Arch Womens Ment Health (2007) 10: 211–219
DOI 10.1007/s00737-007-0193-9
Printed in The Netherlands

Archives of
Women's
Mental Health

Original contribution

Challenges and opportunities in developing a psychological intervention for perinatal depression in rural Pakistan – a multi-method study

A. Rahman[1,2]

[1] Division of Psychiatry, University of Manchester, Manchester, U.K.
[2] Human Development Research Foundation, Islamabad, Pakistan

Received 16 November 2006; Accepted 30 June 2007; Published online 6 August 2007

Summary

Perinatal depression, due to its high prevalence and associations with disability, poor infant development and family disruption, is a major public health problem in developing countries. In non-literate and poor communities where depression is not recognised and where there are no specialists, developing a culturally acceptable, deliverable psychological intervention that community members find useful, presents special challenges but also opportunities.

We describe lessons learned from a multi-method formative study to develop and deliver a psychological intervention to depressed mothers and their infants through non-specialist village based health workers.

Keywords: Perinatal depression; mental health; intervention; women; developing countries

Introduction

Depression is the fourth leading cause of disease burden and the largest cause of non-fatal burden, accounting for almost 12% of all total years lived with disability worldwide (Lopez et al. 2006). Postnatal depression is common, affecting approximately 10–15% of all mothers in Western societies (O'Hara and Swain 1996). Higher rates have been reported in developing countries, ranging from 16 to 35% in various cultures (Ghubash and Abou-Saleh 1997; Cooper et al. 1999; Patel et al. 2002). Antenatal depression often precedes postnatal depression (Evans et al. 2001; Rahman et al. 2003) and causes great suffering to the woman and her family (Murray and Cooper 1997). More worryingly, perinatal depression has been found to be linked with infant undernutrition in many low-income countries (Patel et al. 2004; Harpham et al. 2005). In rural Pakistan, infants of depressed mothers are at 4 times higher risk of being malnourished and stunted at 6 months of age compared to infants of psychologically well mothers (Rahman et al. 2004).

Successful non-pharmacological interventions for depressive disorder in developing countries include interpersonal therapy in Uganda (Bolton et al. 2003), psycho-educational groups in Chile (Araya et al. 2003) and individual counselling by minimally trained counsellors in urban Pakistan (Ali et al. 2003). However, surprisingly little research has been done in low-income countries to develop and test suitable interventions for perinatal depression, which, due to its timing, nature and consequences, is a major public health problem.

There is not a single published randomised controlled trial of treatment for perinatal depression, one reason being that very little formative or health services research has been done on developing and delivering such interventions. Studies in the West show that there are a number of effective treatments of this disorder (Austin and Priest 2005). But it is problematic to extrapolate interventions from the developed to the developing world (Patel 2000) – treatments are unlikely to be adopted by professionals and policy makers unless they are shown to be efficacious, cost-effective, integrated in

Correspondence: Atif Rahman, Department of Psychological Medicine, Rawnsley Building, Manchester Royal Infirmary, Oxford Road, Manchester M13 9WL, U.K.
e-mail: atif.rahman@ntlworld.com

existing community health services, and linked to other health problems perceived to be higher in priority. Similarly, unless the recipients perceive them to be of use, they have little chance of being accepted.

We describe lessons learned from our experience of developing and delivering such an intervention to women with mild to moderate depression (and their infants) in the perinatal period. These include a mixture of research methods to investigate the clinical, cultural and health-service delivery context of perinatal depression, selection of an evidence-based approach that suited the population and health-delivery system, development of a structured manualised intervention, and issues involved in its implementation.

Materials and methods

Setting

The study was conducted in the district of Rawalpindi, Pakistan. The district has an area of 5285 square kilometers and population of about 3.5 million of which 57% is rural (Government of Pakistan 1999). The average household consists of 6.2 members. The study area consisted of two out of seven rural sub-districts of Rawalpindi. Most families in the area depend on subsistence farming, supported by earnings of one or more of the adult male members serving in the armed forces or working as government employees, semi-skilled, or un-skilled labourers in the cities. Agriculture depends almost entirely on rainfall, and wheat, maize and millet are the main cash crops. Farmers usually have small land holdings.

Male and female literacy rates are 79.6 and 48.6%, respectively. Infant mortality rates are 84 per 1000 live births. There is one Basic Health Unit (BHU) providing primary care to about 20,000 people. Each BHU is staffed by a doctor, midwife, vaccinator and 15–20 female primary health workers called Lady Health Workers or LHWs. LHWs are members of the local community, have completed secondary school, and are trained to provide mainly preventive mother and child health care and education. Each LHW is responsible for about 1000 women in her catchment area.

We were especially interested in this cadre because of their closeness to the community and work with pregnant and postnatal women. This interest in non-mental health professionals also arose out of necessity – there are no psychologists in the public sector and only 3 psychiatrists (based in Rawalpindi city) for the whole of the district (and beyond). The level of awareness of the population about mental illnesses is very low and stigma attached to them is high (Rahman et al. 1998). For these reasons, the vast majority of common mental disorders remain undiagnosed and untreated in the community.

Pre intervention data ascertainment

A mixture of methods was used to collect data on various aspects of the formative research.

In depth interviews were carried out with 30 perinatally depressed mothers with poor socioeconomic status, 3 months after giving birth. The mothers were selected purposively from an epidemiological study in the same area (Rahman et al. 2003), so that they represented a heterogeneous group (in terms of age, parity, education, socioeconomic status and duration of depression). The women were diagnosed by a trained psychiatrist using the Schedules for Clinical Assessment in Neuropsychiatry (SCAN) (World Health Organization 1994). The qualitative interviews were conducted in the women's home. Using a semi-structured approach, the researcher tried to gain an understanding of psychological, social and cultural aspects of depression and explore thinking-styles and manners of problem solving of the depressed women. Detailed verbatim notes were made during the interview.

Four focus groups were conducted with purposively sampled Lady Health Workers ($n = 24$) of varying age and experience so that they represented a cross-section of the LHW workforce in the 2 sub-districts. Most health workers were themselves mothers and we attempted to understand the issues involved in delivering a psychological intervention for perinatal depression in a rural setting. We explored the LHWs' experience of providing health-care to mothers in their areas, focussing on difficulties they faced in accessing families. Health beliefs and attributions, help-seeking behaviour and presence of existing resources (such as social support) were explored. We attempted to understand the health workers' day-to-day activities and assess how we could integrate our intervention into their routine work. The groups followed a semi-structured format and served to guide the discussion while permitting maximum elaboration of participant response. Issues raised in one focus group were used as triggers for further ideas. Special care was taken by the experienced moderator to put LHWs at ease to allow them to communicate freely.

Using the same themes, we carried out face-to-face key-informant interviews with 6 primary care staff including 2 primary care doctors, 2 midwives and 2 traditional birth attendants. We explored how the LHW-led intervention would fit in with the primary and traditional health care system without tension, conflict or issues of territoriality.

We examined data from our epidemiological study in which we had explored psychosocial risk factors for pre and postnatal depression in the same study area (Rahman et al. 2003).

Data synthesis involved a systematic triangulation process by which findings from multiple methods, data sources and theories were combined to obtain an in-depth understanding of the issues involved in designing and delivering the proposed intervention. A panel of experts reviewed the synthesised data to select the theoretical approach most suited to the population that could be adapted in line with conclusions drawn from the data.

Post intervention data ascertainment

Once the intervention had been developed, 42 LHWs were trained to deliver it. Training comprised an initial two days workshop and a one-day refresher conducted three months after the first training. The LHWs then proceeded to apply the programme with depressed women in their respective areas. These women were diagnosed by trained psychiatrists using a standardised questionnaire as part of a larger evaluation study of the intervention (currently in progress). Using quantitative methods, feedback was obtained from LHWs about the training and intervention. Feedback was obtained from mothers about the use-

fulness of the intervention. Descriptive analysis was carried out of the feedbacks.

During delivery of the intervention, all LHWs were supervised monthly in groups of 10 by a mental health professional (AR) and a public health expert. During supervision, LHWs discussed problems and shared experiences. Solutions were not prescribed by the supervisors but were generated through 'brain storming' sessions. Local language, customs and practices were incorporated in these solutions. Supervisors took notes of these sessions. Some results are discussed as case-studies.

Ethical committees of the University of Manchester, UK, and the Institute of Psychiatry, Rawalpindi, approved the study.

Results

Details of the results of this study are provided in Tables 1–5.

Table 1. Themes and examples arising from in-depth interviews of depressed women

Thoughts and feelings in relation to self

- Being ill is my fate; poor folk like us are born to be unhealthy
- Due to my circumstances there is nothing I can do to improve my health
- What does an illiterate person like me know about health matters
- If I have a problem with my health, only a doctor can find it out
- I am so tense I can never sleep well; I feel tired all the time
- I have aches and pains in my body/I feel weak/have backache/vaginal discharge – this must mean I have a serious illness
- I am unwell because of the effects of 'tawiz' (black magic) from an evil person
- My illness must be a punishment for my deeds; there are many things wrong in my life
- I have too many responsibilities, looking after my own health is low on my priority
- My health doesn't matter – it's my family's health that's important
- I can't be bothered to look after myself because I have too much to do

Thoughts and feelings in relation to newborn

- I don't have any positive feelings for my baby
- The baby is too young to have feelings for me – all it needs is feeding and cleaning; the baby is all work and no fun
- My family is not happy because I gave birth to a baby girl; I have mixed feelings about my baby girl
- My breastmilk is not good enough for the baby
- We won't be able to afford toys and good schools for our baby
- My baby will get ill if it's in her 'kismet' (fate)
- My baby is always ill with diarrhoea because I am not a good mother
- If the baby becomes ill it will be my fault – I am not a good mother

Thoughts and feelings in relation to significant others

- My family doesn't care about me; they don't understand my feelings
- I am considered an 'outsider' by my family
- I am not a good wife – I deserve to be mistreated
- I feel anxious and shy discussing my problems with others
- I don't meet other people because I feel inferior
- I don't have the confidence to talk about my health problems with my family or the doctor
- If I go out people will gossip about my going out on my own
- If I am assertive people will think I am not of good 'character'

Table 2. Requirements of a psychological intervention at various levels

Patient/family level

- Should focus on maternal and infant health rather than maternal depression
- Should be active and empowering
- Should be participatory

Health worker level

- Should be integrated
- Should be simple and pragmatic
- Should avoid stigmatization

Health system level

- Should be evidence-based
- Should move away from 'medical model'
- Should be community or home-based
- Should be culturally adapted
- Should consider inherent weaknesses of health system

Pre-intervention results

Table 1 describes the results from the in-depth interviews with depressed women. Their cognitions and thinking styles were grouped into 3 broad themes: a) The woman's cognitions about her own self – her mood, health and well-being; b) her thoughts and feelings about her newborn; and c) her relationship with family members, friends and the community. In relation to their own self, depressed women felt helpless and showed a degree of fatalism about their circumstances; they somatised their symptoms and attributed them to superstition; and they considered their health needs secondary to those of their family. In relation to their infant, they worried about a reciprocal lack of emotions and were especially ambivalent if the newborn was female; there was a tendency to blame fate or themselves if the baby was unwell; and there was a preoccupation with the infant's future. In relationship with significant others, common themes revolved around feelings of being isolated from and ostracised by the extended family; not living up to 'expectations'; and feelings of inferiority, lack of confidence and being weighed down by societal codes of conduct.

Table 2 summarises the themes emerging from the focus groups and key-informant interviews. These were grouped at 3 levels.

At the *patient and family level*:

- Many women and their families did not see depression as a problem requiring intervention. Improving the mother's psychological health through 'talk therapy' was not perceived to be a tangible gain. Some women felt stigmatized to be labeled depressed. They felt it would be difficult to access women and their families if the agenda were to treat their depression.

- However, efforts to achieve optimal infant development were an agenda shared by all key family members – the mother, husband, her own family and her in-laws. This agenda could provide a window of opportunity by which mothers (and their families) could be accessed for intervention. Within this shared agenda, differences could be put aside and efforts to improve the physical and psychological health of the primary caregiver, the mother, could be addressed without much resistance or stigma.
- The intervention should not just be focused on the mother, but include all family members. Health promoting activities involved the whole household and could not be practised in isolation. Family participation was important to make effective use of family members for support and assistance of mother and infant. Shared goals would also help remove the possible 'paranoia' of family members, e.g., ''they are brain-washing our womenfolk away from our traditional way of life''.
- Changes in thinking and attitude had to be accompanied by changes in behaviour and action. Mothers must therefore not become passive recipients of advice but actively partisipate in seeking and practising health-promoting activities.

At the *health worker level:*

- LHWs already had a heavy workload. The intervention must therefore be integrated into existing LHW training so that rather than being perceived an extra burden, it facilitated their work. LHWs main job was to educate and motivate their clients and they would gain from training in special techniques that facilitated this process.
- The intervention should be easy to follow, even by non-literate clients. There should be tangible outcomes, which clients should be able to monitor. The contents of the intervention should be tailored according to the needs of the mother (and her infant) at each stage of the perinatal period.
- The intervention should be called ''training'' rather than ''therapy'', and the therapist ''trainer'' rather than ''mental health worker''. This would avoid stigma and emphasize the active and non-medicinal aspect of the intervention. Under the trainer's guidance, mothers would share in setting health-benefiting goals.

At the *health system level:*

- Many non-governmental organizations (and sometimes, even government agencies), driven by their own or their donors' socio-political agendas, introduce psychosocial interventions that have little evidence base. Official health providers or the community are not consulted and they are sceptical of such programmes.
- The health system is steeped in the medical model, and people have come to expect only physical remedies for all ills (pills, injections and IV infusions) from health professionals. The proposed intervention would rely on psychological techniques rather than physical or pharmacological therapies. It was therefore crucial that both the health worker and the family moved away from ''medical model'' of care.
- For the same reason it was important to deliver the intervention in the community or at home rather than at the health centre. Lady Health Workers routinely visited mothers at home during pregnancy and after childbirth. They were therefore the most suitable people to deliver this type of intervention. However, they would need training in special techniques to achieve this.
- Many public health interventions were seen as 'western' by the local population. The intervention should be culturally appropriate. This could be achieved through careful field-testing of the intervention during the development phase. For example during the *chilla* (40-day confinement of mothers after delivery), women did not go out. It would not be appropriate to suggest outdoor activities during this period.
- Although the National Lady Health Workers Programme is a national health priority for primary care in Pakistan, the service is patchy in certain areas and non-existent in some. Other problems include poor selection, unmotivated health workers, poor supervision structures and generally weak governance. An intervention that relies on the LHWs should be cognisant of these realities.

Development of the Thinking Healthy Programme

Based on the above findings and a review of empirical-based therapies for depression by a panel of local mental health experts, *Cognitive Behaviour Therapy* (CBT) was chosen as the approach that could be adapted for use in the rural population. The 'here and now' problem-solving CBT approach was felt to meet the requirements reported above. Based on this approach, a fully manualised intervention called the Thinking Healthy Programme (THP) was developed. The essential features of this programme are outlined in Table 3.

The principles of CBT were simplified for use by local health workers and a 3-step approach was adopted that was repeated throughout the programme. The first step

Table 3. Essential features of the Thinking Healthy Programme (THP)

Theoretical basis	Based on principles of Cognitive Behaviour Therapy (CBT)
Delivering agent	Village-based female (lady) health workers (LHWs). Generally completed high school, 6-months training in preventive maternal and child health. Intervention is simple enough to be delivered by lay-counsellors where LHWs do not exist
Structure of intervention	16 sessions organised in 5 modules: 4 weekly sessions (Module 1 – *Preparing for the baby*) in the last month of pregnancy, 3 fortnightly sessions (Module 2 – *The baby's arrival*) in the first postnatal month; 9 monthly sessions (Modules 3–5 – *Early*, *Middle and Late Infancy*) thereafter; each session approx. 45 min
Structure of session	Active listening, followed by 3 steps – step 1: identifying unhealthy (unhelpful) thinking; step 2: replacing unhealthy thinking with healthy thinking; step 3: practicing healthy thinking and behaviours. Homework given for each session
Areas covered	Each module covers 3 areas – mother's mood and personal health; mother-infant relationship; relationship of mother with significant others
Tools	Training manual with step-by-step instructions for conducting each session; activity workbooks for mothers; health calendar for families to monitor progress and activities THP manual cross-referenced with LHW Training Manual
Training	2-day training workshop followed by 1-day refresher after 4 months; includes training video with actors conducting sessions; role-plays and discussions
Supervision	Monthly half-day sessions in groups of 10; discussion of problems and 'brain-storming' for solutions. Checks for fidelity.
Additional features	Use of pictures in addition to words for non-literates; emphasis on being active listeners as well as trainers; special training session on dealing with difficult situations

Table 4. Satisfaction levels of mothers with intervention after 4 months ($n = 164$)

Question	Response ($N/\%$)				
	Very useful	Useful	Don't know	Not useful	Harmful
How useful do you find this programme?	79 (48)	77 (47)	7 (4)	1 (1)	0

involved the identification of unhelpful or unhealthy thinking styles and behaviours in these women. LHWs were trained to educate mothers about such unhealthy thinking styles and how to identify them. Identifying such unhealthy thinking styles enabled mothers to examine how they felt and what actions they could take when they thought in this way. The second step was learning to replace unhelpful or unhealthy thinking with helpful or healthy thinking: The programme helped mothers question the accuracy of such thoughts and suggest alternative thoughts that were more adaptive. We modified the traditional CBT approach by involving significant family members in suggesting alternative healthy thinking. Thus they assisted the mother in challenging and replacing unhealthy thinking with healthy thinking. In the third step, the programme suggested activities and 'homework' to help mothers to practise 'healthy' thinking. Carrying out these activities was essential for the success of the programme. Mothers received health education and other materials tailored to their individual needs to help them progress between sessions. The focal point of these activities was a designated ''health corner'' in each house, and the ''health calendar'' that was provided to each mother. The calendar helped the LHW and mother to monitor homework and chart progress.

The three steps were applied throughout the programme to three areas relevant to mother and infant health during pregnancy and after childbirth – the mother's personal health, the mother-infant relationship, and the psychosocial support of significant others.

Using culturally appropriate illustrations, the intervention used imagery techniques to facilitate work with mother and families. Using characters depicting mothers, infants and other family members, the illustrations helped clients identify problems in thinking and behaviour that might apply to their own situations. They were then shown alternate sets of illustrations that challenged these maladaptive patterns of thought and be-

Table 5. Health workers feedback on intervention after 4 months ($n = 42$)

Question	Response ($N/\%$)				
	Definitely yes	Somewhat	Don't know	No	Absolutely no
Is the THP training relevant to your own work?	36 (86)	6 (14)	0	0	0
Is THP an extra burden in your everyday work?	1 (2)	0	4 (9)	18 (43)	19 (45)
Are you able to understand the concepts explained in your training?	35 (83)	7 (17)	0	0	0
Are you able to communicate these concepts to the mothers you see?	21 (50)	21 (50)	0	0	0

haviour. By using the illustrated characters, the health workers could avoid direct confrontation with women and their families where it was not appropriate. It facilitated work with non-literate women. These illustrations were part of the health calendar left in the clients' home and served as visual cues in between sessions.

Post intervention feedback

The feedback from LHWs and mothers are presented in Tables 4 and 5.

Discussion

The Thinking Healthy Programme (THP) was developed after extensive formative research to understand the challenges and opportunities involved in delivering a psychological intervention by non-specialist primary care workers to depressed, mostly non-literate, rural women in a low-income country. The intervention appeared to have been successfully integrated into the primary care workers routine and was perceived to be useful by the recipients.

The Thinking Healthy Programme was developed taking into account the experience of depressed rural women, thus addressing the criticism that health professionals do not pay attention to the individual and sociocultural context of the patient's problems (Small et al. 1994). Our findings add not only to the evidence that perinatal depression is a universal rather than Western condition (Oates et al. 2004), but also indicate that many of the themes identified have much in common with women living in developed countries. For example, in a qualitative study of postnatally depressed Swedish women (Edhborg et al. 2005), it was found that the new mothers struggled with issues related to the self, the child, and the partner. They expressed feelings of loss of who they were, felt overwhelmed by the responsibility for the child, and struggled with feelings of abandonment by the partner. They often felt like ''bad mothers''. Most mothers were reluctant to speak about their feelings and they assigned their depressed mood to personal weakness rather than illness. There were also differences. Rural Pakistani women tended to somatise and be superstitious, and were more preoccupied with feelings about the family and community than just the partner. Also, they did not perceive their condition to be an illness.

The intervention is based on principles of CBT, a form of psychotherapy that emphasizes the important role of 'thinking' in how we feel and what we do (Beck et al. 1979). It is an evidence-based and structured form of talking therapy that aims to alter the cycle of unhelpful or unhealthy thinking (cognitions) and the resulting undesirable actions (behavior). Research has shown that CBT is very effective in breaking this cycle in people with a number of problems such as depression, poor confidence, lack of assertiveness, inadequate coping skills, passivity and difficulty with relationships (Butler et al. 2006). CBT provides clear structure and focus to dealing with health and psychosocial problems. Clients take on valuable ''homework'' projects to speed up their progress. These assignments – which are developed as much as possible with the clients' active participation – extend and multiply the results of the work done during a session.

CBT is one of the few 'talking' therapies that have been found to be effective for psychological problems in a low-income country (Sumathipala et al. 2000). However, the use of CBT principles by health workers with only a basic education has not been tested before in a developing country. Indeed, use of this relatively sophisticated technique in such a manner may be regarded with scepticism by some. However, closer examination of the settings and population reveals strengths that can be utilised. Firstly, the health workers are from the same community as patients, and understand the sociocultural context of their problems. Their existing job includes visiting household and talking to the family about primary prevention. Many are trusted 'health educators' within their community and thus are able to adopt the CBT therapist's role and access the families with relative ease. Secondly, the epidemiological association between perinatal depression and poor infant growth enabled us to have an *a priori* agenda of achieving optimal infant development through the intervention. By default, most activities for infant development were directed towards the mother, but may not have been received so enthusiastically if maternal depression had been the agenda. Infant care, on the other hand, was seen as a shared responsibility and this helped engage not only the mother, but the whole family in a supportive role for the mother. It also helped LHWs negotiate difficult situations within the therapeutic process by referring back to this common mutually agreed agenda. As one LHW eloquently stated, ''Because everyone wants their child to be the best, the newborns served as both my sword and shield in working for their mothers''. Thirdly, because maternal and child care were familiar subjects, health workers found it easier to 'make sense' of the intervention and integrate it with their work.

Quantitative feedback obtained from the mothers and LHWs indicated a very high response in favour of the intervention. While acquiescence may have been a factor during formal assessment, we had an overwhelmingly similar response during supervision. Majority of the LHWs felt it gave a structure to their work and the skills they learned made them more effective health workers.

While the target of the intervention was mothers with mild to moderate *depression*, the term itself was avoided throughout the intervention. Instead the term 'stressed' or 'burdened' was used where necessary. This was to avoid the medicalization of a condition that, in the majority of cases, was associated with psychosocial risk factors such as financial difficulties, poor family and marital relationships and inadequate social support (Rahman et al. 2003). Similar studies in India show that while postnatal depression is a valid construct amongst Indian women, the emotional distress is interpreted from the context of social adversity, poor marital relationships and cultural attitudes towards gender rather than a biomedical psychiatric category (Rodrigues et al. 2003). It may be argued that by avoiding the term 'depression', we were perpetuating the stigma attached with this disorder, or worse, being unethical by not disclosing a clinical condition to the sufferer. However, we felt justified in using this approach because by operating within this framework (as opposed to treating an illness) LHWs were able to address some of the associated risk factors using resources from within the family and larger community. For example in a case where poverty and the husband's chronic unemployment were an underlying issue in the mother's depression, the LHW used CBT techniques to motivate her to take a small loan from the government's micro-credit scheme. The money was used to purchase a buffalo to sell its milk for profit (the LHW had personal experience of such a venture and was able to guide her). The woman was able to return the loan, gained tangibly from the intervention, both materially and in self-worth and confidence, and this led to marked improvement in her depressive symptoms. Another example was a support group of neighbours set up by an LHW to help a socially withdrawn depressed mother reconnect with the community. In the third, remarkable example of collaborative work, the LHW developed a trusting therapeutic relationship with a woman who was able to disclose an abusive relationship with her husband. The LHW approached the husband's *pir* (spiritual mentor) and convinced him to counsel the husband against this behaviour. This led to a dramatic improvement in his behaviour towards his wife. Other examples show that LHWs were able to adapt the intervention according to needs of individual mothers. With some, the emphasis was on empathic listening; with others it was help with infant care; some required attention to their physical health and nutrition; others needed help to improve interpersonal relationships.

These examples show that while the intervention had a CBT framework, it was multimodal, psychosocial and pragmatic. We felt this flexible approach not only suited the condition they were treating, but also took advantage of the LHWs' position and resourcefulness within the community. These examples also show that depression in women can often be traced to social circumstances of their lives. Understanding the sources of ill health for women means understanding how cultural and economic forces interact to undermine their social status. As Desjarlais et al. (1995) state: "If the goal of improving women's well-being from childhood through old age is to be achieved, *healthy policies* aimed at improving the social status of women are needed along with *health policies* targeting the entire spectrum of women's health needs." But it is often hard to develop an impetus to change the direction of such deeply-entrenched forces. We believe that linking maternal well-being to child health can provide a universally acceptable 'entry-point' for community health workers to create such an impetus and lead to policies aimed at improving the social status of women.

To a large extent, the intervention was dependent on the LHWs' motivation and interest, and this was maintained through regular supervision and monitoring. In this study, half-day monthly supervision sessions for groups of 10 LHWs were carried out jointly by a psychiatrist (AR) and a mother-and-child health expert. Brain-storming sessions enabled health workers and supervisors to generate indigenous solutions to sometimes intractable problems. Religious beliefs and traditional wisdom were used where beneficial. Sharing of difficulties and recognition of successes helped motivate the group. Supervision was also important to help LHWs negotiate difficult situations and to understand their limitations in working with some of the most difficult families. While the training workshops and manual addressed these issues, we felt supervision was the most valuable aspect of training. Supervisors ideally need to be professionals with experience of CBT and a working knowledge of maternal and child health issues.

A potential limitation of this approach is its sustainability and feasibility at a larger public health level. Continuous work with depressed and psychosocially de-

prived women (in addition to a number of other official duties) could lead to burnout or a drop in efficiency of LHWs. If such a programme were to be implemented at a larger scale, it would be necessary to have suitable training, supervision and monitoring mechanisms in place. Poor governance, corruption and low morale of the workforce are serious obstacles to implementing such processes. However, our experience shows that learning integrated new skills that help bring about real change in people's lives give special satisfaction and prestige to the health workers, thus lifting their morale and motivation.

The other potential problem is the utility of this approach in countries or areas where there are no LHWs. We feel the approach is simple enough to be taught to volunteer peer-workers and family members. With literate women, it is even possible to have self-help versions of the intervention. The approach is especially suited to the work of non-governmental organizations that, through motivated workers, provide a fair share of health and social care in many poor countries but sometimes lack interventions with an evidence base (Rahman 2005).

In our experience, the intervention need not necessarily be confined to women who are diagnosed depressed. It has the potential to be used as a health communication tool for all women who live in areas that are socio-economically deprived and have poor maternal and infant health indicators. Current approaches to improve child health call for the promotion of a limited set of household behaviours that have a direct link to the prevention and cure of common childhood illnesses (Claeson and Waldman 2000). Such activities often require existing beliefs and practices to be challenged. Using techniques of CBT, the Thinking Healthy Programme has the potential to achieve this in a culturally acceptable manner. It can also provide a mechanism to address social issues such as gender discrimination and archaic health beliefs in areas with low health literacy.

Definitive evidence of efficacy of the intervention can only be obtained through carefully conducted randomised controlled trials. We are currently testing the Thinking Healthy Programme through a cluster randomised trial in rural Rawalpindi. Primary outcomes include maternal depression and infant growth while other outcomes include infant feeding practices, rates of diarrhoea in the infant, rates of immunization, and levels of social support for the mother, among others.

It would be difficult to envisage the realization of at least four out of eight Millenium Development Goals (United Nations 2001) – infant malnutrition, child mortality, maternal health, and female gender disadvantage – without addressing maternal mental health. Policy and research agendas increasingly call for efforts to address the problem of very high burden from common mental disorder in developing countries. This call for action must be matched with greater understanding of the challenges as well as opportunities to meet those challenges.

Acknowledgements

Richard Harrington (late) and Francis Creed for their useful suggestions on the intervention; Zafar Iqbal and Najia Atif for carrying out part of the qualitative work. Zaeemul Haq for translating the manual into Urdu, assisting with training, supervision and assessment. This research was funded by a career development fellowship awarded to Atif Rahman by the Wellcome Trust, UK.

References

Ali BS, Naeem S, Gul A, Mubeen S, Iqbal A (2003) The effectiveness of counselling on anxiety and depression by minimally trained counsellors. Am J Psychother 57: 324–336

Araya R, Rojas G, Fritsch R, Gaete J, Rojas M, Simon G, Peters TJ (2003) Treating depression in primary care in low-income women in Santiago, Chile: a randomised controlled trial. Lancet 361: 995–1000

Austin M-P, Priest SR (2005) Clinical issues in perinatal mental health: new developments in the detection and treatment of perinatal mood and anxiety disorders. Acta Psychiatr Scand 112: 97–104

Beck AT, Rush AJ, Shaw BR (1979) Cognitive therapy for depression. Wiley, New York

Bolton P, Bass J, Neugebauer R, Verdeli H, Clougherty KF, Wickramaratne P, Speelman L, Ndogoni L, Weissman M (2003) Group interpersonal psychotherapy for depression in rural Uganda. JAMA 289: 3117–3124

Butler AC, Chapman JE, Forman EM, Beck AT (2006) The empirical status of cognitive-behavioral therapy: a review of meta-analyses. Clin Psychol Rev 26: 17–31

Claeson M, Waldman RJ (2000) The evolution of child health programmes in developing countries: from targeting diseases to targeting people. Bull World Health Organ 78: 1234–1245

Cooper PJ, Tomlinson M, Swartz L, Woolgar M, Murray L, Molteno C (1999) Post-partum depression and the mother-infant relationship in a South African peri-urban settlement. Br J Psychiatry 175: 554–558

Desjarlais R, Eisenberg L, Good B, Kleinman A (1995) World mental health: problems and priorities in low income countries. Oxford University Press, Oxford

Edhborg M, Friberg M, Lundhi L, Widstrom A-M (2005) ''Struggling with life'': narratives from women with signs of postpartum depression. Scand J Publ Health 33: 261–267

Evans J, Heron J, Francomb H, Oke S, Golding J (2001) Cohort study of depressed mood during pregnancy and after childbirth. BMJ 323: 257–260

Ghubash R, Abou-Saleh MT (1997) Postpartum psychiatric illness in Arab culture: prevalence and psychosocial correlates. Br J Psychiatry 171: 66–68

Government of Pakistan (1999) District census report of Rawalpindi. Population Census Organization, Islamabad

Harpham T, Huttly S, De Silva MJ, Abramsky T (2005) Maternal mental health and child nutritional status in four developing countries. J Epidemiol Commun Health 59: 1060–1064

Lopez A, Mathers C, Ezzati M, Jamison D, Murray C (2006) Global burden of disease and risk factors. Oxford University Press and the World Bank, Washington

Murray L, Cooper P (1997) Postpartum depression and child development. Guilford, New York

Oates MR, Cox JL, Neema S, Asten P, Glangeaud-Freudenthal N, Figueiredo B, Gorman LL, Hacking S, Hirst E, Kammerer MH, Klier CM, Seneviratne G, Smith M, Sutter-Dallay AL, Valoriani V, Wickberg B, Yoshida K; TCS-PND Group (2004) Postnatal depression across countries and cultures: a qualitative study. Br J Psychiatry 184 (Suppl 46): 10–16

O'Hara MW, Swain AM (1996) Rates and risk of postpartum depression: a meta-analysis. Int Rev Psychiatry 8: 37–54

Patel V (2000) The need for treatment evidence for common mental disorders in developing countries. Psychol Med 30: 743–746

Patel V, Rodrigues M, DeSouza N (2002) Gender, poverty, and postnatal depression: a study of mothers in Goa, India. Am J Psychiatry 159: 43–47

Patel V, Rahman A, Jacob KS, Hughes M (2004) Effect of maternal mental health on infant growth in low income countries: new evidence from South Asia. BMJ 328: 820–823

Rahman A (2005) Maternal depression and child health: the need for holistic health policies in developing countries. Harvard Health Policy Rev 6: 70–80

Rahman A, Mubbashar MH, Gater R, Goldberg D (1998) Randomised trial of impact of school mental-health programme in rural Rawalpindi, Pakistan. Lancet 352: 1022–1025

Rahman A, Iqbal Z, Harrington R (2003) Life events, social support and depression in childbirth: perspectives from a rural community in the developing world. Psychol Med 33: 1161–1167

Rahman A, Iqbal Z, Bunn J, Lovel H, Harrington R (2004) Impact of maternal depression on infant nutritional status and illness: a cohort study. Arch Gen Psychiatry 61: 946–952

Rodrigues M, Patel V, Jaswal S, de Souza N (2003) Listening to mothers: qualitative studies on motherhood and depression from Goa, India. Soc Sci Med 57: 1797–1806

Small R, Brown S, Lumley J, Astbury J (1994) Missing voices: what women say and do about depression after childbirth. J Reprod Infant Psychol 12: 89–103

Sumathipala A, Hewege S, Hanwella R, Mann AH (2000) Randomized controlled trial of cognitive behaviour therapy for repeated consultations for medically unexplained complaints: a feasibility study in Sri Lanka. Psychol Med 30: 747–757

United Nations (2001) Road map towards the implementation of the United Nations millennium declaration: report of the secretary-general. United Nations, New York

World Health Organization (1994) SCAN: schedule for clinical assessment in neuropsychiatry. World Health Organization, Geneva