their family members.

"This should have been done before, as we have faced these issues in the past". [Mother-in-law of a distressed woman]

"Small steps but can bring big change". [Mother-in-law of a distressed woman]

Using the child's health and development to introduce the agenda of women's psychosocial well-being was largely successful in engaging the family members.

"Your aim in this intervention is that we should take care of the pregnant woman and I myself feel the same as my grandchildren are at stake". [Mother-in-law of a distressed woman]

Husbands were a key target for the intervention and it appears the message was trickling down to them.

"As you told us all this good information; this will benefit us. Till now if we have not cared for our wives but now we will". [Husband of a distressed woman]

Mothers engaged with the intervention, too.

"I also feel the same as is shown in the sketch, but when my husband supports me; my attention is diverted and I feel better". [Distressed woman]

LHWs were able to deliver the intervention, and there was some satisfaction expressed at being able to understand more about mental health.

"While I was conducting the session the pregnant woman started weeping and realized that I could help her". [LHW of a distressed woman]

Supervision feedback

As explained in Section 8.3.8, LHWs received monthly supervision from their own supervisors, who also observed a number of their session in the field. They took field notes, and their key observations are presented here. The average duration of the session was 32 minutes. LHWs visited these households on the specified date and time. The leaflets were distributed to all the households. All the sessions were conducted using the counseling cards provided to the LHWs. The overall feedback from the field sessions was satisfactory as most of the LHWs delivered the

sessions according to their training. A quantitative evaluation of their performance in the field is presented in Table 9.11.

Table 9.11: Supervision feedback from the sessions (17 sessions with different LHWs observed)

Areas supervised	Agree n (%)	Somewhat agree n (%)	Neither agree nor disagree n (%)	Somewhat disagree n (%)	Disagree n (%)
LHW was empathic and supportive	8 (47)	5 (29)	2 (12)	0 (0)	2 (12)
LHW explained the importance of maternal well-being and foetal development	11 (65)	0	4 (24)	2 (12)	0
LHW talked about each of the ten steps to a happy mother	12 (71)	4 (24)	0 (0)	0 (0)	1 (6)
LHW used the counselling cards appropriately	14 (82)	3 (18)	0 (0)	0 (0)	0 (0)
LHW used the illustrations to discuss psychosocial problems	15 (88)	2 (12)	0 (0)	0 (0)	0 (0)
LHW engaged the whole family	8 (47)	0 (0)	0 (0)	0 (0)	9 (53)

Chapter 10: Discussion - Study 2

This chapter begins with a summary of the main findings from Study 2. The next part of the chapter discusses methodological issues with a focus on the strengths and limitations of the study. This is followed by a discussion of the main findings, in light of comparable studies from Pakistan and similar settings. The chapter concludes with a brief discussion of the potential policy and research implications of the findings.

Summary of key findings

In this pilot randomised trial of an intervention to raise awareness about psychological distress in pregnant women living in a post-conflict setting, there was very low level of recognition of distress in the trial participants at the baseline. Following intervention, more women sought assistance for their distress from their community health worker in the intervention arm, compared to women in the control arm. There was no difference in the levels of perceived social support or severity of symptoms. The intervention appears to be acceptable to the community as well as the primary health care personnel who delivered it. There was a high response rate, and attrition rates were low.

10.1. General methodological considerations

Earlier, we have discussed that pilot RCTs have some inherent weaknesses, and the findings of such trials should be interpreted with caution. The following discussion reports limitations of the current pilot RCT and how these might influence our interpretation.

Two concepts are key in understanding the limitations of randomized controlled trials. These are internal and external validity of the trial. In the1950s, Campbell a social scientist proposed a useful distinction between the two (Campbell, 1957): Internal validity indicates that the differences observed between the trial arms are truly attributable to the intervention under investigation, and are not due to chance. In other words, internal validity is the extent to which systematic error (bias) is minimized in trials. The external validity of the study refers to the extent to which the results of the trial can be generalized to other populations or settings, and if sufficient information has been reported to enable us to assess this. This may include the participant's characteristics (age, sex, disease severity, comorbidity, and risk factors); intervention (content, delivery mode); settings (hospital/community; provider's characteristics); and modalities of outcomes (type and definition of outcome and duration of follow up). Internal validity is a prerequisite for external validity as without it the results are invalid and therefore generalizability is not possible (Juni et al., 2001).

Randomized controlled trials represent the gold standard in the evaluation of healthcare interventions when properly designed, conducted and reported (Schulz et al., 2010). However, these gold standard randomized trials can give invalid or biased results if the design, conduct and

reporting of the trial is not rigorous (Juni et al., 2001). The following discussion will report on the limitations in the current trial in respect to internal and external validity.

10.1.1. Limitations in internal validity

Sample size

As reported in Section 8.2 pilot studies are smaller versions of the main study and they are conducted to test whether the components of the main study will all work together. Sample size and 'power' calculations are often not done, as hypothesis-testing is not the key consideration in these studies. Many pilot studies do not have a control arm. While, the current pilot study had a control arm, the sample size was based on convenience and feasibility, no power calculations were carried out (see Section 8.3.3). By the end of the trial the number of participants recruited was more than the conventional sample size of 30 for each arm in pilot studies (Browne, 1995). Based on this sample, hypothesis testing was conducted to obtain an idea of trends, and some significant results were obtained, which is encouraging. As reported in Section 8.2 in a recent review (Arain et al., 2010) around 80% of the pilot trials have done hypothesis testing and inferential statistics. However these findings from the current trial should be interpreted with caution as the sample size was small and there was imbalance between intervention and control arms in some of the variables at the baseline. At best, this indicates a general trend of the effects of the intervention and warrant a future trail with a more rigorous methodology and design.

Potential biases in the trial

As this was a community-based pilot randomized controlled trial to evaluate a locally adapted psycho-educational tool, the following major sources of potential errors or biases were identified: i) the assessment team; ii) the trial participants; and iii) contamination (spread of information between intervention and control arms). The potential biases arising from these sources, and the measures taken to address them, are discussed below.

Selection bias

Careful randomisation of participants should ensure that characteristics that may influence outcome, such as demographic, socioeconomic and outcome are distributed randomly between the trial arms at baseline (Roberts and Torgerson, 1998, Altman and Bland, 1999). In other words, the main objective of randomization in these trials is to construct two groups with random allocation of potential confounding factors between them. However, the success of randomization is dependent on two interrelated procedures (Altman, 1991). Firstly, an allocation sequence must be generated through a computer, or any other method for allocation, of the participants to the two arms of the trial. Secondly, this allocation sequence must not be revealed to those enrolling participants to the trial, as this might lead to biased selection of participants. For example, knowledge of assignment of those enrolling participants can cause selective enrolment of participants on the basis of prognostic factors (Keirse, 1998). In the current trial the participants were sourced from study-1 (see Section 8.3.1) and randomization was done on weekly basis by a separate centre in Islamabad. For this process of randomization, an excel sheet of the women fulfilling the inclusion criteria was created weekly at the study field office of the study by the author. The unique identification numbers (UIN) of the women were shared by

email with Islamabad office as well as the primary supervisor. The list was individually randomized in Islamabad and participants allocated to the intervention arm (psycho-educational group) or control arm (waiting group) and a new list with the randomisation sent back to the research lead. The Swat team informed the relevant LHW of the women in the intervention arms so they could deliver the intervention. The LHWs were requested to deliver sessions strictly according to the guidelines provided to them. The LHWs were also supervised by their regular Lady Health Supervisor (LHS). Thus selection bias was kept to a minimum because the allocation sequence was not known to the research team as it was generated in a different place from the field site and was not communicated to the team.

Performance bias and detection bias

Performance bias ensues when unequal provision of care is given to groups in a trial other than the intervention under study. Blinding of participants and intervention providers prevent this type of bias (Juni et al., 2001) as neither the participants nor the providers of the intervention know the allocation status, making unequal provision of care impossible. However, as this was an educational intervention, blinding of providers and participants was not possible. However, the two groups were provided identical care by their LHWs, the only difference being the 2 extra sessions provided by the LHW. The process by which LHWs were involved in the study depended on the randomisation process. That is, the LHW asked to deliver the intervention if a woman in the intervention arm was from her catchment area. No external agents were involved in the delivery of care, thus ensuring that performance bias was kept to a minimum.

Detection bias occurs when there are biased assessments of outcome, and may happen if knowledge of the allocation status influences the outcome assessment (Noseworthy et al., 2001).

As the baseline data was sourced from study-1, outcome assessments were done through a team which was not involved in the planning, design and conduct of the trial and hence were not aware of the methodology of the pilot RCT. To further safeguard against detection bias and allocation status of the participants, the concerned LHW (who delivered the intervention) did not accompany the team during these assessments, although she had accompanied the team for study-1. In addition the participants were asked not to reveal the content of the sessions to the assessment team so that there allocation status was not apparent to the assessors.

However, some detection bias could still occur as the LHWs who provided the intervention were also assessed for the main outcome of the trial, i.e. an increase in help seeking for psychological distress by the pregnant women as explained in Section 8.3.8. It is possible that because the LHWs were aware of the women allocated to the intervention arm, they might be tempted to report mainly positive outcomes. However, there are several reasons why this is not likely to have happened. Firstly, the LHWs were not aware of the methodology of the RCT trial in the current research. They were neither involved in the allocation and assignment of participants to the intervention and control arms, nor were they part of the assessment team for the baseline data. They were instructed to deliver the sessions with the families as directed by the field office. Furthermore, they were required to deliver the sessions to all the trial participants, including the control arm (after outcome assessments had been conducted). Secondly, the LHW's report was verified by a family member. Nevertheless, as has been stated in Section 8.3.8, the outcome was chosen for convenience and likelihood of sensitivity to change. The fact that it is prone to bias is a major limitation of the pilot study, and in a definitive trial, other objective measures of help-seeking would be employed.

Attrition bias

Exclusion or exit of participants after allocation can introduce bias known as attrition bias. This either happens at the start of the trial when either the participants are non-adherent to treatment/intervention or the eligibility criteria is not followed. In addition, some of the participants may be lost to follow up meaning either they are no longer interested in taking part or they have moved out of the area and cannot be contacted. Participants excluded from the trial after allocation are unlikely to be similar to those that are included (Juni et al., 2001). For example patients may not be available for follow up as their condition has flared up or they might have developed severe side effects (Sackett and Gent, 1979). Therefore every measure should be taken to include all those allocated (Juni et al., 2001). In my study, 8 pregnant women in the intervention arm were excluded after allocation as they had given birth and therefore no longer fulfilled the inclusion criteria of the trial. Other than the eight women all the remaining participants in the intervention arm remained in the study and were followed up at two months. Only 2 pregnant women in the control arm were lost to follow up (could not be contacted) resulting in an overall follow up rate of around 95% for this arm. Thus, it is possible to say that there was minimal attrition bias.

Contamination

Contamination occurs when the intervention or treatment is inadvertently received by the participants in the control group. This spreading of information is of particular problem in trials evaluating public health or educational interventions because of their easy spillage. In other words in educational intervention the content is difficult to confine to the participants for whom they are intended. This spreading of information through intervention arm or delivering agent to

the control participants can lead to contamination of the trial which results in reduction of the effect size in the final assessment (Keogh-Brown et al., 2007). In the current trial contamination cannot be ruled out because of the close proximity of intervention and control arms although some steps were taken to minimise this:

- LHWs were asked to deliver the sessions *only* to those families they were instructed to by the research team.

- Participants living in the same household were excluded.

- Active supervision was conducted to ensure the sessions were conducted as planned and no session was conducted outside the intervention arm participants.

In spite of these measures, some contamination is inevitable as all the participants and delivery agents (LHWs) lived in the same geographical area and therefore the final effect sizes will be underestimated. There is evidence indicating this was the case in the current study, as even in the control arm, 46% of the control arm participants approached their respective LHWs for assistance about their psychological distress despite receiving no intervention. The baseline assessments and interaction with the research team could also have contributed to this raised awareness. The potential for contamination, therefore, is another major limitation of the pilot study. Therefore, the results of this trial should be interpreted with caution.

Ideally, contamination in such studies can be avoided by separating intervention and control arms geographically and by randomising those geographical areas rather than individual subjects. Such kind of trials are called cluster randomized controlled trials (Donner and Klar, 2000), and

have been described in Section 8.1.2. Such trials have the advantage of reducing contamination (Keogh-Brown et al., 2007). However, they are complex and expensive to undertake.

10.1.2. Limitations in external validity

Trial settings and study population

The trial participants were sourced from study-1, in which the setting was purposively chosen, based on a number of methodological and logistic reasons described in Section 3.1.The study area was near a major city with easy access to hospitals, education institutions and other day to day facilities. Thus, the findings might not be generalizable to other more remote union councils of the district or the country. However, the literacy levels and socioeconomic status of the participants were quite similar to other rural areas of the country (see Section 5.1.2).

The rates of psychological distress, and other socio-demographic variables such as family structure, birth rates, etc., are also comparable with most other rural areas in the country. However, it should be noted that one of the main objective of both studies was to evaluate distress and intervention in a humanitarian context. The study area was a nexus of the militancy and most of the population was affected. It would be hard to generalize humanitarian contexts, as these are very variable, but nevertheless, the study demonstrates interesting comparisons with similar studies done in other parts of the world, and this is also evidence of external validity.

Response rate

The overall response rate for both study-1 and study-2 has been described in Section 9.2 with detail of participants at each stage of research. In study two, 2/39 (5%) pregnant women in control arm were lost to follow up at the final assessment and none were lost in the intervention arm. This high response rate was achieved because the LHWs, who helped the research team access the women, were local and respected, and had a good relationship with the families in their catchment areas. In addition, the final assessments were done only once, at the women's homes, and after a comparatively short period of time of (2 months post intervention), which may also have contributed to the high response rate, and thus good external validity.

10.2. Discussion of the main findings

10.2.1. Impact of the psycho-educational intervention on help-seeking for psychological distress

There was a very low level of awareness in the trial participants at the baseline assessments as only 12% and 16% of the intervention and control arm participants respectively acknowledged their psychological distress (see Section 9.3.2). The main objective of the trial was to improve help-seeking for psychological distress during pregnancy through help and consultation with the LHW (see Section 8.3.8). Following the intervention, 71% of the psychologically distressed pregnant women in the intervention arm sought help from their LHWs for their psychological distress, compared to 46% in the control arm, and this difference was statistically significant.

The above findings indicate that there was significant improvement in help seeking for psychological distress in pregnant women after receiving the psycho-education provided by the LHWs in the community. All of these women were referred to the trained staff in the primary health care facility for management of their psychological distress (see Section 3.9). However, whether any of these mothers and their families attended the health facility is not known. Certainly, none had visited the health facilities a week after they were referred and further follow up was not included in the scope of the study.

As is the case in other Low and Middle Income Countries (LMICs), the results highlight the need for interventions that raise awareness about common mental disorders and guide people towards appropriate help-seeking. As elaborated in Section 6.4, mental disorders are associated with stigma and there is a general lack of awareness. Both of these barriers can lead to underuse of

available mental health services (Patel et al., 2009). To address the lack of awareness, different approaches have been tried. In high-income countries, campaigns have been launched through print and electronic media to target different sectors of the community (Paykel et al., 1997, Regier et al., 1988). The Defeat Depression Campaign in the United Kingdom (Paykel et al., 1997) was a 5 year campaign from 1992-96 to enhance public awareness and attitudes on one hand, and on the other hand provide professional education. For this purpose, print media was extensively used for the general public, and multi-professional conferences were organized for the professional sector. The campaign helped to improve general public awareness as well as professional recognition and management of depression.

In low-income countries, other strategies have been tried. In a rural community of Rawalpindi, a school mental health program was implemented to increase community awareness of mental health problems (Rahman et al., 1998). This program consisted of a four-month mental health education program and led to significant improvement in the mental health awareness of the school children who directly received the education package and through them their families, friends and neighbours. Therefore, the effects of the program permeated outside to those who had direct access to the school education.

The use of print media would be of limited value in my study due to the low school enrolment rates; especially in women (see Section 4.3.1). Electronic media is also problematic due to its reduced availability (radio 33.2% and television 42.9%) in the rural areas of Pakistan (NIPS, 2008). While community programs, such as the one discussed above in schools are not likely to be accessible for women because of the existing cultural traditions that do not permit women to go outside of their houses (Mohmand and Gazdar, 2007). In the author's view, LHWs are the

most appropriate choice to raise awareness in the community because they are locally based, known and respected in their communities (see section 6.5.2).

Furthermore, as previously mentioned, the stigma associated with mental health problems could make families and women reluctant to seek care and therefore lead to the underuse of the mental health services (Patel et al., 2009). A recent review of interventions (Rahman et al., 2013a) suggests that stigma could be addressed through the integration of mental health interventions into the daily routine work of the health workers. The integration of such services may feel less stigmatizing and therefore may be more acceptable. Another strategy used (Rahman, 2007) is to avoid terms such as "depression", and instead use words, such as "stressed" or "overburdened". Similar adjustments were made in an intervention in the UK for the underserved groups where the term 'well-being' rather than "mental health" was used to maximize engagement and tackle stigma (Dowrick et al., 2013). Similar measures were taken in the current study and might have helped tackle the issue of stigma and consequently improvement in recognition and help-seeking observed in the study.

Improving access to mental health services is also important, and seen a priority in high income countries. Issues of accessibility were explored through a mixed method study in the North West of England to improve access to primary care level mental health services for the underserved groups, including participants from Pakistan and Bangladeshi communities (Dowrick et al., 2013). Dowrick and colleagues developed a multifaceted model with three main elements to improve access. These were: community engagement; improvement in primary care quality; and tailored psychosocial interventions. A range of qualitative and ethnographic research methods were used to gain an understanding of the mental health issues from the underserved

communities. In addition, a person local to the community was employed to engage the community and increase awareness of mental health issues. In this way, the communities were encouraged to reflect and design local interventions. These interventions include: the development of culturally relevant materials, in particular, calendars that would increase awareness of mental health issues and provide information on locally available resources. In a similar way, my study engaged community based LHWs who would be aware of the local cultural issues to work with distressed pregnant women in their areas. The psycho-educational intervention focused on improvement about awareness of culturally relevant mental health issues and provided information regarding the available options. Significant improvement in help seeking for psychological distress was observed following the intervention and all these women were referred to health facility for management as described above.

The improvement in help seeking in psychologically distressed pregnant women through local community based LHWs be the first step in the management of perinatal depression in a country with scarce technical and financial resources (WHO, 2005, WHO, 2011). This has to be coupled with development of services to meet the needs of those who require them. The integration of mental health services into the primary care has been advocated as the most viable way of closing the treatment gap for those needing mental health care (WONCA) (WHO., 2008). This form of integration will need human, financial and technical resources to be established. In a country like Pakistan, with more than 90,000 community health workers (Hafeez et al., 2011, Oxford, 2009) with proven potential of management of perinatal depression (Rahman et al., 2008), this tier of health system could be utilized to close the treatment gap. The evidence suggests that mental health care is more effective when hospital and community services are provided together (Saxena et al., 2007). However, around half of low-income countries provide

community mental health care. Therefore, training community based health workers, such as LHWs in the management of perinatal depression should be further explored, especially in low income, cultural conservative settings. This approach is also supported by the World Health Organization's mental health GAP action programme (mhGAP), where mental health care is built into primary care facilities and management of priority conditions by non-specialists (task-shifting or sharing) is emphasised (WHO, 2010).

As reported above, none of the women who had been referred by their LHW went on to access the primary health care during the time period of the study. This could be due to the shorter follow up period or due to other issues of accessibility of services. However, this finding reinforces the point made earlier of the relevance of involving LHWs in the management of perinatal depression as the health workers are more accessible to the women.

To conclude, help-seeking by distressed women from the LHWs was significant in this pilot RCT. This might be due to the less stigmatizing nature of this community-based service. Most of the barriers; like lack of awareness; stigma associated with mental disorders; scarce resources; and importantly, lack of access for women who are housebound could be overcome through the involvement of community health workers in the management of perinatal depression. This should be explored further through future research in the current study settings.

10.2.2. Impact of the intervention on psychological distress and social support

The intervention was not designed to treat common mental disorder. However, it was envisaged that improved awareness might lead to improved family support, which may then lead to a reduction in symptoms of distress. The results indicate that while the follow-up mean scores on

the SRQ in the intervention arm are less than that in the control arm this is not statistically significant. The study was not powered to detect even very large changes in symptom scores – this was beyond the scope of the study. But it is encouraging to see a trend in the positive direction. However, too much cannot be read into this finding, as it may simply have been due to chance.

There was no difference between the intervention and control arms in perceived social support from *Significant Other, Family* and *Friends*. Again, this was to be expected, primarily due to the small size, and also due to the immediacy of the follow-up assessment – it would be difficult to expect major changes in perceived support in such a short time. Again, we cannot read much into this finding.

At the very least, we can say that there were no major untoward effects of the interventions and the impact appears to be on the right direction.

Other studies have also evaluated the impact of psycho-education on psychological distress in pregnant women. For example, a similar psycho-educational intervention (Lara et al., 2010) was delivered to low income women during pregnancy in Mexico. This randomized controlled trial found a significant reduction in the cumulative incidence of depression during three time periods compared to the control arm. Furthermore, the intervention arm participants who had high initial symptoms of depression and anxiety had a larger reduction in BDI-II (Beck Depression Inventory) than the control participants who had similar high scores. However, those with low initial depression and anxiety scores in the intervention arm had a similar trend to depressive symptoms across time as the controls. Similar results were obtained in my study as 80% (16/20) of the participants in the intervention arm with high initial SRQ scores (SRQ score of 11 or

more) had no psychological distress (SRQ score of < 9) at follow up as compared to 46.7% (7/15) of the participants in the control arm. Furthermore, those with initial low SRQ scores (SRQ score of 9-10) had a similar trend to psychological distress symptoms across time as controls and there was not any statistically significant difference. These findings suggest that the intervention had higher effect on pregnant women with higher initial symptomatology. However, the Mexican study had a longer follow-up, more sessions and was delivered by highly trained professionals as compared to the current trial. Hence, direct comparisons with this study are not appropriate.

In the Mexican trial reduction in depressive symptoms through (BDI-II) was observed over time; however this occurred in both trial arms and could not be attributed to the intervention (Lara et al., 2010). This has been reported in other studies as well (Zlotnick et al., 2006, Austin et al., 2008, Hayes et al., 2001). Lara and colleagues (Lara et al., 2010) suggest that depression symptoms as an outcome measure alone might be confused with other symptoms common during this period. Therefore, they recommend that a clinical assignment may be more appropriate to measure depressive symptoms. Moreover, the intervention arm participants may be more sensitized and motivated to reflect correctly on their symptomatology compared to the control arm because they have received the psycho-educational intervention. Limitations regarding measurement of clinical depression in the current trial had been reported in Section 3.5.1. A screening questionnaire was preferred over a more reliable clinical interview because it would be shorter and less intrusive than the clinical interview. In addition, there was a lack of suitably trained personnel.

Another study of a psycho-educational intervention was conducted in primary care setting in the UK on Asian women. The trial included women of Indian origin, 18 years or above and fluent in Hindi or English (Jacob et al., 2002). After the initial screening through a validated version of the General Health Questionnaire 12 (GHQ-12) women scoring 3 or above (n= 70) were recruited for the trial. 35 were randomly allocated to the intervention arm (who received a patient education leaflet) and the same number (35) allocated to the control arm (who did not receive the leaflet). The results showed a statistically significant reduction in the GHQ scores in the intervention arm as compared to the control arm. There are a number of similarities between the UK study and the current study: the follow up assessments, using the same approach, were conducted after a 2 month period and also involved the same number of participants across both arms. In addition, the content of the educational material was also to some extent similar, with both reporting the causes, prevalence, severity and ways of management. But in the British Asians study the educational material was given only in a leaflet or read to the participants if they had low levels of literacy. The participants then consulted the GP at the health care centre. However in the Swat trial this information was delivered to the whole family with sketches/illustrations along with the leaflet in two sessions at the pregnant women home.

Another trial in Australia (Austin et al., 2008) showed a reduction in symptoms in both trial arms during the perinatal period, where the intervention arm received cognitive behavioural therapy-based intervention and the control an information booklet. In Austin et al's (2008) trial, the information booklet appears to be as effective as CBT-based intervention, although they do not report details of the action women took in response to the leaflet (e.g., visited their GP and were prescribed anti-depressants). Nevertheless, this does raise the question as to whether a simple leaflet would be enough to raise awareness, and even produce a positive change in mental health.

Future trial designs might consider a three-armed trial, or a head to head comparison between the two approaches.

However, other studies from South Asia have found that psycho-education alone does not lead to a reduction in depressive symptoms. In Goa, India, pregnant women were visited twice at home during pregnancy and three times after child birth (at 4, 7 and 10 weeks postnatal) and received supportive, empathic listening and psycho-education (Hughes, 2009). Although the Indian intervention had more sessions, both studies focused on supportive, empathic listening and information provision. Furthermore, the outcomes were assessed at the postnatal period in the Indian trial but no differences were reported between groups in EPDS score > 12. This is similar to our findings as I did not find a significant difference in the SRQ score > 8 (psychological distress) in both the arms at the outcome assessments.

Interventions involving and engaging users and families appear to strengthen social support and coping mechanisms over time (Blanchet et al., 2013). While no such impact was shown in the current study (and this could be entirely due to chance as the study was not powered), a possible explanation could be that the interaction with the families was of not of a sufficient duration to improve social support. As a trial in rural Rawalpindi (Rahman et al., 2008) suggests, in order to achieve sustained change, the intervention needs to be of longer duration. Rahman and colleagues provided 16 sessions beginning at the third trimester of pregnancy and continuing to the 6th postnatal month. The intervention led to a significant improvement in social support for depressed women in the perinatal period. Thus, it is possible that a prolonged interaction with participants and their families in my study might have led to an improvement in social support.

10.2.3. Acceptability of the intervention and feasibility of the procedures and tools

The study achieved a high response rate and the LHWs were able to deliver both sessions to most of the participants. At the conclusion of the follow-up assessment, all the women in the control arm were also delivered the sessions. These were regularly supervised by the LHWs' supervisors, and the supervisors visited half of the households in the intervention arm during supervision. There were no complaints, objections or untoward incidents reported.

Furthermore, there was a high retention rate (more than 95%) in the trial. This high retention rates points towards the acceptability of the intervention in the community. Literature on psychological interventions for other mental health difficulties supports this, as higher retention rates are positively correlated with acceptability (Ehlers et al., 2005, Milosevic and Radomsky, 2008, Rachman et al., 2008).

The most important finding that came out of the process evaluation was that the adaptations made to the intervention to make it culturally sensitive to the local context appear to have been appropriate. The intervention was developed through a process of frequent consultations with the community and the LHWs. Thus, the content and sketches were easily understood by both the community and LHWs alike. Furthermore the sessions were delivered in a way that the LHWs respected the family dynamics and maintained engagement through a focus on the health of the unborn child, which is a common agenda for all of the family (Rahman et al., 2013a, Rahman, 2007).

Irrespective of where a psychological treatment was developed, it is vital that it is adapted to the local cultural context (WHO., 2008). For example, Dowrick and colleagues adapted an existing

psychological intervention to the local cultural context of underserved groups in the North West of England (Dowrick et al., 2013). Adaptations of this nature increase the acceptability of the intervention in the local context (Patel et al., 2009).

As reported in Section 6.4 the tribal North West region of Pakistan, including Swat, is strongly patriarchal in nature, resulting in a male dominated society (Mohmand and Gazdar, 2007). This had led to women having a very limited mobility and mostly confined to their houses. Therefore, the intervention delivery agents, LHWs, were ideal as delivery agents as they could visit the women in their homes. Furthermore, the prevailing traditions did not allow either the LHWs or other female members of the local community to discuss issues related to pregnancy with men. Issues relating to pregnancy are considered to be a private 'women only' affair and often not even disclosed to the male members of a family. Thus, the involvement of men in the psycho-educational sessions was relatively low, with only a third participating. The active involvement of men is an issue that should be attended to, as in the long run it is vital for the improvement of family support, as discussed in the section above. One possible solution could be that male delivery agents work with the male members in a family – such agents could be already part of the health system (e.g., vaccinators) or volunteers from the community.

To conclude, the current research showed some promising results in the context of a post-conflict setting, of an intervention to raise awareness about perinatal mental health. There was significant improvement in help seeking through LHWs and positive trend in the reduction of the rates of psychological distress during pregnancy following the brief psycho-educational sessions in the community. Due to the pilot nature and small sample of the current study; these findings warrants future research in the current context with better design and a large sample size.

10.2.4. Challenges in conducting research in a conflict affected region

Both studies in the current research were conducted in the context of armed conflict between state military and non-state insurgents. Although the military operation officially ended before the initiation of research, a strong military presence remained throughout the conduct of field activities. This military presence interfered in the daily life in the shape of checkpoints, patrols, and raids on homes. In addition, there were sporadic reports of targeted killing by the insurgents (Dawn, 2012, Haider, 2010) and extrajudicial killings of detained insurgent by the military (Human Rights Watch, 2010, Hasan, 2010, DeYoung, 2010). This continued instability inevitability led to feelings of fear among the local populations. As a result there were important ethical as well as logistical considerations on how I conducted the field research activities. In the next sections, I report on the ethical issues/challenges that arose and how I managed them, further details are described in a paper recently submitted for publication (see Appendix 4).

Field research team

The selection of the field research team was an important task. Firstly, the cultural norms of the area (Mohmand and Gazdar, 2007) are very conservative, for example women must observe strict *Purdah* (veil), therefore the interviewing team needed also to be women. As Craig and colleagues observe, race, gender and culture are important characteristics to consider when seeking to ensure researcher safety (Craig et al., 2000). Matching the research team on these important qualities with the community was a central component of the selection criteria for the team. Furthermore, initial contact and entry into the community in ways that are sensitive to the local cultural norms are recognized as core elements relating to the ethical conduct of research (Citraningtyas et al., 2010), and should be developed with support from local elders, religious

and cultural leaders from the area (ESRC, 2012). Similarly, critical awareness of local area power relations is important while pursuing entry to a community, especially in conflict situations (Hynes, 2003). Having an understanding of the local power dynamics in regions experiencing conflict is important so that the research team can avoid being considered to be one side or the other. These issues were managed by selecting a research coordinator who was a resident in the area of the research activities. His involvement aided the research field team because he was aware of the locality and knew the different streets and locations of houses. He was also able to establish trust with the community because he was already known and respected for being a health worker in the local health department. However, to avoid any possibility of coercion in the recruitment process due to the coordinator's position within the community he was not directly involved in the recruitment process. Instead, his role was to act as a cultural broker between the research and the community, maintaining local community trust.

Another important advantage of having a local team was that their active engagement in the development of the research and intervention was their local knowledge. As mothers from the same cultural background as many of the participants, their understandings and views could be incorporated into the content and delivery of the intervention and research process. This is very important in mental health services research during the affective intervention development and acknowledgment of the local cultural sensitivities is essential especially in research relating to mental health services (Bernal and Saez-Santiago, 2006). In this way, the resulting intervention was in line with the local cultural norms, therefore strengthening the possibility of its subsequent acceptability to the local community.

To summarize, both researcher matching and appropriate entry into the community as key ethical considerations were ensured. Much of the studies success was attributable to a local research team that included a respected research coordinator, and two research assistants who were mothers themselves and from the same cultural background (similar in their dresses, their presentation, language and observance of Purdah (veil)) as the study community. However, the two research assistants, although local from the district, were not personally known to participants. This may have built trust with the participants and ensured confidentiality (Hynes, 2003).

Source of funding for the research

In conflict settings, the source of funding of research can engender positive and negative perceptions of the funding organization in the local populations. In the current conflict, international organizations and other donor agencies were considered by many people to be 'agents' of the West and were often threatened and targeted by the insurgents (Zafar, 2011). Furthermore, these organizations were perceived to be working for foreign rather than local national interests (Ud Din et al., 2012). These widely held views might affect the safety of the research team, if the funding source is disclosed on information sheets, as is standard practice.

In the current study, this was not an issue as the funding source was a National Higher Education funding body (Higher Education Commission of Pakistan). Additionally, participants were approached on behalf of the health department of the district and the research was introduced as a joint venture with the department of health. This led to an increase in the acceptability of the research process. However, it is possible that some participants might have considered this funding and the health department as a route for government authorities to extract information

regarding involvement in militant activity. This again could compromise safety of the research team. Therefore, it is necessary to be aware of the local socio-political context and find a way to address this issue in conflict affected populations. In this study the research coordinator and field research team acted as local experts on the socio-political context, able to advise on community misperceptions of the study and how these could be addressed (discussed in more detail below).

Negotiating Ethical review committees

Ethical review is a central pillar of international guidelines on human participant research (ESRC, 2012, MRC, 2004, CIOMS, 2002). However, many LMICs either do not have ethical review boards or the quality of their work is very poor leading to inadequate ethical research standards (Thornicroft et al., 2012). In humanitarian emergencies the review board oversight for the potential risks and challenges is often incomplete as they may recognize the issues but have little to offer as practical guidance (Zwi et al., 2006). This is also true for research conducted with internally displaced persons (Siriwardhana et al., 2013).

In both of these studies, in-country (Health Services Academy, Islamabad) and University of Liverpool ethical clearance was obtained. These multiple levels of ethical review gave a chance of learning and experience sharing for both institutions. The University of Liverpool, being at a distance from the humanitarian context of the study setting, was suitably informed by the local research ethics feedback, the author and one of his supervisors (also of Pakistani origin and well-versed with the local context).

Voluntary informed consent

Voluntary informed consent signifies the need for human subjects to be informed regarding the nature, implications and their rights relating to the research. Importantly the potential participants have the free will to participate in the research, and are able to decline to take part without penalty or detriment (Belmont Report, 1979). In the context of the current settings in Swat, prior consent and permission from the household males and elders was required before the pregnant women could participate in the research. Gaining the consent of those other than the potential research participant maybe an important cultural adjustment in LMICs, such as Pakistan (MRC, 2004). In these contexts the consent for participation is not directed to research participants but to "gatekeepers", those who take decisions regarding consent on behalf of the potential participant (Homan, 1991). As a consequence there is every possibility that the gatekeeper may not allow participation. This was an important ethical issue in the current settings. To counter this, the field research team was matched with the research participants on many important characteristics, such as gender, culture, locality and importantly they were mothers like the participants. They were trained on obtaining informed consent, importantly emphasizing voluntary participation and the right to refuse to participate at any stage in research without penalty. Furthermore, prior to commencing research activities the study was introduced by the local LHW. The LHW known to those families in her catchment area provided initial introduction of the study in the community and a brief information sheet. The LHW after providing information gave time to the family to discuss with the males/head of the household. After agreeing with the LHW, the research assistants visited the families and reconfirmed the fully informed consent according to the training guidelines and protocols.

Another procedural issue identified in the current study was that due to low levels of literacy, a thumb print was used in lieu of a signature. This is a common practice in the local cultural context with illiterate participants. Alternatives in such scenarios are to either digitally record verbal consent or have a third party, such as another researcher to verify that the participant has consented. Both of these alternatives have ethical challenges specifically in the current settings. Digital recording of the verbal consent from female research participant is not acceptable in many cultures, including Swat settings, because of the general cultural constraint on women's activities and also due to fears relating to confidentiality and, mistrust regarding the way the information would be used. In the case of my study, the alternative option of witnessed verbal consent was not considered because the research assistants worked on their own and not in pairs where there would have been opportunity for verification by a third party. Therefore, I chose to use thumb prints where the participants were not able to read or write.

Nevertheless, research conducted in such settings does carry risk, which needs to be accepted. For example, in the current study on one occasion during data collection, rumors spread that the research team might be collecting information to pass onto the intelligence authorities. This happened in one house that had family members who were active insurgents, and where questions relating to trauma and brain washing were negatively perceived by the family. The family was hostile to the research team and the LHW. Being sensitive to the context, the research process was immediately halted so this misperception could be addressed. The consent process in this case had failed to reassure the family (Homan, 1991). This was despite the information about confidentiality, anonymity and protection of rights being provided in the local language by the LHWs and then by the research assistant. As a result of this experience, research assistants subsequently put additional focus and attention on the potential participant's rights,

confidentiality/anonymity and importantly the participant's free will in agreeing or disagreeing to participate at any phase of the research. In addition, these reassurances were repeated prior to the start of the assessments interviews as the additional part of the informed consent process. This additional explanation was effective in ensuring study comprehension in this context.

As evident from the above, ensuring informed voluntary consent is frequently complex, needing researchers to ensure the quality of consent and the subsequent ethical research practice. This was evident as it was only during the course of data collection that we recognized how much participants comprehended the information during consent process. In such a complex context, ethical standards may include acknowledgement of such situations and a more nuanced view of consent may be appropriate. Furthermore, the researchers must be vigilant to any challenges arising from such misunderstandings.

Community mistrust

As described in the preceding paragraphs there was considerable instability in the region due to incidents of targeted killings and suicidal attacks by the insurgents, and the use of check points, patrols and raids of homes by the state military. The motive for asking the questions about trauma and violence in the research interviews could be misinterpreted, especially by families who had family members active in the insurgency, as a way to collect information for the intelligence agencies (example above). Management of this mistrust was an important challenge and required careful handling. Thus, it is very important to train and equip researchers going into these communities to respond to potential angry reactions and misconceptions (Craig et al., 2000).

In the current research this issue was recognized and addressed right from the planning stage (MRC, 2004) with additional precautionary measures being taken while research was going on. Firstly, as mentioned above, only people local to the community were recruited in the research team. In addition, the research coordinator appointed was respected and known in the area, who gave a lot of his time for social welfare activities, but was not affiliated with any particular stakeholder in the conflict. This was invaluable in challenging the rumors and mistrust of the community. Secondly, as soon any rumors spread the study lead immediately suspended all research field activities to ensure researchers safety. During the suspension period consultative meetings were held with the families along with the local team members. Families were reassured about their ethical rights including their free will to participate or not and the anonymity and confidentiality of information collected was stressed. This consultation and information sharing with families countered the effect of rumors and enabled the research to proceed.

Risk to the research team

There were multiple incidents where there was a possibility of risk to the research team. In research around sensitive topics the researcher should assess the potential impact on the researchers themselves as well as the participants (Dickson-Swift et al., 2007). This could also prevent researcher burnout (Kinard, 1996). As mental health and trauma related questions were asked in the current research; these have the potential of vicarious trauma i.e. trauma while witnessing the hardships of the interviewees (Pearlman and McCann, 1990).

In some of the incidents military raids of homes occurred at the time the research team was conducting interview. Being present while a raid occurred, not only was a fearful experience for

the research team members but made them concerned that the community might then agree with the rumors that the researchers were working with the military. The researchers fear and vulnerability where also heightened by the news that polio health workers had been targeted in other parts of the country. These threats to researcher's safety were managed through suspension of research activities, distancing our research activities from those being targeted by insurgents in other parts of the country. In addition, repeated consultative and information meetings were held with the community to enhance understanding and acceptability of the research process.

The incidents of military raids point towards the importance of proper safety planning to be fully prepared to respond to the consequences these events might have on the researchers. Psychological support referral pathways were readily available as the primary care providers were trained by the district psychiatry department before the start of any field research activities as detailed in Section 3.9. Likewise, in the case of specific high profile events elsewhere the research schedule needs to be flexible enough to accommodate the suspension of activities and separation from the targeted events. Lastly, due to fear of re-traumatization the research process should ensure psychological support referral pathways are already established. A clear and readily available communication pathway was ensured between the primary supervisor, the host supervisor, and the author so that immediate support and advice could be provided if necessary.

10.3. Implications

There is generally a low awareness of mental disorders and stigma in LMICs, which disrupts health services utilization (Rahman et al., 1998). Mental health is not on the priority for policy makers and planners in many LMICs. Therefore, the integration of a short, two session psycho-educational intervention, which addresses awareness and stigma, into the routine work of the LHWs could be attractive to policy makers. Such psycho-educational interventions are advocated in the recent WHO mhGAP guide to be used in non-specialized settings (WHO, 2010). Furthermore, as the mental health of pregnant women is linked with the physical as well as the mental health of the unborn child there is real need to bring maternal mental health further up the healthcare agenda.

The current intervention fits well in the official work of LHWs as they are already deployed in the communities and work house to house during their routine visits. Through this tier awareness regarding common mental disorders can be increased in the families and larger community. This could lead to better service utilization by these families. Therefore quality mental health services should be in place in the primary care setup for referral of cases from the community through LHWs along with referral linkages with higher care levels for management of cases needing specialized care. An improvement in awareness about such conditions could lead to a push in demand for such services.

There are now valid and culturally appropriate screening instruments for mental health assessments, which can be used by LHWs to screen pregnant women during routine visits. In this way, high risk pregnant women could be targeted for the psycho-educational intervention inside

their houses by their LHW. In addition, LHWs could be trained to manage cases of mild to moderate depression (Rahman et al., 2008).

As explained above, the provision of information booklet/brochures to pregnant women by LHWs could be an alternative, cost effective and acceptable way of enhancing the awareness of common mental disorders.

However, in order to integrate this intervention into routine primary health care in Pakistan, further research needs to be undertaken in the ways to integrate them into the training and supervision of the existing LHW program.

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Appendix-1: Instruments and Questionnaires

1A. Identity information

1B. Socio-economic rating by health worker

1C. Personal Information Questionnaire (PIQ)

1D. MSPSS questionnaire

1E. Life Events Check List for Pakistan

1F. Self-Reporting Questionnaire-20

1G. Potentially Traumatic Events

1H. Primary outcome of the trial

1I. Supervision checklist of the trial

1A. Identity information

1) Name of pregnant woman: -

حامله خزي نوم

_____

2) Age of woman (in years):-

د حامله خزي عمر په کالونو کي

_____

3) Husband's and Father in law's name:-

د حامله خزي د خاونداو سخر نوم

_____

4) Age of husband (in years):-

د خاوند عمر په کالونو کي

_____

5) Husband's occupation: - (Encircle as appropriate)

د خاوند پيشه

1) Regular employment
2) Unemployed
3) Working on daily wages
4) Self employed
5) Subsistence farming
6) Other please specify_____

6) Duration of current pregnancy (in months):-

د حمل موده په میاشتو

_____

7) Is there any other pregnant woman in this house: - 0=No, 1=Yes

دکور په چاردیوارئ کي بله حامله شتي؟

_____

7) Does the pregnant woman suffering from any serious medical ailments:-0=No, 1=Yes

If yes then specify

1) Hypertension
2) Diabetes
3) Joints and bone disease
4) Chronic chest conditions
5) Any other please specify_____.

9) Complete address:-

مکمل پته

1B. SOCIOECONOMIC RATING BY HEALTH WORKER

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?

پوچھے گئے فرد کی مالی و سماجی حیثیت کو مندرجہ ذیل سکیل پر ریٹ کریں یعنی جو اس کی آپکے علاقے کے مطابق مالی و سماجی حیثیت کے قریب ترین ہو۔

Richest **1** **2** **3** **4** **5** **Poorest**

1C. PERSONAL INFORMATION QUESTIONNAIRE (PIQ)

Now I would like to ask you a few questions about you and your household. I would also inquire about your income, expenditure and usage of health facilities.

اب میں آپ اور آپکے گھرانے کے بارے میں کچھ تفصیل حاصل کروں گا۔ ان سوالات سے آپکے اخراجات، آمدن اور مراکز صحت کے استعمال کے بارے میں بھی معلوم ہوگا۔

1. How many years of formal schooling did you have? — No. of years

2. How many years of formal schooling did your husband have? — No. of years

3. Is your husband employed? — 0=No 1=Yes

4. If yes, how many months does he remain away from home for employment?

   0 = None
   1 = Less than 3 months
   2 = between 3-5 months
   3 = 6 or more than 6 months
   4 = N/A

5. How many children do you have?

   Total No.

   No. female

   No. male

6. How many of your children are less than seven years old?

7. Has any of your children died from any cause?

   Total No.

   No aged over 5 years

   No aged less than 5 years

No aged less than 1 year

No aged still birth/miscarriage

8. What is the structure of your family?

0 = Nuclear

1 = Joint/extended

9. Does the children's grandmother live with them?

0 = No
1 = Maternal grandmother
2 = Paternal grandmother

10. Does your husband/head of family give you spending money?
If yes, do you decide how to spend this money?

If yes to both rate 1

0 = Not empowered
1 = empowered

1D. MSPSS QUESTIONNAIRE

Now I would like to ask you some questions about support you received from people around you. We would ask you to rate the items below against the scale

اب میں آپ سے کچھ سوال ایسے پوچھوں گا جن سے ہمیں اندازہ ہوگا کہ آپ کو اردگرد کے افراد سے کس قدر سہارا حاصل ہے۔ آپ ان سوالات کا جواب اس سکیل کے مطابق بتائیں۔

provided.

1. very strongly disagree
2. strongly disagree
3. somewhat disagree
4. neither agree nor disagree
5. somewhat agree
6. strongly agree
7. very strongly agree

1.	There is a special person who is around when I am in need. ضرورت کے وقت کوئی ایسا بھروسہ والا شخص ہے جو آپ کو سہارا دے سکتا ہے۔	1 2 3 4 5 6 7
2.	There is a special person with whom I can share my joys and sorrows. کوئی ایسا شخص ہے جس کا ساتھ اپنا دکھ سکھ کر سکتے ہیں۔	1 2 3 4 5 6 7
3.	I have a special person who is a real source of comfort to me. کوئی ایسا شخص ہے جس سے بات کر کے سکون ملے۔	1 2 3 4 5 6 7
4.	There is a special person in my life who cares about my feelings. میری زندگی میں ایسا بھروسہ والا شخص ہے۔ جو میری طبیعت سمجھ سکتا ہے۔	1 2 3 4 5 6 7
5.	My family really tries to help me. میرے گھر والے میری مدد کرنے کی پوری کوشش کرتے ہیں۔	1 2 3 4 5 6 7
6.	I get the emotional help and support I need from my family. میرے گھر والے مشکل میں میرے ساتھ دکھ سکھ اور مدد کرتے ہیں۔	1 2 3 4 5 6 7
7.	I can talk about my problems with my family. میں اپنے گھر والوں سے اپنی مشکلوں اور مسائل کے بارے میں بات کر سکتی ہوں۔	1 2 3 4 5 6 7
8.	My family is willing to help me make decisions. اگر مجھے کوئی فیصلہ کرنا ہو تو میرے گھر والے مجھے مشورہ دینے کے لئے تیار ہوتے ہیں۔	1 2 3 4 5 6 7

9.	My friends really try to help me. میری دوست اور سہیلیاں میری مدد کرنے کی پوری کوشش کرتی ہیں۔	1 2 3 4 5 6 7
10.	I can count on my friend when things go wrong. اگر مجھے کوئی مشکل ہو تو میری دوست اور سہیلیاں میری مدد کے لئے موجود ہونگی۔	1 2 3 4 5 6 7
11.	I have friends with whom I can share my joys and sorrows. میں اپنی دوست اور سہیلیوں کے ساتھ اپنا دکھ سکھ کر سکتی ہوں۔	1 2 3 4 5 6 7
12.	I can talk about my problems with my friends. اگر کوئی مسئلہ ہو تو میں اپنی دوست اور سہیلی سے اس بارے میں بات کر سکتی ہوں۔	1 2 3 4 5 6 7
		Total Score

Instructions: We want to know about the events that you or your family has faced in the last year. Please listen to these questions carefully and answer in accordance to your condition. Thank you.

ہدایات: ہم آپ سے اُن واقعات کے بارے میں جاننا چاہتے ہیں جو پچھلے ایک سال میں خود آپکے ساتھ یا آپکے اہل خانہ یا انتہائی قریبی عزیز و اقارب کے ساتھ پیش آئے۔ برائے مہربانی ان سوالات کو غور سے سُنیں اور اپنے حالات کی مناسبت کے مطابق جواب دیں۔ شکریہ

0=No 1=Yes

1. You yourself or a close relative of yours had been ill or had an accident which led to hospitalization.
آپ خود یا آپکا کوئی قریبی عزیز بیمار رہا ہے یا کوئی حادثہ پیش آیا ہو جسکی وجہ سے ہسپتال میں داخلہ ہوا ہو۔

2. Any of your close relatives died or committed suicide or had gotten seriously ill.
آپکا کوئی قریبی عزیز فوت ہوا ہو یا اُس نے خودکشی کی ہو یا وہ قریب المرگ ہوا ہو۔

3. Has anyone in your family had problems of livelihood? For example unemployment, losing a job or starting new work/job.
آپکے خاندان میں کسی کو روزگار کے بارے میں کوئی مسئلہ درپیش رہا ہے۔ مثلاً بیروزگاری و نوکری کا ختم ہونا یا کسی کا نئی نوکری/کام شروع کرنا وغیرہ

4. You or someone in your family has had any financial problem (e.g. having debt).
آپکو خود یا خاندان کے کسی فرد کو کسی قسم کا مالی مسئلہ (مثلاً قرض چڑھ جانا) درپیش رہا ہے۔

5. You or someone in your family has had a change in social status (e.g. – someone's engagement or marriage, separation or divorce, starting or finishing education).
خود آپکے یا خاندان کے کسی فرد کی سماجی حیثیت میں کوئی تبدیلی آئی ہے (مثلاً کسی کی منگنی و شادی، علیحدگی و طلاق ہونا، پڑھائی شروع کرنا یا ختم کرنا)

6. You yourself have had any problem with your residence (e.g. change of residence or problems with neighbors)
آپکو خود رہائش کے بارے میں کوئی مسئلہ درپیش رہا ہے (مثلاً مکان کی تبدیلی، ہمسائیوں کے ساتھ مسائل وغیرہ)

7. Your relations with any of your close relatives or friends have been troubled (e.g. quarrels or falling out etc.)

آپکے خود اپنے تعلقات کسی قریبی عزیز یا دوست کے ساتھ خراب ہوئے ہیں (مثلاً ناچاقی، ناراضگی وغیرہ)

8. Your marital relations with your spouse have had problems. (e.g. Quarrels or rows etc.)

آپکے اپنے شوہر/بیوی کے ساتھ ازدواجی تعلقات مسائل کا شکار رہے ہیں (مثلاً ناچاقی، ناراضگی وغیرہ)

9. You have been worried about your children's problems (e.g. Problems concerning Children's health and education etc).

آپ اپنے بچوں کے مسائل کی وجہ سے فکرمند رہے ہیں (مثلاً بچوں کی صحت اور تعلیم سے متعلقہ مسائل وغیرہ)

10. You or other family members have had rows/quarrels amongst themselves.

آپکے خود یا خاندان کے دیگر افراد کی آپس میں گھریلو لڑائی جھگڑا/تُو تُو میں میں رہی ہے۔

Self Reporting Questionnaire

(Urdu Version)

اب میں آپ سے بالخصوص آپ کی پچھلے چار ہفتوں میں جو ذہنی اور جسمانی صحت رہی ہے اس کے بارے میں کچھ سوالات پوچھوں گا
اس کا جواب ہاں یا نہیں میں دیجئے۔

ہاں=1 نہیں=0

1. کیا آپکو اکثر سر میں دردیں رہتی ہیں۔
2. کیا آپکی بھوک خراب رہتی ہے۔
3. کیا آپ کی نیند خراب رہتی ہے۔
4. کیا آپ باآسانی ڈر یا سہم جاتی ہیں۔
5. کیا آپ کے ہاتھ کانپتے ہیں۔
6. کیا آپ گھبراہٹ، ذہنی تناؤ یا پریشانی محسوس کرتی ہیں۔
7. کیا آپ کا ہاضمہ خراب رہتا ہے۔
8. کیا آپ کو واضح سوچ بچار میں دشواری ہوتی ہے۔
9. کیا آپ ناخوش رہتی ہیں۔
10. کیا آپکو اب باتاب پر رونا آتا ہے۔
11. کیا آپکو روز مرہ کاموں میں مزہ مشکل سے آتا ہے۔
12. کیا آپ کو فیصلے کرنے میں مشکل پیش ہوتی ہے۔
13. کیا آپ کے روز مرہ کام میں حرج ہو رہا ہے۔
14. کیا آپ زندگی میں مفید حصہ لینے کے قابل نہیں رہے۔
15. کیا آپکی چیزوں میں دلچسپی ختم ہوگئی ہے۔
16. کیا آپ اپنے آپکو بےقدر و قیمت محسوس کرتی ہیں۔
17. کیا اپنی زندگی ختم کرنے کا خیال آپکے ذہن میں آتا رہا ہے۔
18. کیا آپ اپنے آپکو ہر وقت تھکی تھکی محسوس کرتی ہیں۔
19. کیا آپکو پیٹ میں بےآرامی یا تکلیف کا احساس رہتا ہے۔
20. کیا آپ جلدی تھک جاتی ہیں۔

Total

ہدایات

ہم آپ سے آپ کے ماضی اور حال کی علامات کے بارے میں کچھ سوالات پوچھنا چاہتے ہیں۔ یہ معلومات آپ کے علاج میں ہماری مددگار ثابت ہونگے۔ ہوسکتا ہے کہ چند سوالات آپ کیلیئے پریشانی کا باعث ہوں۔ اگر ایسا ہے تو آپ جواب نہ دینے میں آزاد ہیں۔ یہ یقیناً آپ کے علاج کو متاثر نہیں کریگا۔

برائے مہربانی نیچے دیئے ہوئے واقعات یا علامات پر نشان لگائیں جن کا آپ کو تجربہ، مشاہدہ ہو یا آپ نے سنا ہو۔

تشدد کے واقعات

سیریل نمبر	واقعات یا علامات	تجربہ E	مشاہدہ W	سنا ہوا ہے H	نہیں N
1	پانی یا غذا کی کمی				
2	صحت کی خرابی، طبی سہولت تک نارسائی				
3	بے سروسامانی، بے گھر ہونا				
4	قید				
5	شدید زخمی ہونا				
6	جنگ، لڑائی کی حالت				
7	ذہن خالی کردینا (Brain washing)				
8	عصمت دری یا جنسی بدسلوکی				
9	طاقت کے زور پر دوسروں سے علیحدگی				
10	موت کا قریب محسوس ہونا				
11	طاقت کے زور پر گھر والوں سے دور کردینا				
12	خاندان کے کسی فرد یا کسی دوست کا قتل				
13	خاندان میں یا کسی دوست کی غیر طبعی موت				
14	اجنبی یا اجنبیوں کا قتل				
15	گمشدگی یا اغوا				
16	تشدد				

Semi structured guide for outcome assessment

Ask and gently probe each of the LHW in the trial regarding participants of the trial in her catchment area.

A) Did anyone from the pregnant women or their family member, in the trial contact you regarding her health during the previous two months?

   Probes: Who contacted you? When they contacted? Was the pregnant woman herself visited?

B) Why they contacted you?

   Probes: For physical ailments? Mental health? Contraceptives? Medicines?

C) What did you advised them?

   Probes: Did you refer them to the health facility? Did you refer them to any private clinic/ hospital?

1I. Supervision checklist

Name: _____Designation: _____

LHW name: _____Area name: _____

Date: _____ Duration of the session (in minutes): _____

1) Participants of the session: (encircle as appropriate)

a) Husband

b) Pregnant woman

c) Mother in Law

d) Husband's sister

e) Father in Law

f) Other please specify_____.

2) LHW visited the selected household? 0=No 1=Yes

3) LHW started the session on the agreed date and time with the family? 0=No 1=Yes

4) LHW was empathic and supportive?

a) Agree b) Somewhat agree c) Neither agree nor disagree d) Somewhat disagree e) Disagree

5) LHW explained the importance of maternal well-being and foetal development?

b) Agree b) Somewhat agree c) Neither agree nor disagree d) Somewhat disagree e) Disagree

6) LHW talked about each of the ten steps to a happy mother?

c) Agree b) Somewhat agree c) Neither agree nor disagree d) Somewhat disagree e) Disagree

7) LHW used the counselling cards appropriately?

d) Agree b) Somewhat agree c) Neither agree nor disagree d) Somewhat disagree e) Disagree

8) LHW used the illustrations to discuss psychosocial problems?

e) Agree b) Somewhat agree c) Neither agree nor disagree d) Somewhat disagree e) Disagree

9) LHW engaged the whole family?

f) Agree b) Somewhat agree c) Neither agree nor disagree d) Somewhat disagree e) Disagree

Appendix-2: Information sheet and Consent letter

2A. Information sheet (Urdu)

2B. Consent letter (Urdu)

خوشحال ماں صحت مند بچہ۔ دس قدم دور

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 اور اس 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 صحت کے پروگرام کے ساتھ مل کر ایک تحقیق کررہے ہیں اس تحقیق میں ہم یہ جاننے کی کوشش کریں گے کہ حمل کے دوران ماؤں کی صحت بلخصوص ذہنی پریشانیوں کو آگاہی کے ذریعے کیسے دور کیا جاسکتا ہے، تاکہ آنے والا بچہ صحت مند، ہونہار اور ذہنی طور پر ہوشیار ہو۔

طریقہ کار:۔

اگر آپ اس تحقیق میں شامل ہونے پر رضامند ہیں تو آپ سے ماں کی صحت بلخصوص ذہنی پریشانیوں کے حوالے سے کچھ بات چیت کی جائے گی ۔اس سلسلے میں ایک زنانہ ٹیم آپ کے گھر آئیگی ۔اسی تناظر میں کچھ خاندانوں کے ساتھ آپ کے علاقے کی لیڈی ہیلتھ ورکرز دو ووزٹ پر مبنی معلوماتی سیشن دینے آپ کے گھروں میں آئینگی ۔اس سیشن میں گھر کے سارے افراد کو بمعہ مردوں کے شامل کیا جائیگا ۔سیشن کا دورانیہ تقریباً ایک گھنٹے ہوگا۔ کچھ عرصہ بعد انہی گھروں سے کچھ سوالوں کے جوابات لینے کیلئے دوبارہ وہی زنانہ ٹیم وزٹ کرینگی۔

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 ۔آپکو اس تحقیق میں شامل ہونے یا نہ ہونے کا اختیار ہے۔ اگر آپ اس تحقیق میں شامل نہیں ہوتے تو اس صورت میں صحت 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:۔

اس تحقیق میں آپ کی شمولیت رضاکارانہ ہے تاہم اس کے لئے آپ کو کوئی معاوضہ نہیں دیا جائے گا۔ آپ کو دی گئی آگاہی کے بدولت ماؤں اور بچوں کی ذہنی اور جسمانی صحت کی بہتری ہوسکتی ہے ۔

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

ناصر علی خان

فون نمبر

عالیہ خٹک

فون نمبر

اجازت:۔

میں نے یہ فارم پڑھ اور سمجھ لیا ہے اور میں رضا کارانہ طور پر اس تحقیق میں شامل ہونا رہوتی ہوں ۔ میں جانتی رجانتا ہوں کہ مجھے اس فارم کی ایک کاپی دی جائے گی ۔ میں نے رضا کارانہ 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:۔ ----------

شامل ہونیوالے کے دستخط:۔ ----------

تاریخ:۔ ----------

رضامندی لینے والے کا نام:۔ ----------

رضامندی لینے والے کے دستخط:۔ ----------

تاریخ:۔ ----------

Appendix-3: Ethical approval

3A. University of Liverpool ethics approval

3B. Health Services Academy ethics approval (local)

3A. University of Liverpool ethics approval

FW: RETH000526 Committee Comments

Rahman, Atif <Atif.Rahman@liverpool.ac.uk>

You replied to this message on 5/9/2014 9:54 AM.

Sent: Thu 5/8/2014 2:58 PM

To: Naseem Khan

From: Fletcher, Sarah on behalf of Ethics
Sent: 29 March 2012 10:47
To: Rahman, Atif
Cc: Dawson, Halina; Fletcher, Ian; IPHS Ethics
Subject: RE: RETH000526 Committee Comments

Dear Professor Rahman

I am pleased to inform you that the Sub-Committee has approved your application for ethical approval. Details and conditions of the approval can be found below.

In order that this approval is valid, please ensure that you send a signed copy of the final version, with all supporting documentation, to the Research Governance Officer, Legal, Risk and Compliance, 2nd Floor Block C, Waterhouse Buildings, Liverpool, L69 3GL within 5 days of receipt of this email.

Ref:	RETH000526
Sub-Committee:	Physical Interventions
PI:	Professor Atif Rahman
Title:	Development and exploratory evaluation of psycho-educational intervention targetting husbands of women with perinatal depression in a conservative/traditional society of north west Pakistan.
First Reviewer:	Professor Graham Kemp
Second Reviewer:	n/a
Third Reviewer (if applicable):	n/a
Date of initial review:	29/3/12
Date of Approval:	29/3/12

The application was APPROVED subject to the following conditions:

Conditions

1	Mandatory	M: All serious adverse events must be reported to the Sub-Committee within 24 hours of their occurrence, via the Research Governance Officer (ethics@liv.ac.uk).
2	Mandatory	M: the answer to C2f, as the applicants' response explains, should be 'no'

This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Sub-Committee should be notified. If it is proposed to make an amendment to the research, you should notify the Sub-Committee by following the Notice of Amendment procedure outlined at http://www.liv.ac.uk/researchethics/amendment%20procedure%209-08.doc. If the named PI / Supervisor leaves the employment of the University during the course of this approval, the approval will lapse. Therefore please contact the RGO at ethics@liverpool.ac.uk in order to notify them of a change in PI / Supervisor.

3B. Health Services Academy ethics approval (local)

HEALTH SERVICES ACADEMY
MINISTRY OF INTER PROVINCIAL COORDINATION
GOVENMNET OF PAKISTAN

Islamabad the September 9th, 2011

Dr. Muhammad Naseem Khan,
Institute of Psychology, Health and Society
Department of Mental health and Well being
University of Liverpool, U.K

Ethical Approval

Title of Project: Development and exploratory evaluation of psycho-educational intervention targetting husband's of women with perinatal depression in a conservative/traditional society of north west Pakistan

The research proposal titled **"Development and exploratory evaluation of psycho-educational intervention targetting husband's of women with perinatal depression in a conservative/traditional society of north west Pakistan"** was evaluated by the "Ethical Review Committee- Health Services Academy" in its ordinary meeting held on September 6th, 2011; the proposal was reviewed by the committee in details.

The proposal stands **approved** by the committee and researcher is allowed to conduct the research with following conditions:

1. Candidate will intimate the committee for any alteration in any component of the proposal.
2. Candidate must notify the committee immediately in the event of any adverse effects on participants or of any unforeseen event that might affect continued ethical acceptability of the project
3. The Candidate will be responsible to conduct the research in accordance with the guidelines established by the institute.

(Dr. Arshad K. Chandio)
Joint Director/Registrar

Health Services Academy, Park Road, Chak Shahzad, Islamabad, Pakistan
Tel: (92-51)9255590-94,Fax: (92-51)9255591
Email: academy@hsa.edu.pk Website: www.hsa.edu.pk

Appendix-4: Manuscript for publication

Manuscript submitted to the Journal of Public Mental Health

Improving mental health service quality through assessment and research: managing the ethical and human rights challenges inherent to the research process

IMPROVING MENTAL HEALTH SERVICE QUALITY THROUGH ASSESSMENT AND RESEARCH: MANAGING THE ETHICAL AND HUMAN RIGHTS CHALLENGES INHERANT TO THE RESEARCH PROCESS

WORD COUNT: 5,988

Introduction:

The global mental health challenge in low resource settings is widely acknowledged (Khon *et al*: 2004; Patel and Thornicroft: 2009). Where mental health care does exist it can be poor quality, failing to meet international human rights standards (Patel *et al*: 2011; Benatar: 2005; Patel and Thornicroft: 2009). The World Health Organisation (WHO) Mental Health GAP Action Programme (2008) aims to scale up effective services for priority mental, neurological and substance use disorders for which insufficient care exists (Patel *et al*: 2011; Chisholm *et al*: 2007), acknowledging human rights violations resulting from poor quality care (Drew *et al*: 2011).

Consequently, there is an established need to improve the quality of inpatient and outpatient mental health care. Services need to be informed by culturally attuned evidence, and it is through research that an evidence-base is developed (Thornicroft *et al*: 2012). When conducting health research, international human rights and ethical standards must be maintained, requiring attention to the ethical and human rights grounding of the research process.

Human rights and ethical principles of research emerged from a shared history of rights violations stimulating an international human rights regime epitomised by the Universal Declaration of Human Rights (1948), and in medical ethics the Nuremburg Code (1949) and Declaration of Helsinki (1964). Both human rights and research ethics are concerned with normative standards: subjective claims about how humans *ought* to be treated in certain situations. Human rights can therefore be understood as the articulation of ethical demands situated within a framework of other demands that must be weighed and interpreted against one another (Sen: 2004). This paper examines the implementation of human rights and ethical norms in practice, acknowledging they are a product of a certain historical moment arguably premised upon a conception of "human" attributed to Western liberal societies that prioritise the rights of individuals (Swift: 2001) and may clash with non-western conceptions of human rights. As Emerson *et al* (2009) highlight: "the 'is' of those living in the developing world is not the same as the 'is' of those living in industrialised nations, and this is morally significant" (p. 102).

This paper discusses ethical and human rights challenges when conducting mental health research – including assessments – in a post-conflict setting, suggesting possible solutions. This is applicable to the QualityRights (QR) project which as a universal tool needs to be adaptable to complex contexts and populations, ensuring the ethical and human rights grounding of the process it advocates. Whilst appropriate to peacetime, the case study demonstrates deficiencies to the QR guidance when working in conflict or disaster-affected settings in LMIC. This raises questions about the progressive human rights narrative that the QR project ascribes to, calling for a more situated view of human rights and research ethics.

Background:

Low and middle income countries (LMIC) bear an unequal mental health burden (Khon *et al*: 2004; Patel *et al*: 2011). Furthermore, threats to health security resulting from conflict or disaster can exacerbate human rights abuses (Ray-Bennett *et al*: 2010. Thus, LMIC suffer human rights abuses of those in need of mental health care resulting from the failure to meet the right to health (Wolff: 2011) through lack of access to *any* mental health care (Patel and Thornicroft: 2009), as well as from care that fails to meet minimum standards of human rights (WHO: 2012).

The United Nations Convention on the Rights of Disabled Persons ((CRDP): 2006) outlines states obligations to "ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters" (Article 11). This article operates alongside the right to the highest standard of attainable health (Article 25). Consequently, there is a human rights obligation to ensure delivery of effective mental health care during situations of conflict and disaster. Given the exceptional nature of the humanitarian context mental health research is required to build evidence of effective services that can be implemented in a context where mental health conditions may be aggravated by experiences of disaster and displacement (Tol *et al*: 2011).

In response, there have been calls for global mental health action and investment to improve the quality of care (Collins *et al*: 2011), foregrounding mental health sufferers human rights (Patel *et al*: 2011). The QR project is a welcome component of this response that seeks to evidence how human rights standards encapsulated in the CRDP (2006) are achieved and maintained, prioritising the development and implementation of legislation as a fundamental means of rights protection (WHO: 2012). The relative merits and limitations of a legal and policy-oriented response to ensuring minimum standards of human rights have been discussed elsewhere (Gearty:2006; Sen: 2012).

QualityRights Tool Kit:

The QR tool kit integrates a quality and human rights assessment process which aims to: "identify problems in existing health care practices and to plan effective means to ensure that the services are of good quality, respectful of human rights, responsive to the users' requirements and promote the users' autonomy, dignity and right to self-determination" (p. 2). Results and recommendations are intended for application to localised quality improvement and national policy, planning and legislative reform that promotes human rights. Thus, the QR process is considered akin to research involving observation, interviews, review of documentation, and outcome recommendations.

Specifically, the QR tool kit requires establishment of a multidisciplinary project management team who set objectives, guide assessment, and manage reporting and actions. The management team establish the assessment scope and select assessment committee members with mental health, legal and human rights expertise. Committee(s) are trained in the QR tool kit by persons with "relevant expertise" (p.24), i.e. familiar with human rights documents and policies relating to mental health care. Consequently, management of the QR process is comparable to that of a research project, requiring a steering or

expert committee with appropriate expertise to support and direct the project, identification of a research setting and research questions, and recruitment of a research team trained to ensure the study is conducted in a scientifically robust way.

Finally, the QR process similarities to mental health services research is evident in entailing observation of physical facilities and interactions between staff and service users, review of documentation, and the conduct of interviews with service users, family members including friends and carers, and staff. Therefore, the QR process is comparable to a research review of evidence, (ethnographic) observation of practice, and interviews to collect the perspectives of relevant interviewees. Lastly, in line with robust research standards, the QR process seeks data triangulation, verifying key findings across a number of sources.

It is necessary that the QR process be applicable to conflict and disaster settings if the quality of mental health care is to universally meet minimum standards of human rights. Furthermore, in order that the QR project is not undermined, the tool kit must promote minimum standards of ethical research conduct and human rights. Whilst applicable to peacetime contexts, it will be argued that the QR guidelines are deficient for working in conflict- or disaster-affected settings in LMIC. This will be illustrated through a mental health research case-study which highlights ethical challenges associated with conducting research with conflict-affected populations.

QR Tool kit: Guidance for ethical research:

In light of the above, let us consider the QR Tool Kit ethical guidance. The main guidance is Chapter 9: "Prepare Consent Forms and Seek Ethical Approval" and associated Annex 6 "Sample consent forms for interviewees participating in an assessment". Also relevant is Chapter 13: "Interview service users, family members (or friends and carers) and staff".

Chapter 9 and Annex 6 adhere to international standards of ethical social and medical research practice: advocating written informed consent, emphasising anonymity and confidentiality to protect participants from repercussions as a result of participating in the study, and formal ethical approval in countries which require it. Thus, these sections address ethical research practice formalities.

Chapter 13 considers practical steps in selecting interviewees, finding a suitable interview location, allowing a trusted person to attend if requested by the interviewee, making efforts to overcome language and communication barriers, key qualitative interviewing techniques, being attuned to interviewee distress, and reporting abuse. Thus, this chapter seeks to anticipate considerations involved in conducting qualitative interviews to ensure that ethical research practice is upheld, centrally addressing the principle: do no harm (The Belmont Report: 1979).

Finally, Appendix 4 outlines the QR tool kit human rights themes drawn from the CRDP to be addressed in interviews:

1. Right to an adequate standard of living (Article 28);

2. Right to enjoyment of the highest attainable standard of physical and mental health (Article 25);
3. Right to exercise legal capacity and the right to personal liberty and security of person (Articles 12 and 14);
4. Freedom from torture or cruel, inhuman or degrading treatment or punishment and from exploitation, violence and abuse (Articles 15 and 16)

Thus, the themes include potentially controversial topics such as suffering exploitation, abuse, discrimination and deprivation of liberty.

This brief overview identifies that the tool kit adheres to formalities of universal human rights and ethical standards of research practice, with some consideration of cultural context (i.e. language barriers). As the following discussion highlights, however, these generic considerations are inadequate to manage ethical issues arising in complex contexts, challenging the human rights grounding of the QR tool kit process.

Case study:

The case-study outlines a mixed-methods mental health research project conducted in a conflict and natural disaster affected region of South Asia. It is drawn from reflective discussions with the research lead, academic supervisor, and local research team. Details have been abstracted to ensure confidentiality and anonymity of the research team and protect on-going activities in the research site.

In line with the QR process, this project targeted a distinct population – perinatal women – through a community health centre in one district of a South Asia country. Research involved a qualitative assessment, baseline quantitative prevalence survey, developing and delivering an intervention, conducting an exploratory randomised control trial, and follow-up qualitative interviews. Research was conducted over two years by a local research team resident in the research site, trained and supervised by experienced senior mental health researchers from the South Asia country. The project received full in-country and UK University ethical approvals.

Research was conducted in the context of armed conflict between military and non-state insurgents. Military operations officially ended prior to study commencement, but a strong military presence remained with military checkpoints and patrols – including raids on homes of suspected insurgents. The community was known to contain active insurgents, and insurgency activity continued with isolated incidents and publicised threats perpetuating regional instability. Consequently, threats to health security were present throughout the research, with this context and experiences of the population interacting to produce a number of ethical challenges.

----------BOX START----------

The case study concentrates upon the management of six key ethical challenges that arose in the conduct of research, most frequently qualitative interviews - thus could potentially arise in the QR assessment process.

1. *Who carries out the research?*
   Who conducts research affects access to participants, acceptability of the research team, possible responses to participant paranoia and mistrust, and carries implications for research capacity-building. This research was led and conducted by a locally-based research team, living in the community being researched. Locally hired researchers included two mothers, thereby incorporating members of the target population as researchers. Research supervision was conducted by nationals of the South Asia country experienced in humanitarian mental health research.

2. *Who funds the research?*
   The question of who funds research is important for disclosure of research funding required for ethical informed consent, and for management of competing research agendas and priorities of outside agencies unfamiliar with local context. Funding for this study came from a national Higher Education funding body equipped with local knowledge of the research site and able to judge the study appropriateness for the target population.

3. *Ethical review:*
   Ethical review is an essential step in verifying the ethical grounding of proposed research. In-country and host institution (UK University) ethical approval were obtained prior to study commencement. Local in-country ethical review was required prior to obtaining UK University ethical approval, deferring to local assessment of the proposed research.

4. *Ensuring informed consent:*
   Voluntary written informed consent of female participants was required to participate in the research. Due to illiteracy rates a thumb print was accepted in lieu of a signature. Cultural norms require prior consent of "gatekeepers": for females to participate prior consent from household males and elders must be obtained to then seek voluntary informed consent of the female participant. This required gaining gatekeeper consent through initial information events, followed by a further information event to obtain informed consent of the female participant. Information included what participation entailed, how information would be used including protection of participant anonymity, and that personal information would remain confidential to the research team. Opportunity for questions and discussion was provided, written information in the local dialect was offered, and duplicate consent forms were left with families. These events were flexible, conducted repeatedly where required. Consequently, culturally adapted consent processes sought to ensure that consent was informed, voluntary and adhered to ethical standards of research conduct.

5. *Paranoia and community mistrust:*
   The qualitative assessment sought unbiased data reflecting target community views on which to base design, delivery and evaluation of a culturally acceptable and appropriate intervention. In order to pre-empt the potential impact of community paranoia and mistrust leading to misinformation provided on the basis of securing perceived benefits, the research was designed in consultation with local community representatives from the outset. Furthermore, when going to community homes the research team were confronted with traumatised families fearful for their

safety. During the quantitative interview phase community paranoia led to rumoured threats against the research team as a result of questions relating to trauma and exposure to violence. With families active in the insurgency these questions were interpreted as collecting information to pass onto intelligence forces. Community rumours impacted upon participant recruitment and increased risk to the research team. Both challenges were responded to through re-engagement with the community, outlined below.

6. *Managing risk to the research team:*
   Due to military presence there were incidents where military raids of homes occurred whilst interviews were being conducted. Research team members present during raids remained fearful for their safety. Furthermore, high profile insurgent activity targeting women and health workers led to a break in the research as a precaution to protect researchers. Consequently, risk to the research team was managed by "pauses" to research activities during which time the study lead re-engaged with the community through repeat information events to enhance comprehension of the study purpose, why the information was being collected, and who had access to this information. Community re-engagement sought to ensure the local context presented low threat to the research team's safety. Participant safety is the guiding first principle of research: Do no harm. This was applied to both research participants and the research team, determining management of ethical challenges inherent to conducting mental health research in a post-conflict setting.

This brief case-study highlights ethical challenges integral to the conduct of research - in particular interviews - with conflict-affected populations. None of these arose as a result of controversial practices or interviewing techniques, but rather are a product of the complex context in which research was undertaken. Consequently, the themes identified can be considered applicable to any study conducted in a conflict-affected or unstable context, and could arise in assessments following the QR tool kit process.

----------BOX END----------

Maintaining ethical and human rights standards:

This section addresses the challenges raised by the case-study, situated within wider ethical and human rights standards of research practice. Discussion examines the QR tool kit position to critique the human rights grounding of the process it advocates. We conclude by considering the benefit of empirically studying the experiences of researchers in attaining ethical and human rights standards of research.

1. *Who does the research?*

Craig *et al* (2000) identify race, gender and culture as potentially impacting upon researcher safety in certain contexts, citing violent contexts in particular, advocating matching these and other important characteristics of the research team with the community being researched during the study design phase. This process was undertaken in the case study, and much of the study success is attributable to a

research team comprised of locals from the area, increasing their acceptability to the local community, and strengthening credibility by building mutual trust and understanding. The quality of social research depends upon gauging an appropriate distance between researcher and participant – neither too familiar nor too distant (ibid). Often the "appropriate" distance is a product of adherence cultural norms operating in social settings, and therefore achieved best by those who share the same cultural background.

Who conducts the research has implications for research capacity building, defined as the ability to conduct, manage, disseminate, and apply research in policy and practice (Thornicroft *et al*: 2012). A LMIC mapping project identified gaps mental health research capacity at every level: individual, institutional, organisational and national (Sharan: 2007). Consequently, the benefits of capacity building within local communities should not be underestimated (Perrey *et al*: 2009; Benatar: 2005), equipping local communities with the skills and knowledge to conduct locally relevant research.

In this context, the QR tool kit advocating a management team comprised of nationals with relevant expertise, and recruitment of a research team whose capacity to conduct assessments is developed through training is considered appropriate. However, ethical considerations to match the research team and participants and ensure "ethical entry" into a community (Citraningtyas *et al*: 2010) are not addressed. Furthermore, the ethical grounding of assessments is not guaranteed through the omission of research assessment expertise on the management team.

2. Who funds the research?

The term Philanthropic misconception (Ahmad and Mahmud: 2010) describes the mistaken belief of philanthropy that the primary aim of research is human welfare and promotion of the best interests of the population, rather than the research itself. In this context, the benefits / risks ratio for research participants is important, for example where research leads to recommending a specific medication or intervention. Furthermore, who funds the research can lead to positive or negative views of the study depending upon participants perceptions of outside agencies, particularly where Western governments fund research in non-Western contexts. This can impact upon researcher safety if funding agencies are perceived as hostile to local community interests.

Schopper *et al* (2009) highlight Médcines Sans Frontières (MSF) ethical concern to ensure "reasonable availability" of an intervention post-research, meaning either MSF commit to deliver an intervention for a minimum of 2 years, or that it remains available through other means such as the Ministry of Health. Moreover, MSF have conducted research which at the time was an expensive response to a problem in the expectation that through lobbying and advocacy the price will reduce, thereby making research recommendations affordable (ibid). These considerations carry ethical implications for research funding, addressed by the *International Ethical Guidelines for Biomedical Research involving Human Participants* "Ethical Obligations of External Sponsors to Provide Healthcare Services" (CIOMS: 2002) which identifies as "morally praiseworthy" (p.82) the sponsor funding services beyond the duration of research, with commitment to do so outlined in research protocols; guidance reflected elsewhere (MRC: 2004).

The QR tool kit considers how assessment results will be used, identifying macro-policy priorities alongside micro-quality improvement plans. Joint agreements prior to commencing assessments are recommended as a tool for inviting services into the process as partners, encouraging ownership over meeting human rights standards (p. 40). This conforms to the ethical maxim "no survey without service", delivering localised benefits concurrent to policy and legislative reform. However, the policy and legal process can be lengthy, meaning participants may not see the research impact which can create poor perceptions of participating in research. Furthermore, services with negative assessments may close-off to external input and scrutiny, resulting in unfair burdens on those who mistakenly believed participation would lead to improvements for their situation. Consequently, the QR process can be interpreted as prioritising advancement of systemic legal solutions, rather than meeting immediate needs of service users, returning to the notion of Philanthropic Misconception.

3. Ethical review:

Research ethics review is a cornerstone of international guidelines on human participant research (CIOMS: 2002; MRC: 2004; ESRC: 2012). Lacking or dysfunctional institutional review boards in many LMICs are recognised to contribute to inadequate ethical research standards (Thornicroft *et al*: 2012). Challenges ranging from review boards' legal status, workloads, and personnel and procedures are identified as factors contributing to disparities in ethical review processes (Perrey *et al*: 2009).

Complex difficulties with ethical review committees in LMICs have been discussed elsewhere (Coleman and Bouësseau: 2008; Perrey *et al*: 2009), with developing capacity frequently highlighted, seeking to ensure reliable and transparent interpretation of international ethical guidelines to specific socio-economic and cultural conditions (Milford *et al*: 2006). This concurs with MRC guidelines which advocate in-country review to judge "ethical acceptability of the research in accordance with the customs and traditions of the community", supporting committees inclusion of lay persons to represent community cultural and moral values (2004: p.6).

Advocating formal ethical review is premised on the view that when conducted well feedback can be instrumental in ensuring research design and planning maintain ethical and human rights standards. Taking into account the QR aim of promoting international standards of human rights, its ambiguity in stipulating formal ethical review where required, in accordance with national policies and procedures (p.26) is surprising, opening the door to potentially unethical research.

4. Ensuring informed consent:

Informed consent is a guiding norm of ethical research practice: human subjects *should* be informed about the nature and implications of research, their rights in the research process, and that participation is voluntary. It arose from legal standards on physician duty towards research participants, and contemporary moral theory which conceptualises the autonomous patient as subject (Faden and Beauchamp: 1986). It is premised upon the moral notion that rational people will choose to do what is good for them (Rorty: 1993). Homan (1991: p71) identifies four elements to voluntary informed consent:

1. All pertinent aspects of what is to occur and what might occur are disclosed to the subject;
2. The subject should be able to comprehend this information;
3. The subject is competent to make a rational and mature judgement;
4. The agreement to participate should be voluntary, free from coercion and undue influence.

The QR tool kit considers informed consent under "the right to exercise legal capacity and to personal liberty and the security of person" (CRDP: 2006, Articles 12 and 14), addressing the formalities of voluntary informed consent. As the case study demonstrates, even with culturally adapted informed consent difficulties can arise, in particular the perception that interviews might be collecting information to pass onto intelligence authorities. This can impact upon recruitment as potential participants refuse to consider participating because of perceptions that research is a guise for collecting information for government agencies.

Research guidelines recognise the informed consent process in LMIC carries additional cultural considerations, including the issue of gatekeepers (MRC: 2004, p.7) and differing conceptualisations of ethics and rights (ESRC: 2012). Homan (2001) identifies that consent through gatekeepers is frequently directed not at research participants, but at those who take decisions on their behalf. This observation is pertinent to research subjects considered to lack capacity to consent for themselves, such as children and those with severe mental health conditions, and can be extended to gatekeepers where denial of capacity can occur when decisions rejecting the right to participate are made. Under this circumstance the individual is unable to exercise their right to seek, receive and impart information (CRDP: 2006, Article 21) and to make an informed choice to participate (Article 30). Capacity relating to mental health status is legally enshrined in the human rights norm that no person will be deprived of their liberty unlawfully or arbitrarily, and any deprivation of liberty is in accordance with the law and promotes the best interests of the individual (CRDP: 2006, Article 14). When considering the above gatekeeper scenario it is apparent that denying the right to participate in research is against the best interests of the individual (CRDP: 2006), and therefore denial of a basic human right.

Chambliss (1993) suggest informed consent "represents at best a polite fiction" (p. 651), particularly in the humanitarian context (Ahmad and Mahmud: 2010). When considering power, education and status disparities between participants and researchers, and between female research participants and elder male and female gatekeepers, this description captures the case study consent process. Furthermore, threats to the research team indicate that whilst consent was culturally adapted it may be unreliable when undertaken with an illiterate population affected by conflict. Despite providing information in the local language, attempting to overcome illiteracy through verbal explanations of the research, and using a thumb print in lieu of a signature, rumours of threats to the research team call into question how far principles of confidentiality, anonymity, and protection of participant rights was understood.

Accordingly, the case study consent process failed to meet Horman's (1991) element 2: that subjects are able to comprehend the information. This raises a critical ethical dilemma: how to ensure information is fully comprehended at the time of obtaining consent? Moreover, what are the implications for consent

should it transpire that information was not fully comprehended? These are critical issues which strike at the heart of the principle of informed consent. Various strategies for managing these in LMIC have been proposed (Fitzgerald *et al*: 2002; Tekola: 2009; Schopper *et al*: 2009) but no consensus has emerged. Furthermore, concerns relating to the way information is constructed and presented have been raised (Tekola: 2009), with Molewijk *et al* (2003) highlighting implicit normativity inherent to the production and presentation information, with implications for fact / value distinctions and moral concepts of personal autonomy and choice. This again brings us to Ahmad and Mahmud (2010) who consider the question of research benefits – participants or researchers themselves?

The ESRC (2012) consider different cultural conceptualisations of ethics and rights, including principles of self-determination, choice, and consent. These strike at debates around individual conceptions of human rights: the understanding of "human" that confers moral rights and responsibilities (Donnelly: 2003); whether individualistic human rights are a universal moral goal or if collective rights may be more appropriate (Sandel: 2005; Bell: 2005); and if there are alternative foundations upon which to base normative claims, such as an ethic of care (Held: 2006; Tong: 2001). It is not possible to discuss these widely debated issues, but it is important to emphasise critical awareness to the legal, social and philosophical underpinnings of the international human rights movement (Kennedy: 2004) that the QR process ascribes to.

Following the progressive narrative that QR ascribes to feminist intersectionality has been suggested as a framework for health research, highlighting how multiple forms of oppression can produce a cumulative discriminatory impact unexplained and different to a single form of discrimination (Rogers and Kelly: 2011). This acknowledges the impact of keeping those affected by multiple forms of oppression on the margins of society, health, and research. Rogers and Kelly (2011) site Weber (2006) highlighting that participation of researchers in the subjective worlds of participants can reveal knowledge related to health disparities and systemic inequalities. This view concurs with Tong (2001) who advocates for a feminist global bioethics in healthcare that structures and organises itself to serve men and women equally through the creation of safe moral spaces for the articulation of experience. This is an encounter inherent to the research process that the QR tool kit fails to attend to, and that could enhance its effectiveness. The impediments to implementing policy and law in specific contexts may be overcome by understanding social injustice and inequalities, providing contextual understanding to ensuring human rights. These approaches seek to join micro- and macro-levels of oppression, promoting a situated approach to revealing and understanding moral inequity and developing social action. It is argued that these approaches correspond to the QR process human rights advocacy aim, moving beyond it by attending to the *process* itself, considering wider systems of social injustice and inequity that impede realisation of human rights.

As a central tenant of ethical and human rights respecting research practice and mental health care, attempts to ensure voluntary informed consent is required when engaging with vulnerable research participants or patients. As the case-study identifies, the practice of ensuring voluntary informed consent is frequently more complex than the QR document suggests, requiring practitioners and

researchers to balance and judge the quality of consent to ensure ethical and human rights respecting research practice. As a tool kit that seeks to promote universal standards, further discussion or direction to resources to support consideration of the potential cultural and contextual adaptations required for consent processes to remain robust would be welcome. This may include acknowledgement of situations where it may not be possible to obtain informed consent, and how this can be managed: whether a more nuanced view of consent may be appropriate with alternative guarantees of ethical and human rights standards, or if research cannot proceed in the absence of informed consent.

5. *Paranoia and community mistrust:*

Managing paranoia or mistrust over the way information is to be used requires careful handling in communities exposed to violence and conflict. Craig *et al* (2000) identify that it can be necessary to equip researchers with tools to respond to strong feelings or angry reactions to research. This is not addressed in the QR tool kit, despite its focus upon subject matter known to evoke discrimination and abuse. In the case study research was suspended whilst community paranoia and mistrust leading to allegations relating to how information was to be used were addressed by the study lead, a precaution that sought to ensure researcher safety and prevent rumours spreading.

As advocated by Schopper *et al* (2009), at minimum communities should be consulted during the research planning stage, on an ad-hoc basis whilst the research is conducted, and provided research findings in an appropriate format. In addition, care to distinguish between the provision of routine care and participating in research (ibid), in order to avoid therapeutic misconception (Appelbaum *et al*: 1982) is essential to reducing community misperceptions. The case study moved beyond a consultative approach by integrating members of the target community into the research team to enhance communication, combating paranoia and mistrust.

6. *Managing risk to the research team:*

Researchers investigating sensitive topics need to assess potential risks research poses to both participants and researchers (Dickson-Swift *et al.*: 2007). This is conducted through the formal process of developing a research protocol including budgeting and planning for responses to managing risk to participants and researchers.

The ethical duty to protect the research team is highlighted in the incident of a military raid on a home whilst a research interview was being conducted, reinforcing the necessity of being fully prepared to respond to potential events prior to conducting research. Psychological support referral pathways for research teams are essential when conducting research in complex contexts, with populations exposed to violence or trauma, or where upsetting or difficult disclosure may arise. Furthermore, in the case of high profile events it is important to be flexible in the research schedule, suspending research activities to not coincide with activities of a similar nature targeted by insurgents. This carries further ethical implications when projects are externally funded, as hostile activity may prevent a study being concluded.

This issue has been addressed with suggested protocols for managing researcher safety (Paterson *et al*: 1999), including from psychological harm (Dickenson-Swift *et al*: 2007). Safety concerns range from threats to physical safety; risk of psychological trauma or distress; the potential to be in a compromising situation in which accusations of improper behaviour may arise; and increased exposure to general risks of everyday life such as infectious illnesses or accidents (Craig *et al*: 2000). Furthermore, recognition of the potential emotional and psychological impact discussing sensitive topics can have upon researchers is important to preventing researcher burnout (Milling-Kinard: 1996). Mental health and trauma-related questions may lead to vicarious trauma: traumatisation through the act of bearing witness to the suffering of interviewees (McCann and Pearlman: 1990), whilst respondents may be retraumatised by evoking memories to answer such questions. Equally, failure to ask such questions results in an incomplete picture of mental health status and may miss cases of abuse or degradation, hence are considered unethical not to ask.

The potential for disclosures of abuse in the QR process is high given one of the themes is directly concerned with freedom from torture, cruel, inhumane or degrading treatment or punishment and from violence, exploitation or abuse (CRDP: 2006, Articles 12 and 14). The QR tool kit suggests the photographing of evidence of physical abuse, with participant informed consent (p.26, and Annex 6: "Consent for photographs to be taken during the interview"). This activity could place the researcher at risk of repercussions from organisation staff, or from family members or friends distressed at disclosures of abuse if present during interviews. Strategies for managing these situations are suggested at the level of reporting cases of abuse, however, safety of researchers conducting assessments is not considered, leaving them in a potentially vulnerable position.

As Dunn (1991) highlights "the novice researcher is usually taught that the research process is orderly and straightforward" (p.388). This charge could be levied at the QR process in its simplified overview of the assessment process. Whilst it is accepted that it is impossible to address every possible eventuality, there are some clear risks present when conducting assessments that are not considered.

Conclusion:

Some key ethical considerations when conducting research in complex contexts or with complex populations have been highlighted through discussion of a relevant mental health case study. These are in no way unique to the context in which the case-study was conducted, although the potential risks were higher than could be expected in peacetime. They are furthermore not exhaustive, but seek to outline some central considerations encountered.

As a universal tool kit to aid assessment of all mental health care settings, it can be expected that the QR tool kit be adaptable, able to manage broad issues of researcher safety and informed consent. In particular, where recommendations are intended to support policy and practice it is imperative that these are grounded in an ethical and robust process, where the human rights of both participants and the research team have been promoted and protected.

As demonstrated, reflection upon empirical evidence of research practice can stimulate important ethical and human rights considerations. Through examination of a case study empirical ethics approaches can critically consider background assumptions of moral principles, such as informed consent (Molewijk *et al*: 2003). Given the range and type of ethical concerns raised in this paper, it is suggested that further investigation through an empirical ethics lens could support better understanding and management of the ethical and human rights implications integral to conducting mental health research. In this context, most frequently missing from assessments and research reports are the experiences of those on the ground conducting research activities, "too little attention is given to documenting the process of carrying out research" (Milling-Kinard: 1996, p.69). Furthermore, it has been highlighted that most situations implicate a number of ethical principles and a process of judgement in assessing the relative weight to be accorded each principle is employed (Emmanuel *et al*: 2004). To render these processes explicit would enhance learning, promoting ethical and human rights standards of research practice.

Therefore, we call for increased empirical evidence that critically considers the ethical difficulties in undertaking research and assessment. In this way, global initiatives can contribute empirical evidence to develop situation-based ethics to promote ethical and human rights standards to underpin research and assessment processes worldwide. This would ensure that the ethical obligations of researchers, and the human rights of research participants meet international standards of research conduct, and that the resulting evidence is a product of ethically sound and robust research conduct that promotes human rights.

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Appendix-5: Training manual and counseling cards

5A. Training manual for LHWs (English)

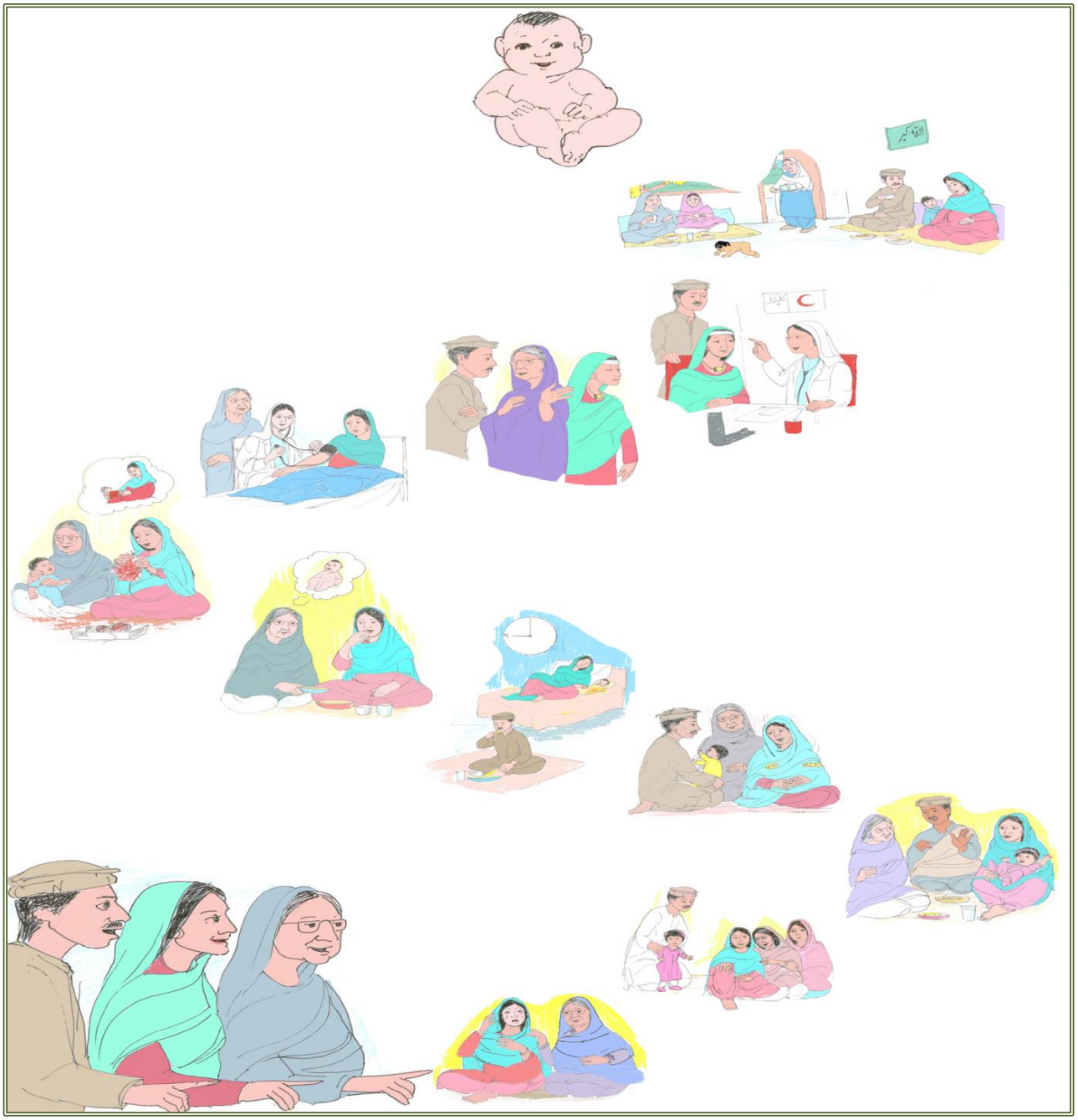
5B. Training manual for LHWs (Pushtu)

5C. Counselling cards for LHWs (Pushtu)

5A. Training manual for LHWs (English)

Happy Mother Healthy Child in Ten Steps

Psycho-education about Peri-natal depression for the families in Swat



Human Development Research Foundation

UNIVERSITY OF LIVERPOOL

Introduction: **Happy Mother Healthy Child in Ten Steps**

"Happy mother Healthy Child in Tens Steps" is a psycho-education which aims to raise awareness of Pre and Post natal depression among families. We are expecting that all family members will understand its importance and will take proper care of mothers during pregnancy and following child birth. This will also improve routine medical checkups and through recognizing the signs and symptoms of depression families will seek medical help for the mother.

What is pre and postnatal depression: In order to deliver the intervention effectively it is very important for LHWs to understand what pre and postnatal depression is? We all are familiar with the word depression and it is used quite commonly in our day to day conversation these days. At times we all get sad, unhappy and tearful however if these feelings start interfering with our lives and last for more than two weeks then it could be a sign of depression. Depression can affects the way we eat (eating less or more than usual), sleep (sleeping less or more than usual) feel (sad, angry, frustrated, irritable, unhappy, guilty), and think (e.g. I am good for nothing, life is miserable).

Pre and Postnatal depression (PND) is a depressive illness that occurs during pregnancy or after having a baby. It is common for women during pregnancy and following child birth to experience a period of 'low' mood. When these sad feelings last only for few days and then disappear, it is called 'baby blues'. However if a mother is feeling low in mood for more than two weeks it could be pre and post natal depression. It is very common and affects roughly 1 in 4 mothers in Pakistan.

The common symptoms of pre and post natal depression includes insomnia, crying spells, loss of appetite, aches and pains, fears and apprehensions (fear of dying during child birth, worrying about children being taken care of in case of their death), irritability, anger bouts, withdrawal (not wanting to talk to anyone), tiredness, lack of motivation (struggling to do house work) and loss of interest (not wanting to do anything).

It is important to remember that pre and post natal depression is an illness like any other illness which can be cured with proper care and attention. Families can play a vital role in looking after mothers who have pre and postnatal depression and help them get better.

Delivering the intervention: Through our previous work we have established that the best way to convince families to look after mothers is through focusing on their children and making them understand the link between mother and child health and wellbeing. We are hoping to use the same approach in "Happy mother and healthy child in Ten Steps". We will make children the focus of our attention and we will stress in each and every step how it is going to benefit the child.

There are three stages of this intervention. They are

Stage 1: Engaging with the family

Stage 2: Shifting attitudes

Stage 3: Taking steps towards happy mother and healthy child

1st Visit

Stage 1: Engaging with the family

In order for families to receive "Happy mother and healthy child in Ten Steps" psycho-education we need to engage with them. This is not always easy, especially in families who are very traditional, less educated or experiencing intense socio-economic problems. However there are certain tips which could help you to engage with the families.

1. **Trusting your own abilities**: You are a trained LHW and you are familiar with the families in your catchment area. You have worked with them in the past and your contacts and experience will guide you to approach and engage with them effectively. Keep trusting your ability to do so.

2. **Trusting the families**: No matter what educational or socio-economic background these families have come from, they all are interested in the wellbeing of their children. You need to inform them that your aim is the well-being of their children. You are there to give them information which will help them to make right decisions for the benefit of

their families. You keep your trust in the families' good will and this will help you to engage with them.

3. **Involving the whole family**: We would like the whole family to receive the psycho-education; therefore it is important for you to visit the family when all or most members of the family are present. Some families might not understand why they all needed be present during the meeting. You can tell them that children are the responsibility of the whole family –not just one or two persons in the family and therefore they need to work together as a family for the wellbeing of their children. Remind the families that there will be no private discussion in the session and information about general physical and mental health will be provided.

4. **Introducing the intervention**: You will introduce the intervention by telling its name Happy Mother Healthy Child in Tens Steps first and then by highlighting its importance for the children in their families. You can say that **our children are our future (Humaray bachay humarah mustakbil).** We all want our children to grow up healthy, happy, wise and be prosperous in life. They are our next generation; we love them and care for them. Tell them that you will be giving them some of the information today and some in your next visit. This information consists of 10 steps. Each step has a well-being message for the whole family. Each visit is one hour long and it will be appreciated if all members of the family are present in your next visit as well.

5. **Checking the family understanding**: It is important for you to check with the family if they have understood what you are saying. Do they agree or disagree with what you have said so far. Are there any questions they want to ask you? Are they happy to listen to what you are going to say next? This will help the family to clarify any ambiguities and will set the ground for you to deliver the information.

Stage 2: Shifting attitudes

Shifting attitudes is a challenging process. You will be taking a gentle approach, in a completely non-threatening way. You are not there to question or challenge their existing practices neither are you there to find any imperfection in their day to day ways of living.

The only reason you are there is to give them information on child and mother wellbeing. It is very important for you to stay constructive and keep your focus on what can be done. You need to avoid getting into any arguments about poverty, job losses, deaths etc. You can tell them

that you cannot change their life circumstances; you are there only to tell them what is helpful for the child and mother wellbeing. It is up to them how they want to use the information.

Given below are some instructions which will guide you to gently approach the subject.

1. **What you are already doing for your children**: You could start by appreciating them on all the things they are already doing for their children and families. You can say that all members of the family play vital role in the upbringing of the child. The wisdom and experience of the grandparents, love and commitment of parents, care and guidance of uncles and aunts- help the child during his/her developmental stages. You need to say that you recognize all the efforts which the family is making to ensure that their children grow up as a successful, healthy and happy adult.

2. **What more you can do**: You can say to the family that when a child is born she/he brings lots of happiness and blessings for the family. Families start caring for them from the day they are born. However a child needs to be taken care of even before birth while in her/his mother's womb. This could be done through taking care of the mother who is carrying the baby. Now you have to explain to them why it is important to take care of baby when in mother's womb (points below) and also why continue taking care of mother once the baby is born.

3. **Why do you need to look after the mother?** You need to stress on each and every point below to help the families understand the importance of taking care of mother.

   - ✓ A child when inside her/his mother's womb needs healthy mother to grow properly and born healthy. A child who is born healthy in this world has a better chance of surviving and fighting with illness later in his/her life.
   - ✓ Several researches in Pakistan and other parts of the world have proven that child's health is closely linked to his/her mother's health. Therefore if you want your child to be happy and healthy, you as a family need to make sure that the mothers are being well looked after.
   - ✓ Our religion has also stressed on taking care of the mothers when they are pregnant and when they have young babies. Also according to our religion pre and post natal is a delicate period for mothers. The husband, relatives and friends should all take care of mother at all times. (Quote from Quran)
   - ✓ A child whether it's a girl or a boy is a God's gift to the family and needs to be raised with love and kindness. If you are undermining a girl you are undermining a God's

gift to your family. Therefore a mother whether she has given birth to a boy or a girl needs to be looked after well.

- ✓ Taking care of the mother is the family's responsibility just like taking care of the baby. Therefore for the benefit of the baby it is your responsibility to give mother extra care and attention during and after pregnancy.

4. **How can you take care of the mother? (Identifying the signs of distress)** Tell the family that they can take care of the mother by making sure that she is physically and emotionally well. Sometimes mothers when they are pregnant or soon after giving birth starts feeling unwell.

Tell them that

- ✓ It is common for mother during pre and post natal period to experience distress.
- ✓ One out of four mothers experience mental distress during or after pregnancy.
- ✓ Mother is not faking her symptoms; she might be in a real distress.

Ask them if any member of their family has recently experienced or is experiencing;

- ✓ insomnia
- ✓ crying spells
- ✓ loss of appetite
- ✓ aches and pains
- ✓ Fears and apprehensions (fear of dying during child birth, worrying about children being taken care of in case of their death)
- ✓ irritability
- ✓ anger bout
- ✓ Withdrawal (not wanting to talk to anyone)
- ✓ tiredness
- ✓ lack of motivation (struggling to do house work)
- ✓ Loss of interest (not wanting to do anything)

If they said yes, appreciate them for being vigilant in identifying the symptoms. However if they say that no one in their family is experiencing mental distress, you tell them that you want to give them the information because this knowledge might benefit their family in other ways.

Ask them if they have any questions (Refer to your frequently asked questions-if needed). Confirm with them the time and day of your next visit. Remind them that you are expecting the whole family to be present during your next visit. Thank them for listening!

2nd Visit

Stage 3: Taking steps towards happy mother and healthy child

Briefly remind the family the salient points covered in your previous visit. Remind them the link between mother and child health. Ask them if they have any questions. Avoid getting into any arguments with the family. Remember to stay constructive and keep your focus on what can be done. You cannot change their life circumstances-you are there to give them information.

Once the family has understood the link between mother and child health you will tell them about the following 10 steps**.** It is important to tell them that they are only ten steps away from mother and child well-being. These steps are simple and achievable if all family members will work together and it will benefit whole family.

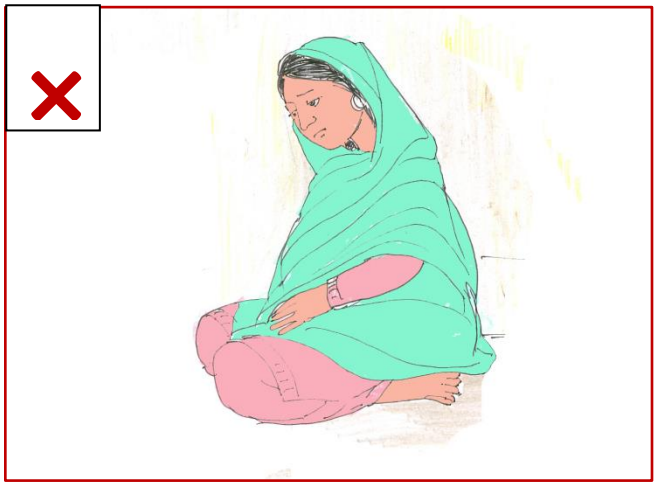
Start by showing them the pictorial booklet. Tell them that each and every step in this booklet is very important. Tell them that you hope that they will listen to you carefully especially now when they have understood that it will benefit their child or grandchild or nephew/niece and their family on the whole.

Encourage them to ask questions and interrupt you if they want any clarity. Spend at least five minutes on each step.

Note for LHWs: Any case with pregnancy complications should be followed routinely as is taught and Happy Mother Healthy Child in Ten Steps should be delivered on some other convenient day and time.

Step 1:

Empathetic Listening (Humdarde say sunaah): Tell the family that it is very important to give mother an opportunity to speak about her health, her worries, her fears and her feelings. She can talk to anyone in her family; this could be her mother-in-law, husband, sister-in-law or a lady health worker (LHW,). They should listen to her with kindness, patience and sympathy. This will help the mother to feel better and look after her children and her family well. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.



Tell families that for the betterment of the coming child they need to;

- ✓ Remember not to pass any judgments when listening to mother.
- ✓ Remember not to get angry with her.
- ✓ Remember to discuss her problems with her LHW.
- ✓ Remember when a mother feels better child stays healthy and happy.

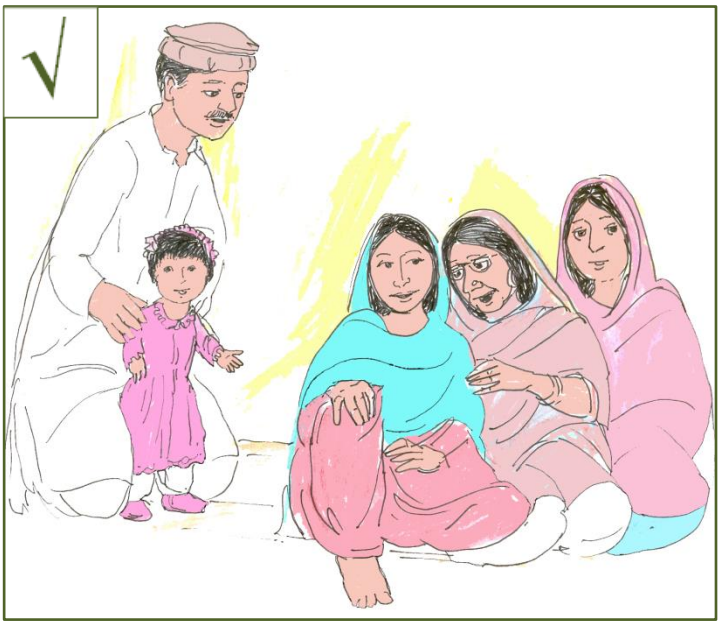
Step 2

Circle of support (Aak dosaray ka Saharah Bunnah):

Tell the family to reassure mother that she is not on her own. Her family members and LHW understand what she is going through and will support her and her child. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.

Tell families that for the betterment of the coming child they need to;

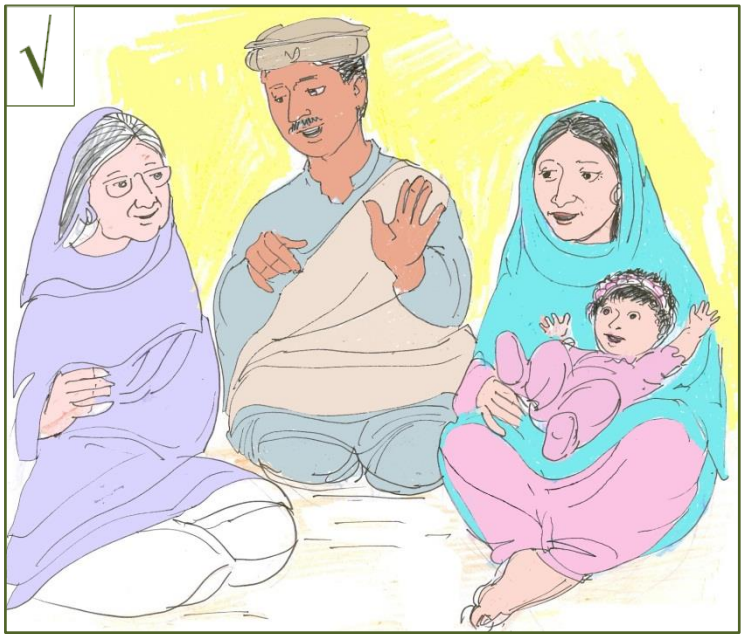
- ✓ Remember to tell mother that she is not on her own; family's reassurance will help the mother to feel better.
- ✓ Remember to reassure mother that giving birth is a natural process and in case of any complication medical help can be accessed.
- ✓ Remember to comfort her by telling her the names of family members and professionals (LHW, LHV and doctor) who could support her.
- ✓ Remember when a mother feels better child stays healthy and happy.



Step 3

Domestic peace (Gahraloo Sakoon): Tell the family that it is important to avoid verbal and physical violence for the benefit of the children. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.

Tell families that for the betterment of the coming child they need to;



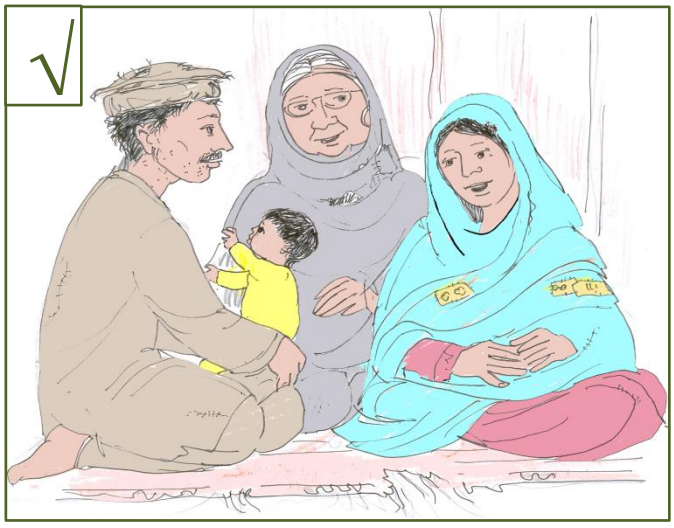
- ✓ Remember that physical and verbal abuse can make the child who is inside his/her mother's womb feel anxious and scared.
- ✓ Remember that children who witness domestic abuse can carry the fear all their lives.
- ✓ Remember that any type of violence towards mother could lead to miscarriage. In this regard Mujahid has quoted from Hazrat Umar that anyone who spoiled a mother's pregnancy will free one slave for repenting (Kanzul Amal volume 15 page 31).
- ✓ Remember to treat the mother well for the benefit of children.

Step 4

Making the best what you have: Tell family that poverty can stop them from buying necessary things but it can't stop them from showing kindness to their family. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.

Tell families that for the betterment of the coming child they need to;

- ✓ Remember to focus on things which can be done in comparison to those which can't be done.
- ✓ Remember that their kindness could bring more happiness to their family than anything else and give them strength to deal with the financial problems.
- ✓ Remember they don't need to buy kindness-it free and it is in abundant in them, they only have to express it.



Step 5:

Time to rest (Aaram Deenah): Tell the family that keeping a healthy routine despite the poverty and other problems is essential for the health of all the members of the family especially for a pregnant mother and mother with young babies. Mother's healthy routine has a great influence on their children's health. During pregnancy and after giving birth mother can feel tired and unwell. It is very important for the family to share her work load and give her proper rest periods in between her daily work routine. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.

Tell families that for the betterment of the coming child they need to;

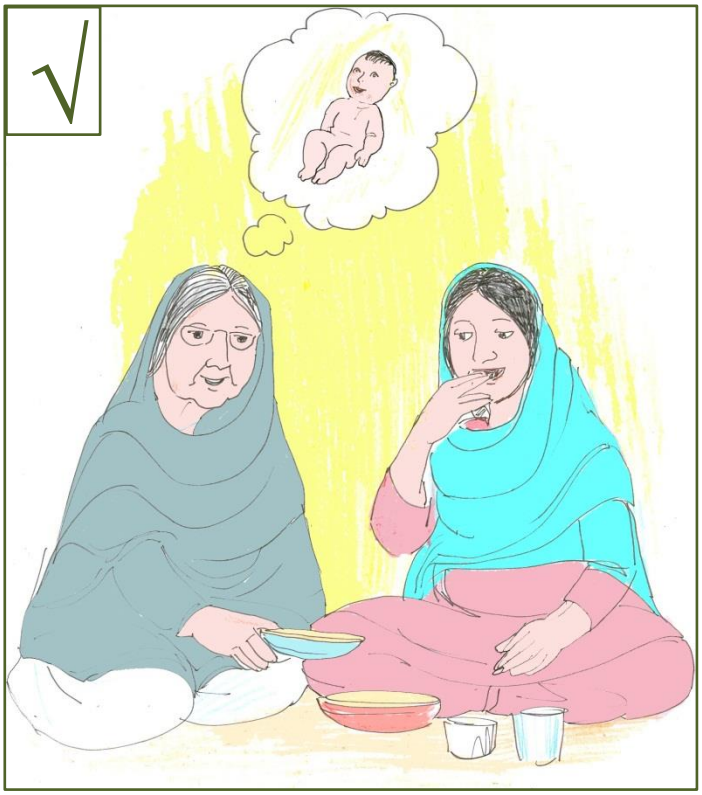
- ✓ Remember to give mother some time to rest during pregnancy this will strengthen the baby in her womb.
- ✓ Remember to give a mother some time to rest after the baby is born this will help her to look after her child better.

Step 6:

Balanced diet (Bahtar Ghaza Deenah): For a baby to grow properly a pregnant mother and mother who is breast feeding her baby needs a balanced diet. She needs to have three meals a days, fruits, vegetables and drink 6-8 glasses of water. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.

Tell families that for the betterment of the coming child they need to;

- ✓ Remember when a mother is eating a balanced diet she will give birth to a healthy baby.
- ✓ Remember when a mother is healthy; she will be able to look after child better.
- ✓ Remember to provide a balanced diet to mother for the benefit of the child.

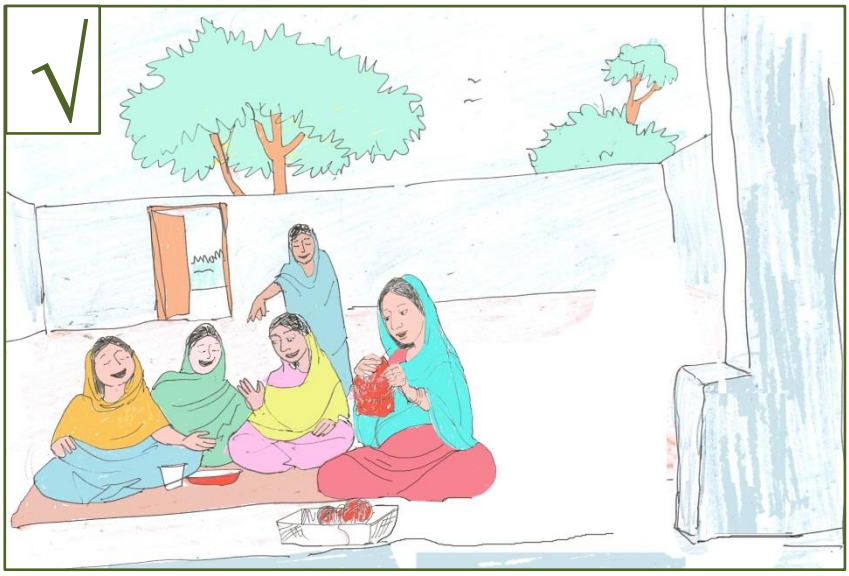


Step 7:

Engaging the mother in pleasurable activities: Tell the family that involving mother and her child in their traditional family activities will make her feel better. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.

Tell families that for the betterment of the coming child they need to;

- ✓ Remember to encourage mother and her child to engage in pleasurable activities.
- ✓ Remember when a mother is happy, baby feels happy as well.
- ✓ Remember to focus only on simple family activities which doesn't involve any cost such as visiting family or friend and which could be easily accomplished.

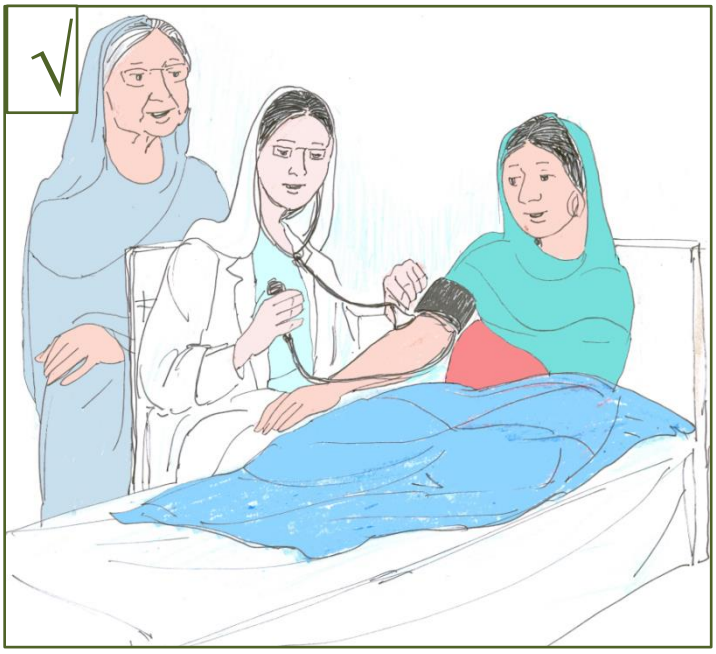


Step 8

Routine check-ups. It is extremely important for the pregnant mother to have routine checks ups and to have regular contact with her LHWs and LHVs. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.

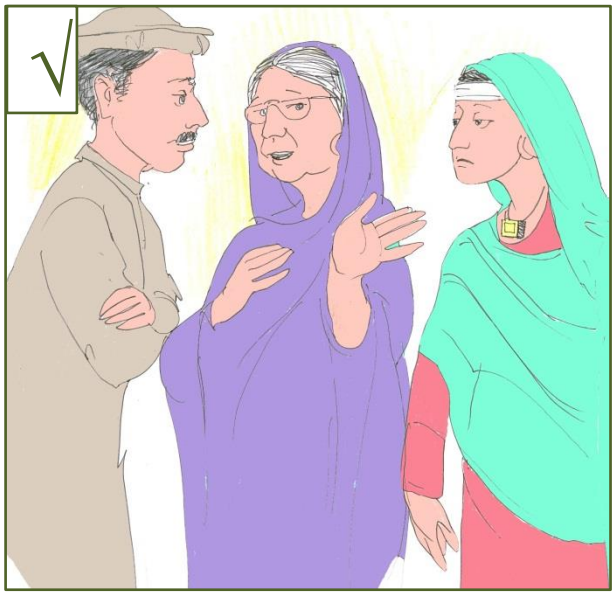
Tell families that for the betterment of the coming child they need to;

- ✓ Remember to encourage mother to talk to her LHW/ LHV about her health.
- ✓ Remember that these check-ups can help mother to overcome her fear of dying during child birth through monitoring her health and reassuring her.
- ✓ Remember that these check-ups can save pregnancy and will allow the baby to come in this world safely.
- ✓ Remember if the family wants to provide the best opportunities for their children and give them a good life it is important for mother to speak to LHW about contraception. By doing so you are valuing your family. Contraception will help you to provide best for your existing children.



Step 9

Taking the mother to the doctor (Doctor kee madat leena). If the LHW/LHV advice you or if you feel that the mother is still having the symptoms of insomnia, crying spells, loss of appetite, aches and pains, Fears and apprehensions (fear of dying during child birth, worrying about children being taken care of in case of their death), irritability, anger bout, Withdrawal (not wanting to talk to anyone), tiredness, lack of motivation (struggling to do house work) and loss of interest (not wanting to do anything) it is best to take her to doctor. To make the family understand this step; first show them these two pictures and ask them how they perceive these. Later on educate them through these pictures.



Tell families that they need to;

- ✓ Remember that it is common for mothers to experience mental distress before or after giving birth.
- ✓ Remember that with the proper help i.e. taking mother to doctor will make her get better.
- ✓ Remember Dawahee (medical intervention) and Dua (Taweezoona and Sakhtoona) are both important.

Step 10

Maintaining the peace and harmony of the family (Ghar kaa sakoon kaim rakhna). Children stay healthy and happy in the families who live in peace and harmony. When children witness physical and verbal violence they feel unsafe and vulnerable all the time. To make the family understand this step; first show them this picture and ask them how they perceive this. Later on educate them through this picture.

Tell families that for the betterment of the coming child they need to;

- ✓ Remember to show kindness to each.
- ✓ Remember to avoid physical and verbal violence.
- ✓ Remember that your patience and kindness to each other will be rewarded by Allah through keeping your family healthy and happy!

Ask family members if they have any question to ask. Ask them if they have understood what you have told them. Encourage them to ask you for any clarity. Give them the calendar (leaflet) advise them to display it where all family members can see it. Thank them for their time and for listening to you!!

Frequently asked questions:

Q1: How will I identify that the mother is experiencing distress?

Head ache, Crying, Backache, Lack of motivation, Loss of appetite, Insomnia, Irritability, Shouting, Withdrawal

Q2: Why do some mother's experience distress?

Marital problems, Family issues, financial problems, Debt, Death, Military, over work, Fear of death during delivery.

Q3: Why is my daughter-in-law/ wife experiencing distress?

A: It is very common; one out of every four mothers can experience distress. It is no one's fault just gives that mother care and support and she will get better.

5B. Training manual for LHWs (Pushtu)

خوشحاله مور صحت مند ماشوم په لس قدمه

لیډی هیلة ورکرزډپاره تربیتی کتابچه

Human Development Research Foundation

UNIVERSITY OF LIVERPOOL

تعارف:خوشحاله مور صحت مند ماشوم په لس قدمه

"خوشحاله مور صحت مند ماشوم په لس قدمه" یو داسې نفسیاتی پوهنه ده چې د کومې مقصد د حمل دوران کښې اؤ د بچی د پیدائش نه پس مېندو ته د ذهنی پریشانو(ډپریشن) په باره کښې معلومات ورکول دی. مونږداطمعه لرو چې دخاندان ټول افراد ددے په اهمیت پوهه شی اؤ د حمل دوران کښې یا د ماشوم د پیدائش نه پس تر یوکاله پورې د مېندو خیال اوساتی. ددي سره به په کورونو کي د روټین ډاکټری معائنے خه والي راشی او د ډپریشن مر ض د پیژندګلو پو هه به هم زیا ته شی چه نتیجه به ي په وخت د ډاکټر مشوره وی.

د ماشوم د پیدایش نه وړاندي او پس ذهنی پریشانی(ډیپریشن) څه څیزدي:- "خوشحاله مور صحت مند ماشوم په لس قدمه" په با اثره طریقه د رسولو دپاره دا ضروری ده چه LHWs د ماشوم د پیدایش نه وړاندي او پس ذهنی پریشانی(ډیپریشن)اوپیژنی چه ډیپریشن څه څیزدي؟ مونږ ټول د لفظ ډیپریشن سره اشنا یو ځکه چه نن سبا دا ډیر عام طور باندي استعمالیږی. ځني وخت کي انسان خفه خفه یی، زړه له ي خوشحالی نه راځی او زړه ي ډک ډک وی یعنی ژړا ورله ورځی. دا د ژوند عام احساسات دی. خو که چري دا د ژوند په تیرولو کي مداخلت شروع کړی او تر دوه هفتو پوري ختم نه شی نو کیدي شی چه داد ډیپریشن نخه وی. ډیپریشن زمونږ د خوراک په طریقواثر انداز کیدي شی(یعنی د روټین نه زیاته یا کم خورل)، خوب (یعنی د روټین نه زیات یا کم خوب)، احساسات(خفګان، غصه، بي چینی، مایوسی، قصور) او زمونږ په سوچ(یعنی داسي سوچ چه زه د هیڅ دپاره خه نه یم، ژوند مي د محرومیانو ډک دي).

د ماشوم د پیدایش نه وړاندي او پس ذهنی پریشانی(ډیپریشن) دا د یو تناؤ مرض دي کوم چه د حمل دوران کي یا د ماشوم د پیدایش نه پس تر یو کاله پوري په مېندو راځی. دا د مېندو د پاره یوه عامه خبره ده چه هغه د ماشوم د پیدایش نه وړاندي او پس لګه بي موډه وی. کله چه داسي خراب طبیعت څه

ورځې وی نو هغې ته Baby blues وائ، خو که چرې داسې خراب طبیعت د دوه هفتو نه زیات ټایم پورې وی نو کیدې شی چه داسې میندې د ماشوم د پیدایش نه وړاندې او پس ذهنی پریشانی(ډیپریشن)شکار وی. دا یو عام مرض دي او زمونږ په ملک کې تقریباً په څلورو کې په یو مور دا راتلې شی.

د ماشوم د پیدایش نه وړاندې او پس ذهنی پریشانی(ډیپریشن) عامې نخو کې خوب نه ورتلل، د ژړا دورے راتلل، لوړه ختمېدل، دردونه، یره اؤ سوچونه کول (خاص کر د ماشوم پېداکېدو کښې د مرګ یره اؤ یا داکه چرته مړه شم نو د ماشومانو د خیال ساتلو فکر)، چړچړاپن، دغصې دورې، زر ستړی کېدل، د خلقو نه بېزاره کېدل او د کور په کارونو کښې دلچسپی کمېدل دی.

دا ډیره ضروری ده چه تاسو په دې ځان پوهه کئ چه د ماشوم د پیدایش نه وړاندې او پس ذهنی پریشانی(ډیپریشن)د نورو مرضونو شانتې یو مرض دي د کومې علاج چه په مناسب خیال ساتلو او په توجه سره کیدې شی. په دې سلسله کې د کورخلق ډیر اهم کردار ادا کولې شی او دداسې میندو ډیر په خه طریقه خیال او د هغو مرض ټهیک کولو کې مدد کولې شی.

کور واله په نفسیاتی پوهې پوهه کول :- زمونږ د تجربو اؤ تحقیق نه دا څرګنده شوی ده چې نور کورواله د مور د صحت په باره کښې خبرولو دپاره خه طریقه دا ده چې مونږ ماشوم مخې ته راولو اؤ د کور مشران په دے خبره پوهه کړو چې د راتلونکی ماشوم یا ماشومی صحت د مور د ښه صحت اؤ خوشحالۍ سره تړلے دے. راځئ چې د"خوشحاله مور صحت مند ماشوم په لس قدمه" دپاره هم دا طریقه اختیار کړو. مونږ به ماشوم په نخښه کوو اؤ زمونږ هر عمل به د ماشوم د فائدے دپاره وی.

ددے نفسیاتی پوهنی درے مرحلے دی

اولنیء مرحله: د کور والا سره رابطه کول

دوېمه مرحله: رویه یا خوئې بدلول

درېمه مرحله: خوشحاله مور صحت مند ماشوم دپاره قدم اغستل

ورېمې وزټ

اولنی مرحله: د کور والا سره رابطه ساتل

کور والا د ځان سره په یو ځائې کښښولو اؤ په نفسیاتی مسئلو پوهه کولو دپاره ضروری ده چې د هغوئې سره رابطه اوکړے شی. دا دومره اسان کار نه دے. خاص کر په هغه کورونوکې کوم چه ډیر روایت پسنده،بې تعلیمه او غریبانان وی. خو بیا هم داسې څه طریقے شته چې تاسو ترې د کورواﻻ سره په رابطه کولو کښې مدد اغستے شئ.

خود اعتمادی یعنی په خپل قابلیت یقین ساتل

تاسو یو تجربه کاره ایل ایچ ډبلیو یئ. اؤ ستاسو په حواله کړے شوی علاقه کښې چې کوم کورونه دی د هغوئې سره به تاسو اشنا یيء چا سره چې تاسو مخکښې هم کار کړے دے.د دغے خلقو سره په رابطه کولو کښې به ستاسو خپل شناخت، تعلق اؤ تجربه ډېر لاس درکوی.

په خپل قابلیت پوخ یقین اؤ اعتماد ساتئ.

په کورونو اعتماد

دکور واله که د هري تعلیمی یا مالی حیثیت سره تعلق وی دوی ټول د خپلوماشومانو د خه صحت باره کښې دلچسپی ضرور لری. تاسو له پکار دی چې تاسو هغوئې په دے پوهه کړئ چې زمونږ مقصد ستاسو د ماشوم ښه صحت دے اؤ دا معلومات به تاسوته د خپل کوروالا دپاره په صحیح فیصله اغیستو کښې مدد درکوی. ستاسو دپاره دا ضروری ده چې د کور والا په ښېګړه یقین اوساتیء. د کوروالا سره په رابطه کولو کښې به ستاسودا یقین تاسو له مدد درکوی.

ټول کور واله شاميلول

مونږ غواړو چې ټول کوروالا د نفسیاتی پوهنی نه زدکړه اوکړی نو دا ضروری ده چې تاسو هغه وخت کور ته لاړ شئ چې زیات افراد په کور کښې موجود وی. څه کورنۍ به په دے نه پوهېږی چې د هغوئې شرکت په دے نفسیاتی پوهنه کښې ولې ضروری دے. نو تاسو هغوئې ته وئیلے شئ چې ماشومان د ټول کوروالا ذمه واری ده. دا د یو دوؤ کسانو کار نه دے. تاسوبه پخپله هم د یوکورنۍ په شان د ماشوم د ښېګړی دپاره کار کوئ. کور واله ته دا یاد کیرنه اوکئ چه په سیشن کي به هیڅ قسم د پردي خبري نه وی بلکه عام دذهنی او جسمانی صحت معلومات به پکي تاسو ته درکړي کیګی.

نفسیاتی پوهنه متعارف کول

تاسو به نفسیاتی پوهنه په دے طریقه متعارف کوئ اول به ددي نوم واخلیءچه "خوشحاله مور صحت مند ماشوم په لس قدمه" اؤ بیا به تاسو په دے رنړا واچوئ چه زمونږ د نفسیاتی پوهنی د ماشوم دپاره دهغه په کورنۍ کښې څه اهمیت دے؟ تاسو کوروالا ته اووایئ چې ماشوم زمونږ سبا (مستقبل) دے

مونږ ټول غواړو چه زمونږ ماشوم دې په ژوند کښې صحت مند، خوشحاله اؤ عقل مند وی دا زمونږ راتلونکے کُل (نسل) دے مونږ د دے ماشوم سره مینه کوو اؤ ددے ماشوم خیال ساتو. دوئې ته به اووایئ چې څه معلومات به درله مونږ نن درکړو اؤ د څه معلوماتو دپاره به یوځل بیا راځو دا معلومات په لس قدمه باندې مشتمل دی. په هر قدم کښې د ټولی کورنۍ دپاره د ښېګړی پیغام دے هر ویزیټ به یوه ګڼته وی اؤ دا به ډېره ښه خبره وی چې زمونږ په راروان ویزیټ کښې هم دا موجود ټول کوروالا شامل شی.

دکوروالا پوهه معلومول

اوس دا هم ضروری ده چې کومې خبری تاسو کوئ په هغے ټول کوروالا پوهېږی اؤ که نه؟ هغوئې ددے خبرو سره اتفاق کوی اؤ که نه؟ یا هغوئې څه تپوس کول خو نه غواړی؟ یا هغوئې په دے باره کښې نور څه اؤږدل غواړی؟ اؤ په خوشحالۍ اؤږدل غواړی اؤ که نه؟ ددے معلومولو نه پس به تاسو ته پته اولګی چې د کوروالا په زړه کښې څه قسمه شک شبه نشته. اؤ تاسو ته به نور هم په معلوماتو ورکولو کښې اسانی پیدا شی.

دویمه مرحله: رویه یا خوئې خه کول

رویه خه کول ګران کار دے. تاسو به داسې ساده اؤ اسانه طریقه استعمالوئ چې کوروالا ته پکښې څه یره ترهه یا مشکل نه ښکاری. تاسو هلته ددے دپاره نه ځئ چې د هغوئې د اوسیدو په طریقو څه سوال اوچت کړئ یا په هغوئې کښې څه غلطۍ رااوباسئ. تاسو هلته صرف اؤ صرف د مور اؤ د ماشوم د څه صحت د مقصد دپاره ځئ. تاسو به هغوئې سره په بے روزګاری، غریب والی اؤ مرګونو خبری نه کوئ.

تاسو به هغوئې ته دا اووایئ چې زمونږ مقصد ستاسو ژوند بدلول نه دی. بلکه زمونږ مقصد د مور اؤ د ماشوم د خه صحت باره کښې پوهه اؤ معلومات درکول دی. دا بیا په هغوی ده چه هغوی بیا ددے معلوماتو نه څنګه فائده اخلی.

وړاندې هغه طریقے ښودلی شوی دی چې کومې ستاسو په مقصد پوره کولو کښې مددګاری ثابتېدے شی.

۱)د مخکښې نه تاسو خپل ماشوم دپاره څه کوئ؟

شروعات به تاسو داسې کوئ چې د کوروالا به تاسو صفت اوکړئ. یعنی هغوئې د اول نه د خپل ماشوم او کور واله په ډېره خه طریقه سره خیال ساتلے دے. اؤ ورته اوایيء چه د ماشوم په خه والی کښې دکور دټولو خلقوڅومره غټ لاس دے.دے کښې د نیا نیکه عقلمندی اؤ تجربه، د موراؤپلار مینه اؤ تربیت ، د خپلوخپلوانو د ماشوم خیال ساتل اؤ هغه ته صحیح لار ښودل دا ټولی اهمی خبری شامل دی.

هم دا خبری دی چې د ماشوم یا ماشومې د پرورش دپاره ضروری دی. تاسو د کوروالا ټول کوششونه اوستایئ. اؤ یقین ورکړئ چې دے سره به ستاسو ماشوم یا ماشومه کامیاب، صحت مند اؤ خوشحاله لوئیږی.

۲)تاسو نور څه کولے شئ؟

تاسو کوروالا ته وئیلے شئ چې کله یوماشوم یا ماشومه پیداشی نو د ځان سره ډېر رحمتونه اؤ خوشحالی راوړی. په کومه ورځ چې ماشوم یا ماشومه پیدا شی نو هم د هغه ورځی نه کوروالا د دوئې خیال ساتل شورو کړی. ولې پکار خو دا ده چې د ماشوم خیال ساتل د هغه د پیدائش نه مخکې شروع کړے شی. اؤ دا

حله ممکنه ده چې مونږ د هغه مور د صحت خیال ساتل شروع کړو کومه چه د ماشوم یا ماشومې ناجوړه ده.

اوس به تاسو کوروالا په دے خبره پوهه کړئ چې د ماشوم یا ماشومې د پیدا کېدو نه مخکښې د هغوئې د مور خیال ساتل ولې ضروری دی؟ اؤ ولې د پیدائش نه وروستو د دغی مور خیال ساتل ضروری دی؟

۳)تاسو ته د مور د صحت خیال ساتل ولې پکار دی؟

اوس تاسو له پکار دی چې تاسو لاندینی ذکرکړے شوی خبرو له ډېر اهمیت ورکړئ. چه کوروالا د مور د صحت په خیال ساتلو پوهه شی.د صحت مند ماشوم یا ماشومی پیداکېدو دپاره ضروری ده چې مور صحت منده وی. ځکه چې ماشوم صحت مند پیداشی نو هغه ته د ژوندی پاتی کېدو دپاره یوه موقع میلاؤ شی اؤ د بیمارو سره مقابله کولے شی.

په پاکستان اؤ باقی دنیا کښې د ډېرتحقیق نه پس ثابته شوی ده چې د ماشوم صحت د مور د صحت سره تړلے دے. اؤ یقیناً چې تاسو خپل ماشوم یا ماشومه ښه صحت مند لیدل غواړئ نو پکارده چې تاسو د مور د صحت خیال اوساتئ.

زمونږ مذهب هم په دې ډیر زور اچولې دي چه کومه مور د بچی ناجوړه وی اؤ یا د هغے واړه بچی وی نو دهغے دې ډېر خیال اوساتلے شی. زمونږ د دین یا مذهب مطابق د ماشوم پیدا کېدو نه مخکښې اؤ پیداکېدو نه پس دا وخت د مور دپاره ډېر نازک وی. ځکه خاونداؤ د نورکوروالا ته پکار دی چې د داسې مېندو ډېر خیال اوساتی.

ماشوم که هلک وی اؤ که جینۍ دواړه د کوروالا دپاره د الله پاک تحفے دی. نو پکارده چې ډېر په مینه اؤ په رحم د دوئې پالنه اؤ خیال اوساتلے شی. که چرته تاسو ماشومه کم تره ګڼۍ نو تاسو د الله تعالیٰ تحفه کم تره ګڼۍ کومه چې الله تعالیٰ تاسو ټول کوروالا له درکړی ده. که د یوے مور لور شوی وی اؤ ځوئے خو د هغے ډېر خیال ساتل پکار دی.

ځنګه چې د ماشوم د صحت خیال ساتل د کور والا ذمه واری ده نو هم دغسې د مور دصحت خیال ساتل د ټولو ذمه واری ده. نو د ماشومی یا د ماشوم د فائدے دپاره ستاسو دا ذمه واری ده چې مور له زیاته توجه ورکړئ اؤ خیال ئې وساتئ. په هغه وخت کښې هم چې کله دادماشوم ناجوړه وی اؤ چې کله ماشوم پېداشی نو هغه وخت هم....

۴)تاسو د مور خیال ځنګه ساتلے شئ؟

تاسو په داسې طریقه د هغے خیال ساتلے شئ چې کله ستاسو دا پوخ یقین جوړ شی چې مورجسمانی اؤ ذهنی دواړه طور باندې ټهیک ده. کله کله داسې هم کیږی چې یوه مور د ماشوم ناجوړه وی یا هغه د ما شوم پېدا کېدو نه پس ښه نه وی نو هغوئې ته اووایئ چې:

دا یوه عامه خبره ده چې داسې زنانه د بچې پېداکېدو نه وړاندې یا د بچې پېداکېدو نه پس ذهنی طورلکه پرېشانه وی.

په ځلورو میاشتوکښې یوه مور داسې وی چه هغه د حمل دوران کښې اؤ د ماشوم د پېداکېدو نه پس ذهنی پرېشانه وی.

کېدے شی چې هغه مکر نه کوی اؤ هغے ته په رښتیا څه نه څه پریشانی وی.

تاسو د هغوئې نه دا تپوس اوکړئ چې اوس اوس ستاسو په کورکښې چاته داسې څه مسله وه یا اوس هم شته؟ لکه

- خوب نه ورتلل
- د ژړا دورے راتلل
- لوړه ختمېدل
- دردونه
- یره اؤ سوچونه کول (خاص کر د ماشوم پېداکېدو کښې د مرګ یره اؤ یا داکه چرته مړه شم نو د ماشومانو د خیال ساتلو فکر)
- چړچړاپن
- دغصې دورې
- زر ستړی کېدل
- د خلقو نه بېزاره کېدل
- د کور په کارونو کښې دلچسپی کمېدل

که چرته هغوئې په آو کښې جواب درکړی نو تاسو د هغوئې ستایئنه اوکړئ.چې هغوئې دا علامات اوپېژندل.

که چرته هغوئې اووئېل چې زمونږ په کور کښې چاته ذهنی پریشانی نشته نو تاسو هغوئې ته دا اووایئ چې مونږ تاسو له صرف معلومات درکوو ځکه چې دا معلومات تاسو له په نورو ځایونو کښې مدد درکولے شی.

۵)اؤ د هغوئې نه تپوس اوکړئ چې ستاسو خو څه سوال نشته؟

دهغوئې سره دخپل دوئم ویزیټ ورځ اؤ وخت یقینی کړئ اؤ هغوئې له دا یادګېرنه ورکړئ چې مونږ امید ساتو چې تاسو ټول به زمونږ دوئم ویزیټ کښې هم موجود یئ. ستاسو زمونږ د اؤږدو ډېره ډېره مهربانی.

دوئم وزټ

درېمه مرحله:د خوشحاله مور صحت مند ماشوم دپاره قدم اغستل

په مختصر طور باندې د خپل وړمبی ویزیټ اهم نقطې کوروالا ته دوباره اووایئ. هغوئې ته وریاد کړئ چې د مور اؤ د راتلونکی ماشوم صحت د یو بل سره تړلے دے.

تپوس اوکړئ چې د هغوئې څه سوالونه خو نشته. د کور والا سره به څه قسمه بحث نه کوئ. دا یاد ساتئ چې خپل ذهن په هغو خبرو ستړے کړئ چې کومی بدلیدې شی. تاسو د هغوئې ژوند اؤ حالات نه شئ بدلولے تاسو هغوئې له صرف پوهنه ورکولے شئ.

چې کله کوروالا د مور اؤ د ماشوم د صحت په تعلق پوهه شی تاسو به هغوئې ته د لاندینو لسو قدمونو په باره کښې معلومات ورکړئ. دا ډېره ضروری خبره ده چې تاسو هغوئې ته اووایئ چې دوئې د خوشحاله مور اؤصحت مند ماشوم نه لس قدمه لری دی. دا قدمونه اسان دی اؤ پوره کېدے هم شی که چرې ټول کور والا په اتفاق سره دا کار اوکړی.

په شوروکښې هغوئې ته تصویری کتابچه اوښایئ. هغوئې ته اووایئ چې هر یو قدم په دے کتابچه کښې ډېر ضروری دے. دوئې ته اووایئ چې زه امید لرم چې تاسو به ماته په غور سره غوږ کېږدئ. خاص

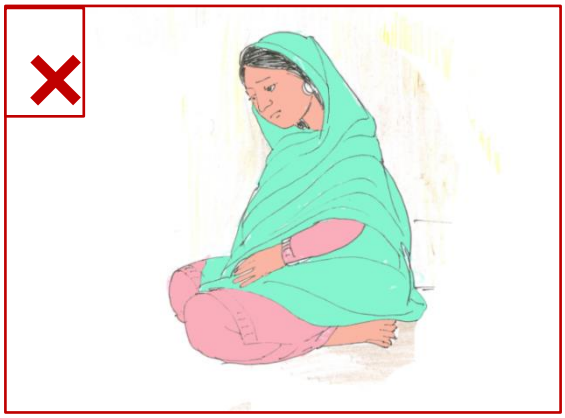
طورباندې اوس چې کله تاسو ددے په اهمیت پوهه شوی یئ د خپل ماشوم، نواسی/نواسي یا وراره/وریره د صحت په باره کښې.

هغوئې پوهه کړئ چې دوئې کله هم غواړی نو تپوس کولے شی اؤ ځان پوهه کولے شی. اوس به هر قدم له پنځه پنځه منټه ورکړئ.

دا LHWs د پاره نوټ:- که چرې یو داسي کیس تاسو ته تر مخې شی چه په هغې کې د حمل پیچیدګئ شروع شوی ې نوضروری ده چه اول تاسو هغه په روټین طریقه Manage کئ کومه چه تاسو ته خودلی شوی ده او"خوشحاله مور صحت مند ماشوم په لس قدمه" په بله مناسبه ورځ اوښایئ.

ورمبے قدم:همدردی سره اوړبدل

کور والا ته دا اووایئ چې دا ډېره ضروری ده چې تاسو مور له د خپل زړه د تشولو موقعه ورکړئ چې هغه تاسو ته د خپل صحت، یري اؤ د خپلو احساساتو په باره کښې خبری اوکړی. دا مور په کور کښې د هرچا



سره خبری کولے شی. مثلاً خواښی، خاوند، ایندرور، یا لېډی هېلتھ ورکر. ځکه چه حمل د مور دپاره په کمزورئ لپاسا بله کمزوری ده او دا کمزوری د حمل د نیټې سره زیاتیږی(تفسیر نفسی). نو دوئې ټولو له پکار دی چې د مور خبرې په صبر اؤ همدردی سره واؤری. ددے سره به د مور طبیعت ښه شی اؤ هغه به د کوروالا اؤ د ماشوم ښه خیال اوساتلے شی.ددې قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکيء چه ددوی ددې متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددې تصویرانو په ذریعه ورکيء.

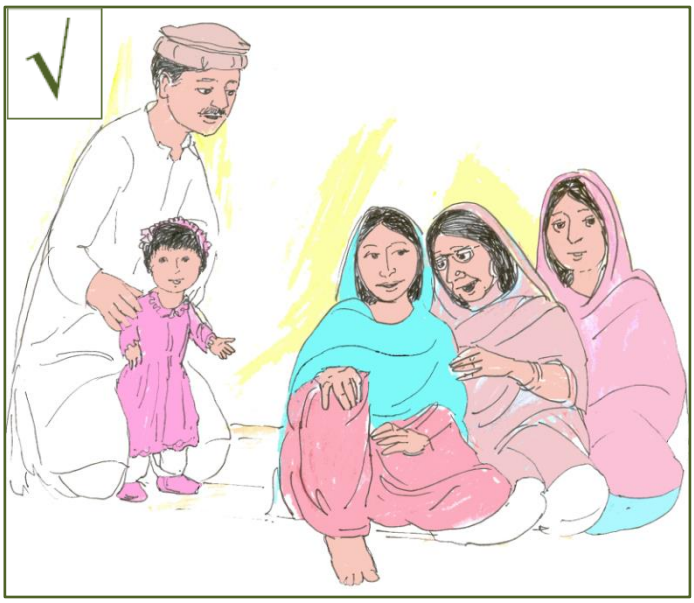
کوروالە ته اووایئ چې د راتلو نکی ماشوم او د ورو ماشومانو د صحت د پاره ضروری ده چه

- د مور د اؤږدو په وخت څه فېصله اونه کړی.
- مورته قار یا غصه اونه کړی.
- د هغے مسلے د لېډی هېلتھ ورکر سره اوکړی.
- یاد ساتئ چې مور ښه وی نو ماشوم به صحت مند اؤ خوشحاله وی.

دوئم قدم:یوبل له لاس ورکول

کوروالا پوهه کړئ چې هغوئې مور ته دا یقین دهانی اوکړی چې ته یواځی نه یې. مونږ ټول اؤ لښې هېلتهـ ورکړ ستا سره په دے مسلو پوهه یو اؤ ستا اؤ ستا د ماشوم به هر قسم مددکوو.

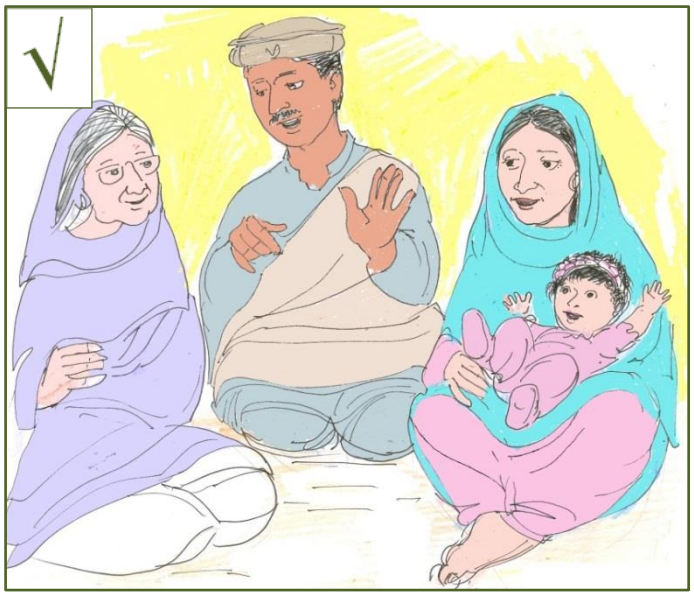
ددي قدم د پوهي د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکيء چه ددوی ددي متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددي تصویرانو په ذریعه ورکيء. کوروالـه ته اووایئ چې د راتلو نکی ماشوم او د وړو ماشومانو د صحت د پاره ضروری ده چه



- مور ته اووایی چې ته یواځی نه یې. دا یقین دهانی به د مورصحت ښه ساتی.
- مور په دے خبره پوهه کړئ چې د ماشوم پیدائش یو قدرتی عمل دےاؤ دا څه مرض نه دے اؤ که چرې څه مسله وی نو مونږ هسپتال ته تلے شو.
- مور ته په نوم کسان په ګوته کړئ چې کوم دهغے هر وخت مدد ته تیار دی.
- یاد ساتئ چې مور ښه وی نو ماشوم به صحت مند اؤ خوشحاله وی.

دریم قدم:د کور سکون

کوروالا ته اووایئ چې د ماشوم د فائدے دپاره مور ته د قار، پېغورونو اؤ وهل ټکولو نه ځان اوساتی. ددي قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکيء چه ددوی ددي متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددي تصویرانو په ذریعه ورکيء. کوروالا ته اووایئ چې د راتلو نکی ماشوم او د ورو ماشومانو د صحت د پاره ضروری ده چه



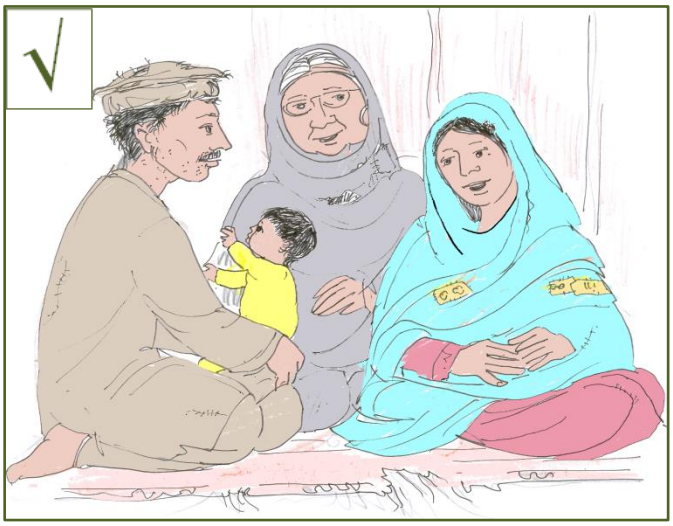
- یاد ساتئ چې قار، پېغوراؤ وهل ټکول راتلونکے ماشوم یرئ اؤ هغه بیا په راروان ژوند کښې غلے غلے اؤ ـبے زړه وی.
- یاد ساتئ چې کوم ماشوم چې په کور کښې وهل ټکول اؤ قار اووینی هغوئې ټول عمر دا یره په زړه کښې لری.
- یاد ساتئ چې هر قسم وهل ټکول د ماشوم زیان کوـلے شی.په دي سلسله کي د مجاهد نه روایت دي حضرت عمررضی الله فرماییلیدی چه چا حامله خزي حمل ته زرراورسونو هغه به ددي په کفاره کي یو غلام ازادوی.(کنزالاعمال جلد ۱۵ صفحه۳۱)
- یاد ساتئ چې د ماشوم د فائدے دپاره د مور خیال اؤ فکر کوئ.

څلورم قدم:دحالاتو مقابله کول

کوروالا ته اووایئ چې غریبی د الله د طرفه یو امتحان دے غریبی تا د ژوند د ضرورتونو د اغستونه خو منع کولے شی خو خپل کور والا سره د همدردی سره د

پښ کښدو نه چرته هم نه شی منع کولے. ددي قدم د پوهي د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکړء چه ددوی ددي متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددي تصویرانو په ذریعه ورکړء. کوروالا ته اووایئ چې د راتلو نکی ماشوم او د ورو ماشومانو د صحت د پاره ضروری ده چه

- یادساتئ چې خپله توجه په هغه کارونو کښې اوساتئ چې تاسو کولے شئ نه چې په هغه کارونو کښې چې کوم نه بدلیږی.
- یاد ساتئ چې ستاسو ښه خبری همدردی به ستاسو کوروالا ته ډیری خوشحالی ورکړی په نسبت د هر بل څیز. دا به په هغوئ کښې د غربت سره د مقابلے طاقت ورکړی.
- یاد ساتئ چې په ښه خبرو پیسے نه لګی. خو په دے تاسو زړونه ګټلے شئ. ښه خبره کول هم صدقه جاریه ده.



پنځم قدم:د ارام وخت

تاسو کوروالا ته اووایئ چې یو صحت مند روټین ډېر زیات ضروری دے د ټول کوروالا د پاره اؤ خاص کر د هغه زنانو دپاره چې کومی په حمل کښې وی یا ورسره واړه ماشومان وی. د مور صحت مند روټین د ماشوم په صحت ډېر ښه اثر غورزوی. په حمل کښې اؤ د ماشوم د پیدائش نه پس مور ډېره زیاته ستړی اؤ بیماره بیماره محسوس کوی دا ډېره ضروری ده چې نو کوروالا په سخته کښې وخت په وخت ښېګړه اوکړی اؤ د دے سره په کار کښې لاس اخلاص اوکړی. اؤ دے له د ارام دپاره وخت اوباسی. ددي قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکيء چه ددوی ددي متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددي تصویرانو په ذریعه ورکيء. کوروالله ته اووایئ چې د راتلو نکی ماشوم او د وړو ماشومانو د صحت د پاره ضروری ده چه

- یاد ساتئ چې مور له په حمل کښې د ارام دپاره وخت ورکولو سره به ماشوم صحت مند اؤ روغ رمټ وی.
- یاد ساتئ چې دماشوم د پیدائش نه پس مور له د ارام موقعه ورکولو سره به مور د خپل ماشوم ښه خیال ساتلے شی.

شپږم قدم:متوازن خوراک

د ماشوم د صحیح لوئې والی دپاره په حمل دوران کښې اؤ وروستو د مور د پیو دپاره مور له یو متوازن خوراک پکار دے. داسې زنانه له پکار دی چې د ورځې درے پیرے خوراک اوخوری. میوے، سبزی اؤ شپږ

اته ګلاسه اوبه هم اوڅښکی. لکه څه رنګه چه حضرت مریم ته ووییلی شوی وو چه نشتی یو شي غوره د کجورو تازه نه د راتلونکی ماشوم د پاره. (سورته مریم 24-26) ددې قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکړء چه ددوی ددې متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددې تصویرانو په ذریعه ورکړء.

کوروالە ته اووایئ چې د راتلو نکی ماشوم او د وړو ماشومانو د صحت د پاره ضروری ده چه

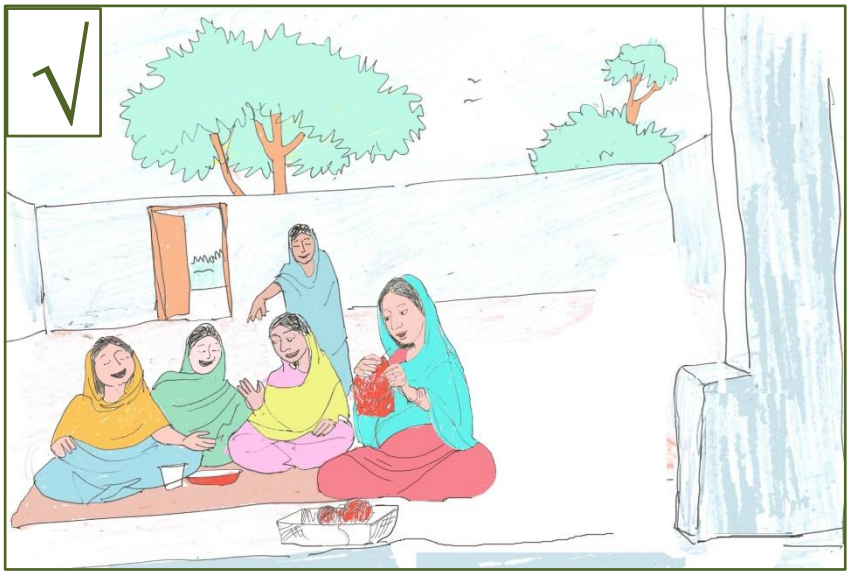
- یاد ساتئ چې مور متوازن خوراک خوری نو هغه به یوصحت مند ماشوم پیدا کړے شی.
- یاد ساتئ چې کله مور ښه خوراک خوری نو هغه به خپل ماشوم ته د مور پې پوره کړے شی. چې کوم به هغه ماشوم د مرضونو نه بچ ساتی.
- یادساتئ چې مور له متوازن خوراک ورکړئ د خپل ماشوم د فائدے دپاره.

اووم قدم:مور د خوشحالئ په کارونو کي مشغولول

کور والا ته اووايئ چې مور په داسې روايتی کورونو کارونو کښې مشغلولو سره به هغه ښه محسوس سوی. ددي قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصويران اوښايیء او د هغو نه معلومات اوکیء چه ددوی ددي متعلق څه خيال دي. بيا دوی ته خپل پيغام هم ددي تصويرانو په ذريعه ورکیء.

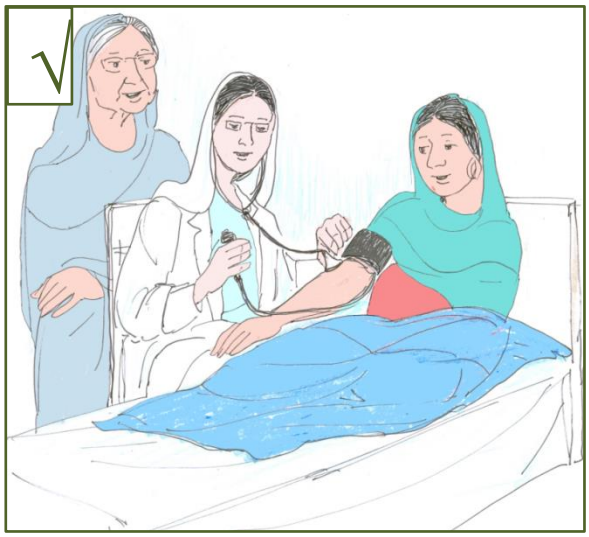
کوروالە ته اووايئ چې د راتلو نکی ماشوم او د ورو ماشومانو د صحت د پاره ضروری ده چه

- مور په داسې کارونو کښې مشغوله کړی چې کوم هغے ته خوشحالی ورکوی.
- چې کله مور خوشحاله وی نو ماشوم به هم خوشحاله وی.
- داسې اسان کارونه کول پکار وی چې په هغے څه پيسه نه لګی. لکه د خپل خپلوانو اؤ ملګرو کره تلل د چا کره چې هغه په اسانه تلے شی.



اتم قدم:وخت په وخت معائنه

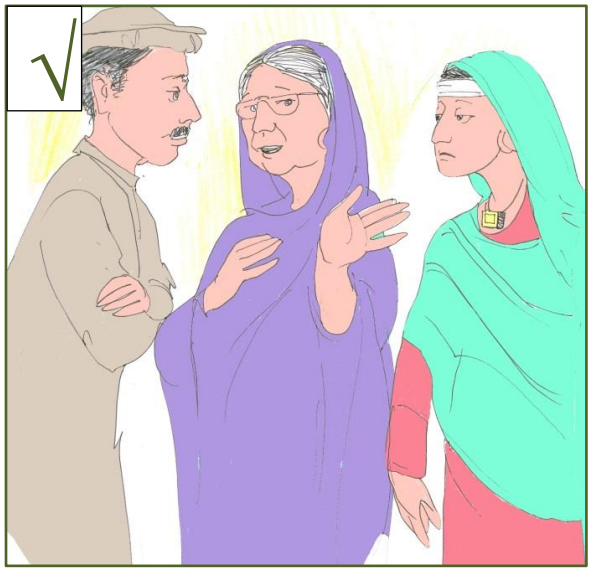
د ماشوم ناجوړه زنانه له دا ضروری ده چې هغه وخت په وخت خپله معائنه اوکړی. اؤ د لېډی هېلتهـ ورکر یا LHV سره مسلسل په رابطه کښې وی. مور له حوصله ورکول پکار دی چې هغه وخت په وخت هېلتهـ ورکر یاLHV سره د خپل صحت په باره کښې خبره کوله شی. د دے وخت په وخت معائنے سره به مور مسلسل نګرانی کښې وی اؤ هغه به د ماشوم د پېداکېدو په وخت د مرګ نه په یره باندې قابو بیا مومی. ددي قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکيء چه ددوی ددي متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددي تصویرانو په ذریعه ورکيء. کورواله ته اووایئ چه د راتلونکی ماشوم دپاره ضروری ده چه



- یاد ساتئ چې دا معائنے به د حمل حفاظت کوی اؤ دے سره به ماشوم با حفاظته دے دنیا ته راشی.
- یاد ساتئ که کور والا د خپل ماشومانو دپاره بهترینی موقعے اؤ ښه ژوند ورکول غواړی نو مور دپاره دا ضروری ده چې هغه د لېډی هېلتهـ ورکرLHW سره د خاندانی منصوبه بندی په باره کښې خبره اوکړی.داسې کولو سره ستا اؤ ستا د ټول خاندان فائده ده. خاندانی منصوبه بندی به ستاسو موجوده ماشومانو ښه والی کښې لاس درکوی.

نهم قدم:موږډاکټر له بوتلل

که چرته تاسو ته LHW یا LHV دا مشوره درکړه اؤ یا تاسو ته دا محسوسه شوه چې مور ته اوس هم د ډیپریشن نخې شتې یعني خوب نه ورتلل، د ژړا دورے راتلل، لوړه ختمېدل، دردونه، یره اؤ سوچونه کول (خاص کر د ماشوم پېداکېدو کښې د مرګ یره اؤ یا داکه چرته مړه شم نو د ماشومانو د خیال ساتلو فکر)، چړچړاپن، دغصې دورې، زر ستړی کېدل، د خلقو نه ببزاره کېدل او د کور په کارونو کښې دلچسپی کمېدل نو دا ښه خبره ده چې هغه ډاکټر له بوځئ. ددې قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا دواړه تصویران اوښایيء او د هغو نه معلومات اوکړء چه ددوی ددې متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددې تصویرانو په ذریعه ورکړء. کوروالا ته اوویئ چې تاسو له دا یاد ساتل پکار دی چې



- دا عامه خبره ده چې مور د حمل دوران کښې اؤ دماشوم د پېداکېدو نه پس ذهنی پریشانه وی.
- یاد ساتئ چې مور ډاکټر له د تلو سره به هغے ته مناسب مدد میلاؤ شی اؤ هغه به ښه شی.
- یاد ساتئ چې دعا(تعویزونه، ساختونه) اؤ دوائی دواړه ضروری دی.

لسم قدم:دکورامن اؤ سکون برقرار ساتل

دهغه کورونو ماشومان صحت مند اؤ خوشحاله وی چې په امن سکون سره اوسیږی. کوم ماشومان چې خپل مخکښې وهل ټکول وینی کنځل اؤ قار اؤری نو هغه ماشومان ځان غېرمحفوظه اؤ کمزوری کښی. ددي قدم د پوهې د پاره ضروری ده چه تاسو اول کور واله ته دا تصویر اوښایيء او د هغو نه معلومات اوکيء چه ددوی ددي متعلق څه خیال دي. بیا دوی ته خپل پیغام هم ددي تصویر په ذریعه ورکيء.کور والا ته پکار دی چې هغوی

- یاد ساتئ چې د هرچاسره همدردی کوئ.
- یاد ساتئ چې وهل ټکول اؤ کنځلو نه ځان ساتئ.
- یاد ساتئ چې ستاسو دصبراؤ همدردی په اجرکښې به الله پاک ستاسو کورنی خوشحاله اؤ صحت مند ساتی.

د کور والانه تپوس اوکړئ چې تاسو که څه سوال کول غواړئ نو کولے شئ.

د هغوئې نه تپوس اوکړئ چې مونږ تاسو ته څه اووئيل په هغے تاسو پوهه شوئ.

تاسو د هغوئې حوصله افزائی اوکړئ که چرې هغوئې نور څه وضاحت غواړی نو چې په اسانه سوال اوکړے شی.

هغوئې له به کېلېنډر ورکړئ اؤ ورته به اوويئ چې دا په داسې ځائې کښې اويزان کړی چې د کور هر کس ئې لیدلے شی.

تاسو له د وخت درکولو اؤ ستاسو د خبرو اؤرېدودپاره دهغوئې شکريه ادا کړئ.

ستاسو نه زيات تر داسې تپوسونه کېدے شی

سوال نمبر ۱: ماته به څنګه پته لګی چې د ے مورته ذهنی پريشانی شته؟

خوب نه ورتلل، د ژړا دورے راتلل، لوږه ختمېدل، دردونه، يره اؤ سوچونه کول (خاص کر د ماشوم پېداکېدو کښې د مرګ يره اؤ يا داکه چرته مړه شم نو د ماشومانو د خيال ساتلو فکر)، چړچړاپن، دغصې دوري، زر ستړی کېدل، د خلقو نه بېزاره کېدل او د کور په کارونو کښې دلچسپی کمېدل.

سوال نمبر ۲: څنی مېندو ته ولې ذهنی پريشانئ وی؟

د خزې او خاوند مينځ کې مسلې، کورنیء مسلې، د روپو پيسو کمې، قرضه، د کار بوج، مرګ، د حالاتو خرابې دو يره او د ماشوم پيداکيدو په وخت د مرګ يره.

سوال نمبر۳: زما اینګور / ښځه ولې ذهنی پریشانه ده؟

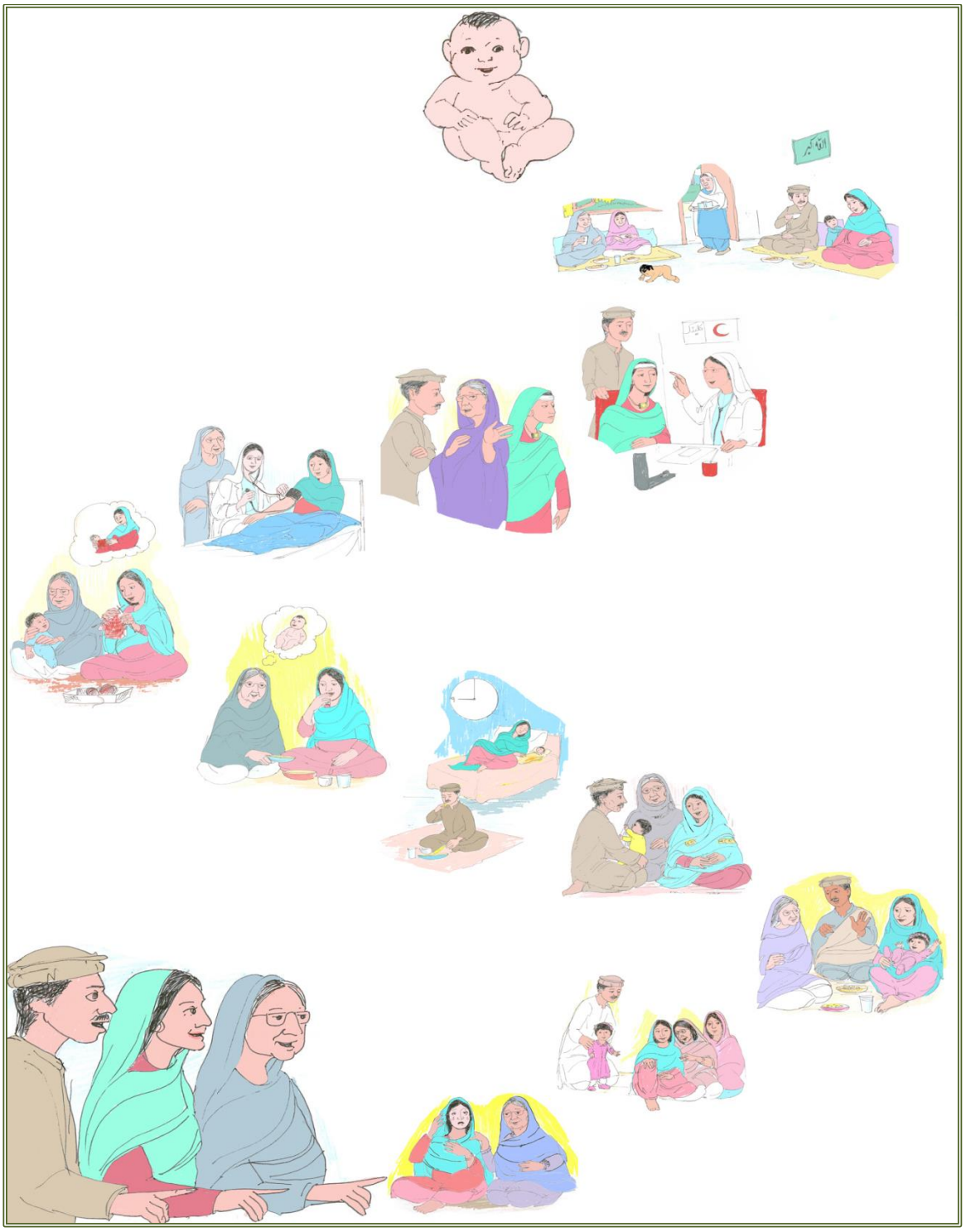
دا یوه عامه خبره ده چې داسې زنانه د بچې پېداکېدو نه وړاندې یا د بچې پېداکېدو نه پس ذهنی طورلګه پرېشانه وی. په څلورو مېئندوکښې یوه مور داسې وی چه هغه د حمل دوران کښې اؤ د ماشوم د پېداکېدو نه پس ذهنی پرېشانه وی. دي کې د هغي هیڅ قصور نشته، بس د هغي لګ خیال ساتل او مدد کول پکار دی نو هغه به په خپله ټیک شی.

5C. Counselling cards for LHWs (Pushtu)

Human Development Research Foundation

کونسلنګ کارډز

UNIVERSITY OF LIVERPOOL



خوشحاله مور صحت مند ماشوم په لس قدمه

تعارف:خوشحاله مور صحت مند ماشوم په لس قدمه

"خوشحاله مور صحت مند ماشوم په لس قدمه" یو داسې نفسیاتی پوهنه ده چې د کومې مقصد د حمل دوران کښې اؤ د بچی د پیدائش نه پس مېندو ته د ذهنی پریشانو په باره کښې معلومات ورکول دی. مونږداطمعه لرو چې دخاندان ټول افراد ددے په اهمیت پوهه شی اؤ د حمل دوران کښې یا د ماشوم د پیدائش نه پس تر یوکاله پورې د مېندو خیال اوساتی. ددي سره به په کورونو کې د روټین ډاکټری معائنے خه والې راشی او د ډپریشن مر ض د پیژندګلو پو هه به هم زیا ته شی چه نتیجه به ي په وخت د ډاکټر مشوره وی.

ددے نفسیاتی پوهنی درے مرحلے دی.

اولنیء مرحله: د کور والا سره رابطه کول

دوېمه مرحله: رویه یا خوئې خه کول

درېمه مرحله: خوشحاله مور صحت مند ماشوم دپاره قدم اغستل

ورمبي وزټ

اولنۍ مرحله: د کور والا سره رابطه ساتل

1. خود اعتمادی یعنی په خپل قابلیت یقین ساتل
2. په کورونو اعتماد
3. ټول کور واله شاميلول

- کور واله ته دا یاد ګیرنه اوکړئ چه په سیشن کي به هیڅ قسم د پردي خبري نه وی بلکه عام دذهنی او جسمانی صحت معلومات به پکي تاسو ته درکړي کیګی.

4. نفسیاتی پوهنه متعارف کول

- اول به ددي نوم واخلیءچه "خوشحاله مور صحت مند ماشوم په لس قدمه".
- بیا به تاسو په دے رنړا واچوئ چه زمونږ د نفسیاتی پوهنی د ماشوم دپاره دهغه په کورنۍ کښې څه اهمیت دے؟
- ماشوم زمونږ سبا (مستقبل) دے مونږ ټول غواړو چه زمونږ ماشوم دې په ژوند کښې صحت مند، خوشحاله اؤ عقل مند وی.
- په دي سلسله کي به څه معلومات مونږ نن درکړو اؤ د څه معلوماتو دپاره به یوځل بیا راځو.
- دا معلومات په لس قدمه باندې مشتمل دی. په هر قدم کښې د ټولې کورنۍ دپاره د ښېګړې پیغام دے.

5. دکوروالا پوهه معلومول

- اوس دا هم ضروری ده چې کومې خبری تاسو کوئ په هغے ټول کوروالا پوهیږی اؤ که نه؟ ددي متعلق کوروالا نه تپوس اوکی.
- ددے معلومولو نه پس به تاسو ته پته اولګی چې د کوروالا په زړه کښې څه قسمه شک شبه نشته. اؤ تاسو ته به نور هم په معلوماتو ورکولو کښې اسانی پیدا شی.

دوېمه مرحله: رویه یا خوئې خه کول

- رویه خه کول کران کار دے. تاسو به داسې ساده او اسانه طریقه استعمالوئ چې کوروالا ته پکښې څه یره ترهه یا مشکل نه ښکاری.
- تاسو به هغوئې سره په ېے روزګاری، غریب والی او مرګونو خبری نه کوئ.
- زمونږ مقصد د مور او د ماشوم د خه صحت باره کښې پوهه او معلومات ورکول دی.

1. د مخکښې نه تاسو خپل ماشوم دپاره څه کوئ؟

- د کوروالا به تاسو صفت اوکړئ. یعنی هغوئې د اول نه د خپل ماشوم او کور واله په ډېره خه طریقه سره خیال ساتلے دے.
- د ماشوم په خه والی کښې دکور دټولو خلقوڅومره غټ لاس دے.

2. تاسو نور څه کولے شئ؟

- کومه ورځ چې ماشوم یا ماشومه پېدا شی نو هم د هغه ورځی نه کوروالا د دوئې خیال ساتل شورو کړی.
- پکار خو دا ده چې د ماشوم خیال ساتل د هغه د پېدائش نه مخکې شروع کړے شی.
- او دا حله ممکنه ده چې مونږ د هغه مور د صحت خیال ساتل شروع کړو کومه چه د ماشوم یا ماشومې ناجوړه ده.

3. تاسو ته د مور د صحت خیال ساتل ولې پکار دی؟

- د صحت مند ماشوم یا ماشومی پېداکېدو دپاره ضروری ده چې مور صحت منده وی.
- د ماشوم صحت د مور د صحت سره تړلے دے.
- زمونږ مذهب هم په دې ډېر زور اچولې دي چه کومه مور د بچی ناجوړه وی او یا د هغے واړه بچی وی نو دهغے دې ډېر خیال اوساتلے شی.
- ماشوم که هلک وی او که جینۍ دواړه د کوروالا دپاره د الله پاک تحفے دی. نو پکارده چې ډېر په مینه او په رحم د دوئې پالنه او خیال اوساتلے شی.
- ځنکه چې د ماشوم د صحت خیال ساتل د کور والا ذمه واری ده نو هم دغسې د مور دصحت خیال ساتل د ټولو ذمه واری ده.

4. تاسو د مور خیال څنګه ساتلے شئ؟

- تاسو په داسې طریقه د هغے خیال ساتلے شئ چې کله ستاسو دا پوخ یقین جوړ شی چې مورجسمانی اؤ ذهنی طور باندې ټهیک ده.
- دا یوه عامه خبره ده چې داسې زنانه د بچې پیدا کېدو نه وړاندې یا د بچې پیدا کېدو نه پس ذهنی طورلګه پریشانه وی.
- په څلورو میاشتوکښې یوه مور داسې وی چه هغه د حمل دوران کښې اؤ د ماشوم د پیدا کېدو نه پس ذهنی پریشانه وی.
- کېدے شی چې هغه مکر نه کوی اؤ هغے ته په رښتیا څه نه څه پریشانی وی.
- تاسو د هغوئې نه دا تپوس اوکړئ چې اوس اوس ستاسو په کورکښې چاته داسې څه مسله وه یا اوس هم شته؟ لکه خوب نه ورتلل، د ژړا دورے راتلل، لوړه ختمېدل، دردونه، یره اؤ سوچونه کول (خاص کر د ماشوم پیدا کېدو کښې د مرګ یره اؤ یا داکه چرته مړه شم نو د ماشومانو د خیال ساتلو فکر)، چړچړاپن، دغصې دورې، زر ستړی کېدل، د خلقو نه بېزاره کېدل او یا د کور په کارونو کښې دلچسپی کمېدل.

5. اؤ د هغوئې نه تپوس اوکړئ چې ستاسو خو څه سوال نشته؟

- دهغوئې سره دخپل دوئم ویزیټ ورځ اؤ وخت یقینی کړئ.
- هغوئې له دا یادکېرنه ورکړئ چې مونږ امید ساتو چې تاسو ټول به زمونږ دوئم ویزیټ کښې هم موجود یئ.

دویم وزټ

درېمه مرحله: خوشحاله مور صحت مند ماشوم دپاره قدم اغستل

په مختصر طور باندي د خپل وړمبی ویزیټ اهم نقطي کوروالا ته دوباره اووایئ. هغوئې ته وریاد کړئ چې د مور اؤ د راتلونکی ماشوم صحت د یو بل سره تړلے دے.

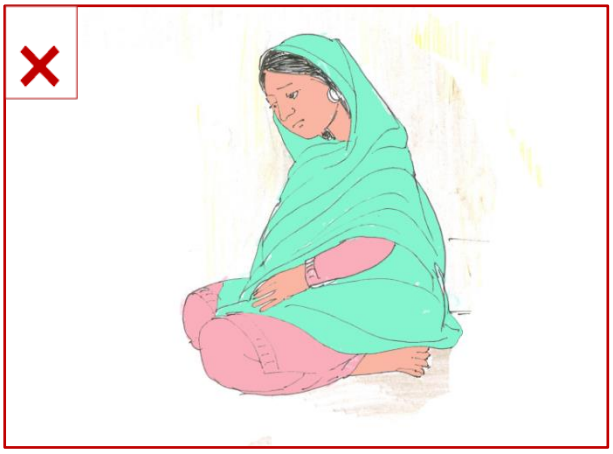
چې کله کوروالا د مور اؤ د ماشوم د صحت په تعلق پوهه شی تاسو به هغوئې ته د لاندینو لسو قدمونو په باره کښې معلومات ورکړئ. دا ډېره ضروری خبره ده چې تاسو هغوئې ته اووایئ چې دوئې د خوشحاله مور اؤصحت مند ماشوم نه لس قدمه لری دی. دا قدمونه اسان دی اؤ پوره کېدے هم شی که چرې ټول کور والا په اتفاق سره دا کار اوکړی.

په شوروکښې هغوئې ته تصویری کتابچه اوښایئ. هغوئې ته اووایئ چې هر یو قدم په دے کتابچه کښې ډېر ضروری دے. دوئې ته اووایئ چې زه امید لرم چې تاسو به ماته په غور سره غوږ کېږدئ.

وړمبے قدم: همدردی سره اوربدل

ورمبے قدم:همدردی سره اؤربدل

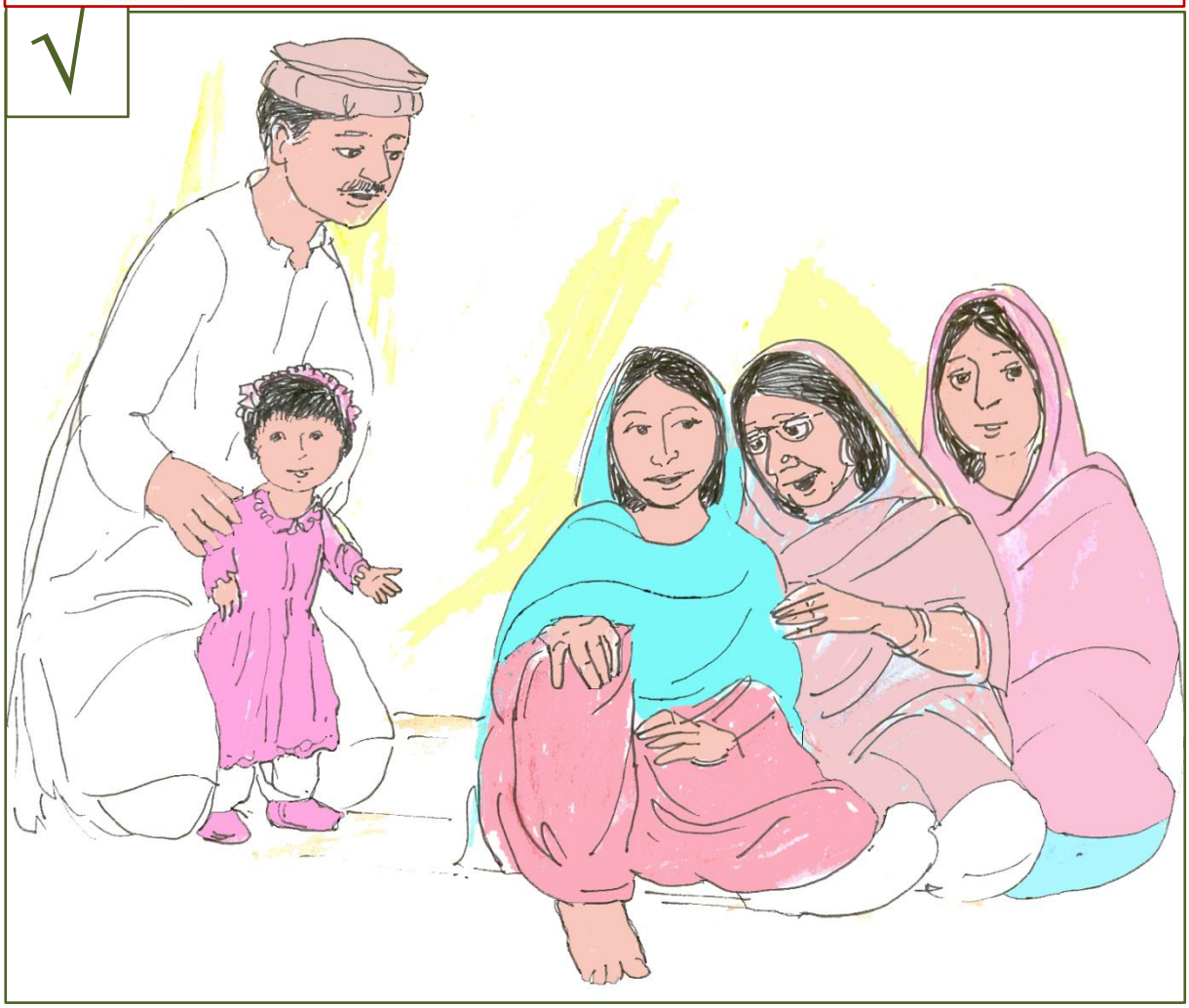
ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چه تاسو مور له د خپل زړه د تشولو موقعه ورکړئ.



د راتلو نکی ماشوم او د ورو ماشومانو د صحت د پاره ضروری ده چه

- ټولو له پکار دی چې د مور خبری په صبر اؤ همدردی سره واؤری. ځکه چه حمل د مور دپاره په کمزورئ لپاسا بله کمزوری ده او دا کمزوری د حمل د نیتي سره زیاتیږی(تفسیر نفسی)
- ددے سره به د مور طبیعت ښه شی اؤ هغه به د کوروالا اؤ د ماشوم ښه خیال اوساتلے شی.
- مور د اؤربدو په وخت څه فیصله اونه کړیء.
- مورته قار یا غصه اونه کړیء.
- د هغے مسلے د لېډی هېلتھ ورکر سره اوکړیء.
- چه مور خوشحاله وی نو ماشوم به صحت مند اؤ خوشحاله وی.

دوئم قدم:یوبل له لاس ورکول

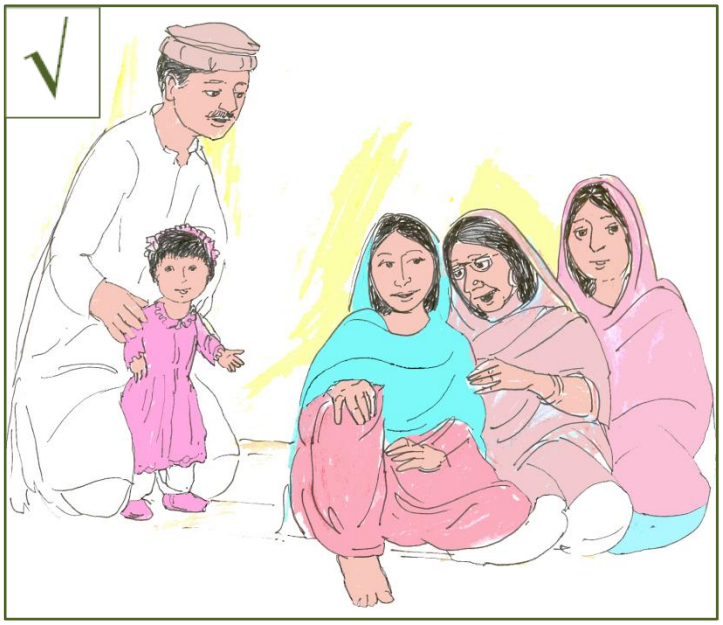


دوئم قدم:یوبل له لاس ورکول

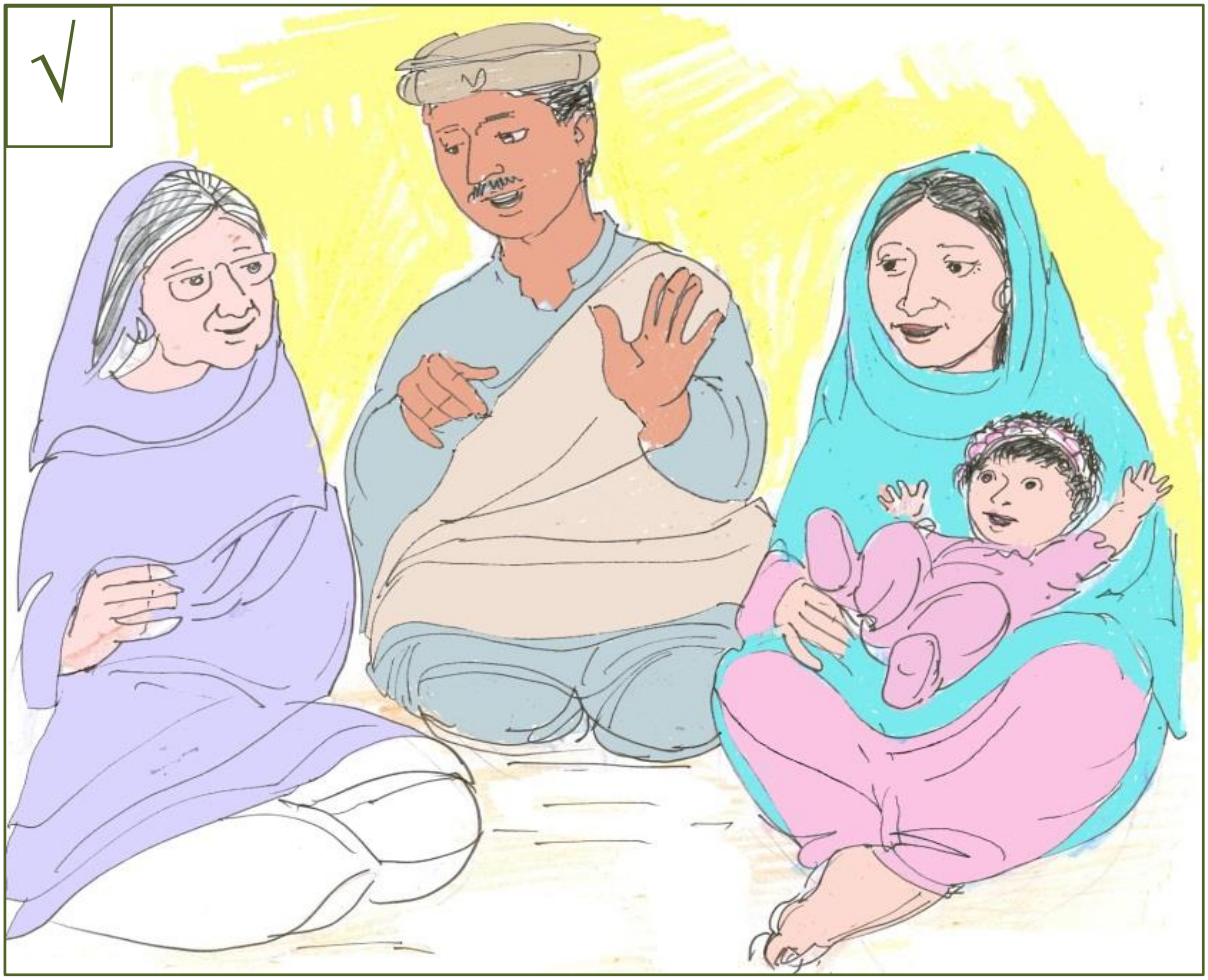
ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چې کور واله له پکار ده چه هغوئې د مور یقین دهانی اوکړی چې ته یواځی نه یې مونږ ټول ستا سره یو.

د راتلو نکی ماشوم او د وړو ماشومانو د صحت د پاره ضروری ده چه

- تاسو ټول د مور یقین دهانی اوکئ چې ته یواځی نه یې. دا یقین دهانی به د مورصحت ښه ساتی.
- مور په دے خبره پوهه کړئ چې د ماشوم پیدائش یو قدرتی عمل دےاؤ دا څه مرض نه دے اؤ که چرې څه مسله وی نو مونږ هسپتال ته تلے شو.
- مور ته په نوم کسان په ګوته کړئ چې کوم دهغے هر وخت مدد ته تیار دی.
- یاد ساتئ چې مور ښه وی نو ماشوم به صحت مند اؤ خوشحاله وی.



دریم قدم: د کور سکون

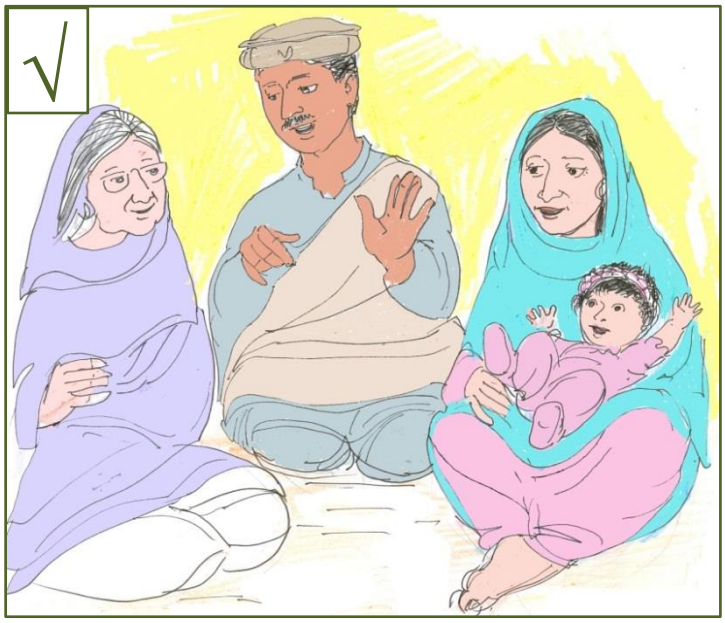


دریم قدم:د کور سکون

ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چې کوروالا په دي خبره پوهه شی چې د ماشوم د فائدے دپاره مور ته د قار، پېغورونو اؤ وهل ټکولو نه ځان اوساتی.

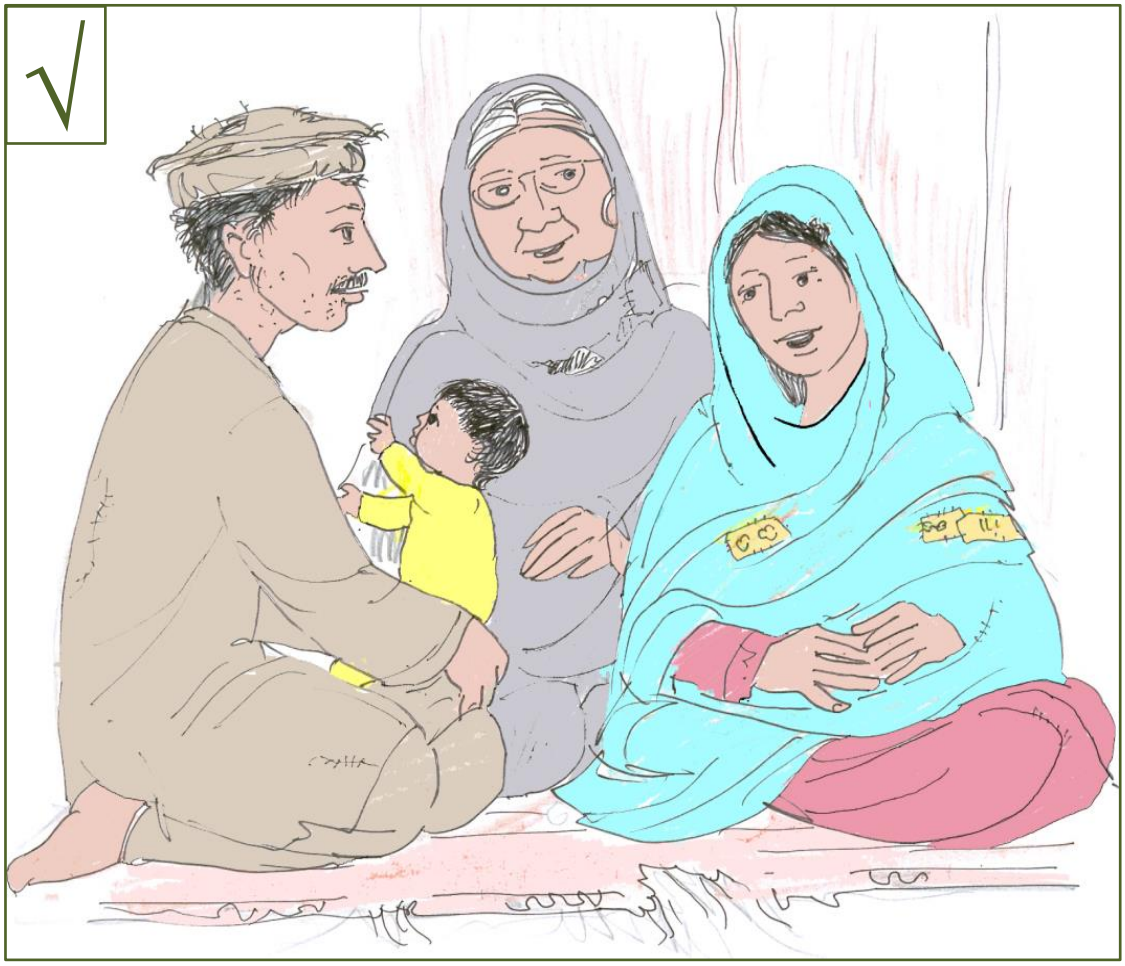
د راتلو نکی ماشوم او د وړو ماشومانو د صحت د پاره ضروری ده چه

- قار، پېغوراؤ وهل ټکول راتلونکے ماشوم یرئ اؤ هغه بیا په راروان ژوند کښې غلے غلے اؤ بے زړه وی.
- یاد ساتئ چې کوم ماشوم چې په کور کښې وهل ټکول اؤ قار اوویني هغوئې ټول عمر دا یره په زړه کښې لری.



- هر قسم وهل ټکول د ماشوم زیان کوے شی. په دي سلسله کي د مجاهد نه روایت دي حضرت عمررضی الله فرماییلیدی چه چا حامله خزي حمل ته زرراورسونو هغه به ددي په کفاره کي یو غلام ازادوی.(کنزالاعمال جلد ۱۵صفحه۳۱)
- ماشوم د فائدے دپاره د مور خیال اؤ فکر کوئ.

څلورم قدم:د حالاتو مقابله کول

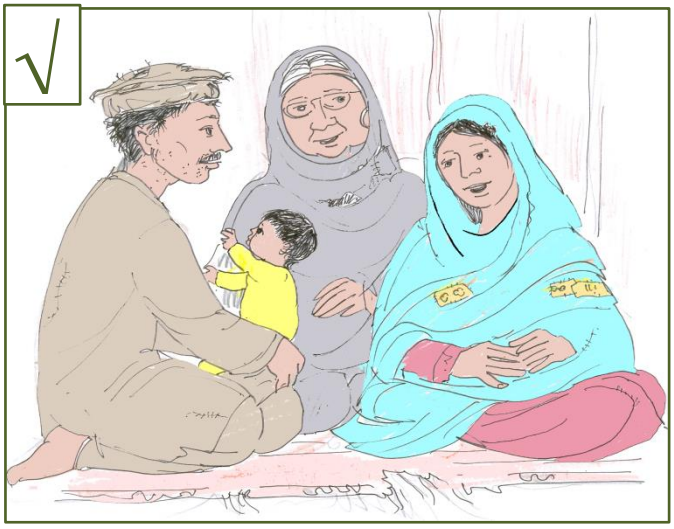


څلورم قدم:د حالاتو مقابله کول

ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چه غريبی د الله د طرفه يو امتحان دے غريبی تا د ژوند د ضرورتونو د اغستونه خو منع کولے شی خو خپل کور والا سره د همدردی سره د پېش کېدو نه چرته هم نه شی منع کولے.

د راتلو نکی ماشوم او د وړو ماشومانو د صحت د پاره ضروری ده چه

- خپله توجه په هغه کارونو کښې اوساتئ چې تاسو کولے شئ نه چې په هغه کارونو کښې چې کوم نه بدلېږی.
- ستاسو ښې خبرې او همدردی به ستاسو کورواله ته ډېرې خوشحالی ورکړی په نسبت د هر بل څيز. دا به په هغوئ کښې د غربت سره د مقابلے طاقت ورکړی.
- په ښه خبرو پيسے نه لګی. خو په دے تاسو زړونه ګټلے شئ. ښه خبره کول هم صدقه جاريه ده.



پنځم قدم:د ارام وخت

پنځم قدم:د ارام وخت

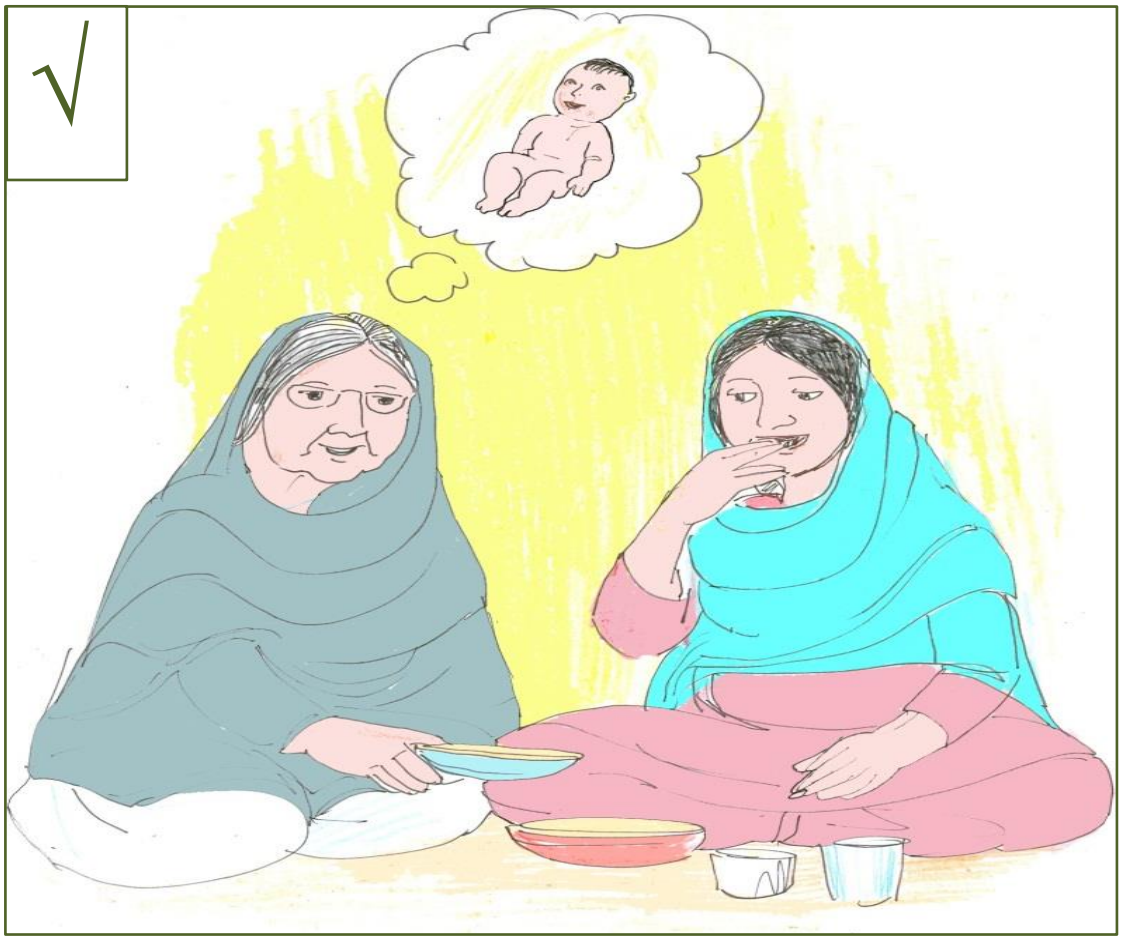
ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چه د مور صحت مند روټين د ماشوم په صحت ډېر ښه اثر غورزوی.

د راتلو نکی ماشوم او د ورو ماشومانو د صحت د پاره ضروری ده چه

- په حمل کښې اؤ د ماشوم د پېدائش نه پس مور ډېره زياته ستړی اؤ بيماره بيماره محسوس کوی دا ډېره ضروری ده چې نور کورواله په سخته کښې وخت په وخت ښېګړه اوکړی اؤ د دے سره په کار کښې لاس اخلاص اوکړی.

- مور له په حمل کښې د ارام دپاره وخت ورکولو سره به ماشوم صحت مند اؤ روغ رمټ وی.
- دماشوم د پېدائش نه پس مور له د ارام موقعه ورکولو سره به مور د خپل ماشوم ښه خيال ساتلے شی.

شپږم قدم:متوازن خوراک

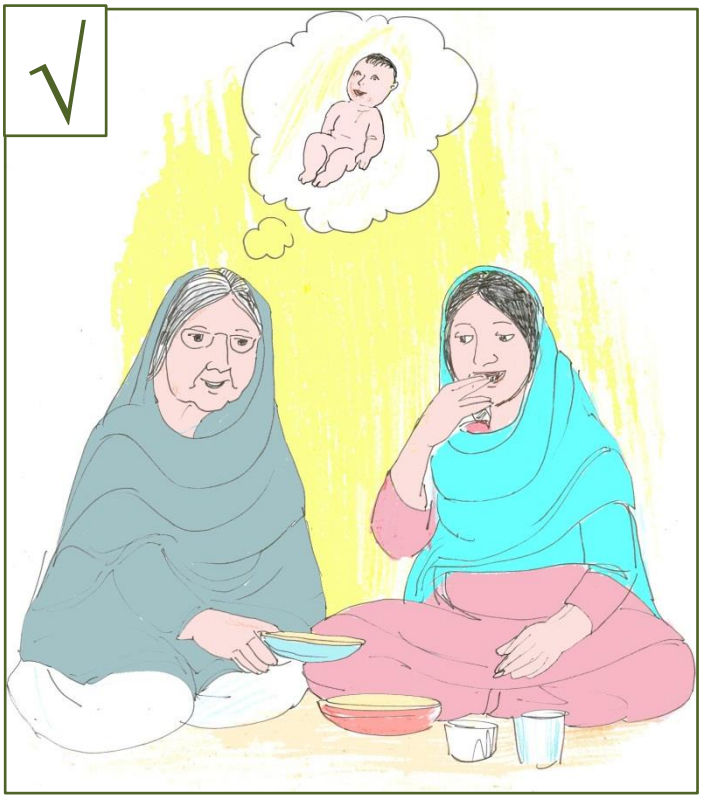


شپږم قدم:متوازن خوراک

ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چه مور دحمل دوران کښې اؤ دما شوم د پیدایش نه پس یو متوازن خوراک اوخری.

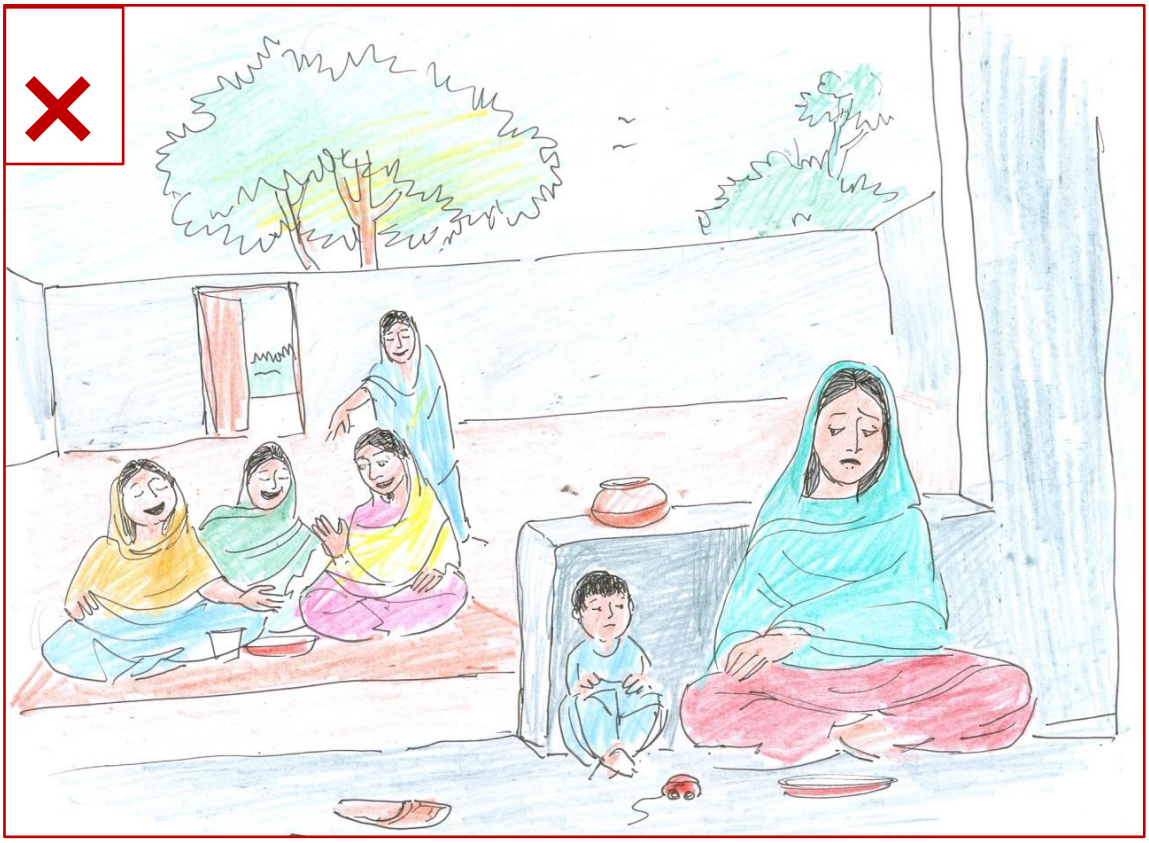
د راتلو نکی ماشوم او د ورو ماشومانو د صحت د پاره ضروری ده چه

- داسي زنانه له پکار دی چې د ورځی درے پیرے خوراک اوخوری. میوے، سبزی اؤ شپږ اته ګلاسه اوبه هم اوڅښکی. لکه څه رنګه چه حضرت مریم ته وویيلی شوی وو چه نشتی یو شي غوره د کجورو تازه نه د راتلونکی ماشوم د پاره. (سورته مریم 24-26)



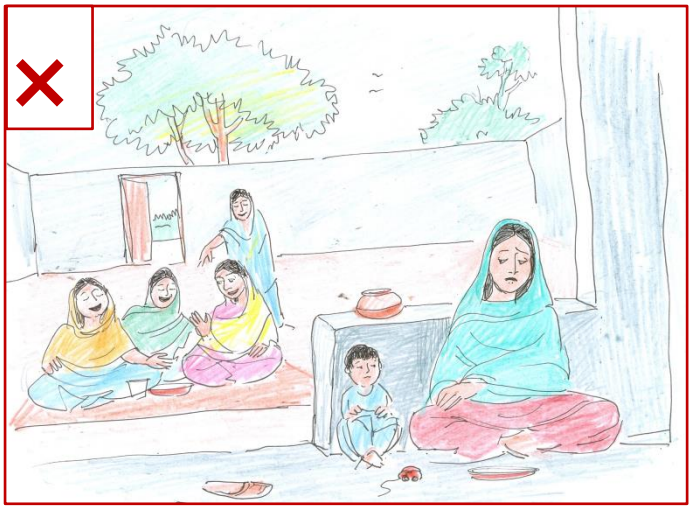
- مور متوازن خوراک خوری نو هغه به یوصحت مند ماشوم پیدا کړے شی.
- کله مور ښه خوراک خوری نو هغه به خپل ماشوم ته د مور پې پوره کړے شی. چې کوم به هغه ماشوم د مرضونو نه بچ ساتی.
- مور له متوازن خوراک ورکړئ د خپل ماشوم د فائدے دپاره.

اووم قدم: مور د خوشحالئ په کارونو کي مشغولول



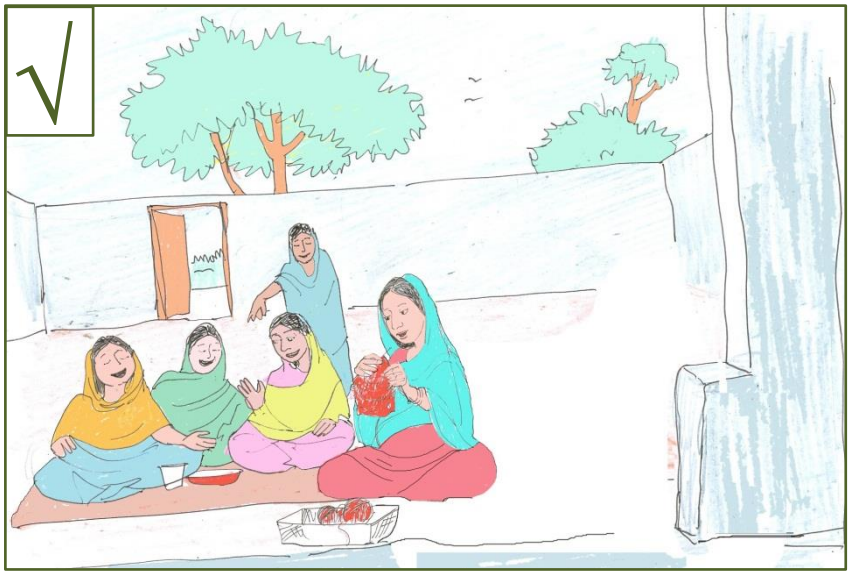
اووم قدم: مور د خوشحالئ په کارونو کې مشغولول

ددې قدم مقصد: ددې قدم نه زمونږ دا مقصد دي چه کور واله مور په داسې روایتی کورانو کارونو کښې مشغلوله کی چه د هغې سوچ بدل شی او هغه ښه محسوس کی.

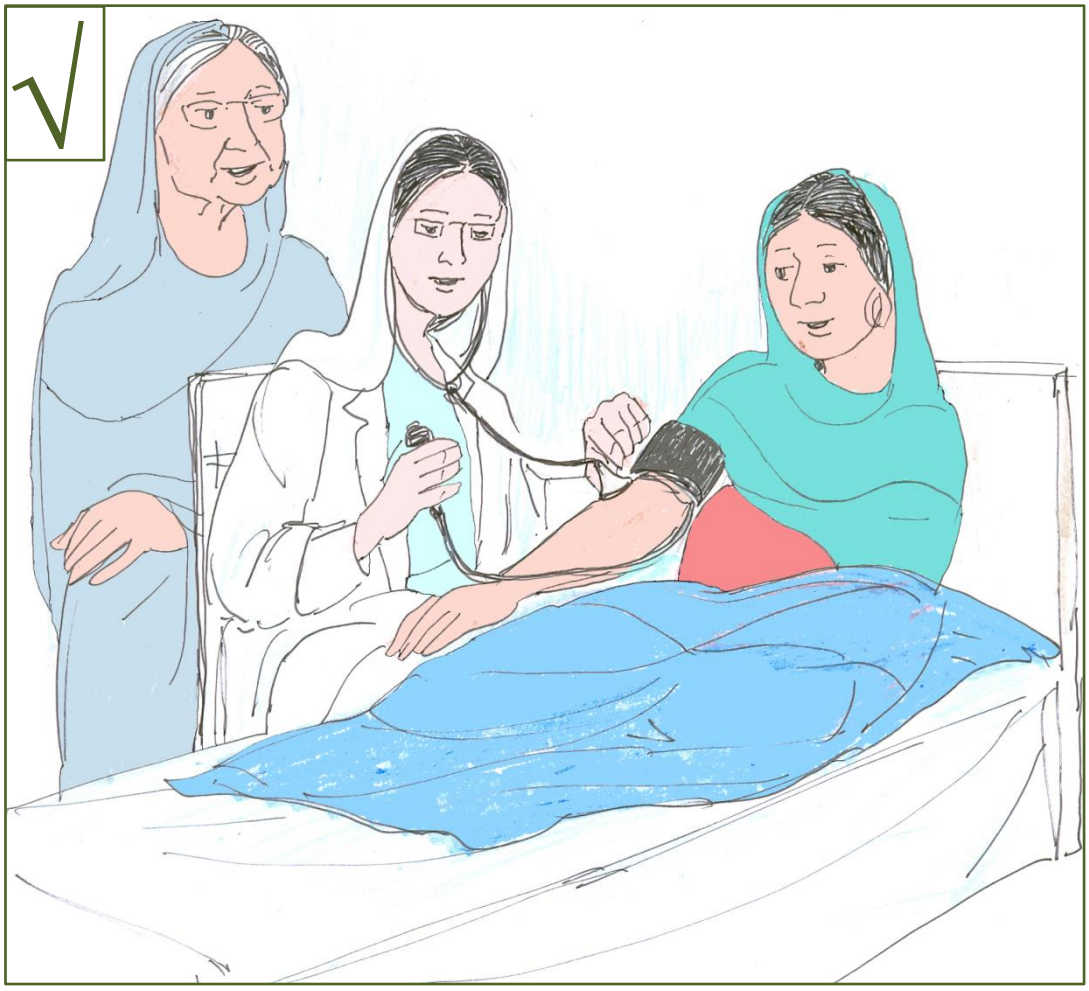


د راتلو نکی ماشوم او د وړو ماشومانو د صحت د پاره ضروری ده چه

- مور په داسې کارونو کښې مشغوله کړی چې کوم هغے ته خوشحالی ورکوی.
- چې کله مور خوشحاله وی نو ماشوم به هم خوشحاله وی.
- داسې اسان کارونه کول پکار وی چې په هغے څه پیسه نه لګی. لکه د خپل خپلوانو اؤ ملګرو کره تلل د چا کره چې هغه په اسانه تلے شی.



اتم قدم:وخت په وخت معائنه کول



اتم قدم:وخت په وخت معائنه کول

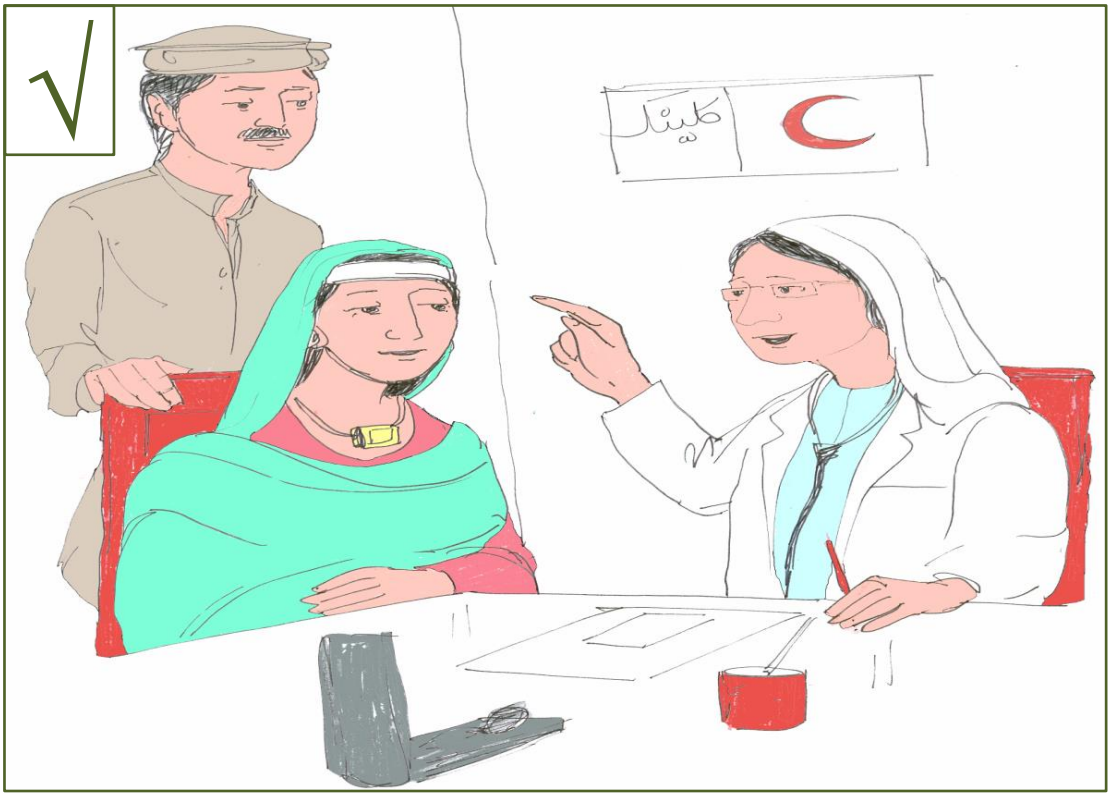
ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چه د ماشوم ناجوړه زنانه له دا ضروری ده چې هغه وخت په وخت خپله معائنه اوکړی. اؤ د لېډی هېلتھ ورکر یا LHV سره مسلسل په رابطه کښې وی.

د راتلونکی ماشوم دپاره ضروری ده چه

- دا معائنې به د حمل حفاظت کوی اؤ دے سره به ماشوم با حفاظته دے دنیا ته راشی.
- وخت په وخت معائنې سره به مور مسلسل نګرانی کښې وی اؤ هغه به د ماشوم د پېداکېدو په وخت د مرګ نه په یره باندې قابو بیا مومی.

- کور والا که د خپل ماشومانو دپاره بهترینی موقعے اؤ ښه ژوند ورکول غواړی نو مور دپاره دا ضروری ده چې هغه د لېډی هېلتھ ورکرLHW سره د خاندانی منصوبه بندی په باره کښې خبره اوکړی.

نهم قدم:موږداکټر له بوتلل



نهم قدم:موږډاکټر له بوتلل

ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چه که چرته تاسو ته LHW یا LHV دا مشوره درکړه اؤ یا تاسو ته دا محسوسه شوه چې مورباوجود ددي اتوء قدمو ښه نه ده(مور ته اوس هم د ډیپریشن نخي شتي یعني خوب نه ورتلل، د ژړا دورے راتلل، لوږه ختمېدل، دردونه، یره اؤ سوچونه کول وغیره وغیره) نو دا ښه خبره ده چې هغه ډاکټر له بوځئ.

- دا عامه خبره ده چې مور د حمل دوران کښې اؤ دماشوم د پېداکېدو نه پس ذهنی پریشانه وی.

- مور ډاکټر له د تلو سره به هغے ته مناسب مدد میلاؤ شی اؤ هغه به ښه شی.
- دعا(تعویزونه، ساختونه) اؤ دوائی دواړه ضروری دی.

لسم قدم:دکورامن اؤ سکون برقرار ساتل

لسم قدم:دکورامن اؤ سکون برقرار ساتل

ددي قدم مقصد: ددي قدم نه زمونږ دا مقصد دي چه د کور امن او سکون د په هرحال کي برقرار اوساتلي شی.

- کوم ماشومان چې خپل مخکښې وهل ټکول وینی کنځل اؤ قار اؤړی نو هغه ماشومان ځان غېرمحفوظه اؤ کمزوری ګڼی.
- هرچاسره همدردی کوئ.
- وهل ټکول اؤ کنځلو نه ځان ساتئ.
- ستاسو دصبراؤ همدردی په اجرکښې به الله پاک ستاسو کورنی خوشحاله اؤ صحت مند ساتی.

خوشحاله مور صحت مند ماشوم په لس قدمه

"خوشحاله مور صحت مند ماشوم په لس قدمه" یو داسي نفسیاتي پو هنه ده چي د کو مي مقصد د حمل دوران کښي اؤ دبچی دپیدائش نه پس میندواو کور واله ته ذهنی پریشانو په باره کښي معلومات ورکول دی. مونږ داطمعه لرو چي دخاندان ټول افراد به دحمل دوران کښي یادماشوم دپیدائش نه پس تر یو کاله پوري د میندو خیال ساتل شروع کړي. ددي سره به په کورونو کي دوخت په وخت ډاکټری معائنے خه والي راشی او د ذهنی پریشانودپیژندګلو پو هه به هم زیاته شی چه نتیجه به ي په وخت د ډاکټر سره مشوره وی.

دراتلونکی ماشوم یا ماشومي صحت دمورد نبنه صحت اؤ خوشحالئ سره تړلے دے. نو پکار دا ده چي دماشوم خیال ساتل دهغه د پیدائش نه مخکي شروع کړے شی. اؤ داحله ممکنه ده چی مو نږ د هغه د مور د صحت خیال ساتل شروع کړو. زمونږ په دي پو هنه کي لس قدمه دی او په هر قدم کښي د تپولي کورنئ دپاره دښیګړي پیغام دے. تاسو دخوشحاله مور اؤ صحت مند ماشوم نه لس قدمه لری یئ. دا قدمونه اسان دی اؤ پوره کیدے هم شی که چري ټول کور والا په اتفاق سره داکار اوکړي.

Human Development Research Foundation

UNIVERSITY OF LIVERPOOL

وړمبے قدم: مورله په همدردئ موقعه ورکړئ چه هغه خپلي یري اوخفګانونه تاسوته اووایئ

دوئم قدم: مورله تسلي ورکئ چي ته یواځي نه یي اؤ مونږ تپول کورواالاستاسره یو

دریم قدم: قار پیغورونه اوهل ټکول په راتلونکی ماشوم او په وړوماشومانوغلط اثرغورزوی اؤ ذیان وجه هم جوړیدے شی.

شلورم قدم: په نبنو خبرو پیسے نه لګی خوزړونه پري ګټلے کیګی.

پنځم قدم: مورله د آرام دپاره وخت ورکړلوسره به راتلونکے ماشوم صحت منداو مضبوط وی اودنورو ماشومانو به هم خه خیال اوساتلے شی.

شپږم قدم: مورله خه خوراک ورکړلوسره به راتلونکے ماشوم صحت مند پیداشی اودے ماشوم ته به دمورد پیوکے نه راځي.

اووم قدم: مور په داسی آسان کارونوکښي مشغوله ساتل پکار یی چی دهغے پرځایه فکرونه اؤسوچونه بدلوی.

اتم قدم: وخت په وخت معائنه دحمل حفاظت اؤ دبیمارونه دمخ نیوی اسانه لارده.

نهم قدم: ددے باوجود که مورخفه یا پریشانه وی نو ډاکټرله بوتلل پکار دی.

لسم قدم: دکورامن اوسکون برقرارساتلوسره به مورا وماشوم دواړه صحت منداو خوشحاله وی.