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The Interface between Family Structure, Life Events and Major Depression in Uganda

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Cover Picture: A caregiver interview, one of the health centres and a fieldwork scenery.

To
Salome
Bergen, Noble and Trust

ABSTRACT

Background: Poor detection of depression in primary health care is universal but worse in resource-constrained societies, yet the illness must be recognized first if it is to be appropriately managed. While current debates about life events in Western societies is on their role in the gene-environment interaction to cause depression, research on the interface between life events, family structure and major depression in many developing countries is still rare. Prevention of depression by preventing life events may not be feasible but knowing depressogenic life events is a cue for rapid intervention.

Aim: To describe the feasibility of detecting current major depressive episodes (MDEs) in physically ill patients, identify life events associated with the MDEs, describe the interaction between life events, family structure and MDEs, and to explore how patients' caregivers perceive such depression.

Methods: Consecutive outpatients at three PHC centres were interviewed in each of the first three studies. A cross-section of 199 physically ill patients (74 with DSM-diagnosis of major depression and 125 without) were the respondents in the study for **Paper I.** A case control research design was used for **Paper II** to compare life event experiences of the 74 physically ill and depressed patients with 64 general population controls and for **Paper III** in which comparison was between 85 depressed and 170 non-depressed physically ill patients. The study for **Paper IV** used a qualitative approach to interview 29 adult caregivers of physically ill patients that were depressed.

Main findings: In **Paper I,** it is demonstrated that four simple subjective well-being questions could predict successfully the presence of a current major depressive episode. **Paper II** shows that losses related to interpersonal relationships and work as well as health and bereavement-related life events were predominant among patients with major depressive episodes. In spite of the buffer provided by the family, life events related to work, education, health and courtship/cohabitation significantly had more negative impact ratings among the depressed. Independent life events clustered around work, health, bereavement and marriage were associated with an increased risk of major depressive episodes in patients compared to controls. Similarly, findings in **Paper III** show that depressed patients from extended families experienced significantly more negative life events related to loss and bereavement. Distressing and bereavement-related life events were predictors of depression among patients from extended families. Given the concealment of depression in physical illness, caregivers could not identify the depressive episodes thereby undermining appropriate care-giving **(Paper IV).** However, they identified and associated a number of life experiences to what they referred to as 'thinking a lot'. Care-giving was found to be challenging.

Conclusions: Four simple questions reflecting subjective well-being appear to have the potential to detect diagnosable patients likely to have a current major depressive episode. While the extended family is often assumed to cushion members from shocks of stressful life events, it appears to be weakening and unable to protect at risk individuals from developing depression. Psychosocial interventions as well as training and deployment of mental health workers in communities to promote coping are needed. Caregivers deserve support since their physical, psychological, economic and social resources are necessary in management of depression yet, such resources are being drained.

Key Words: Depression, subjective well-being, current major depressive episode, major depressive illness, screening, primary health centre, Uganda, Africa, life events, life stories, family structure, caregivers, informal care-giving, coping.

LIST OF PUBLICATIONS

This thesis is based on the following papers, which are referred to by their Roman numerals. The four papers put together present the results that arose out of an investigation into the interface between family structure, life events and major depression in central Uganda.

I.   Muhwezi, W. W., Ågren, H., & Musisi, S.
     Detection of major depression in Ugandan primary health care settings using simple questions from a subjective well-being (SWB) subscale.
     Soc Psychiatry Psychiatr Epidemiol, 2007: *42***(1)**, 61-69.

II. Muhwezi, W. W., Ågren, H., Neema, S., Maganda, A. K., & Musisi, S.
     Life events associated with major depression in Ugandan Primary Health Care (PHC) Patients: Issues of cultural specificity. Accepted in June 2007 for publication by *International Journal of Social Psychiatry.*

III. Muhwezi, W. W., Ågren, H., Neema, S., Musisi, S., & Maganda, A. K.
     Life events and depression in the context of the changing African family: The case of Uganda. *World Cultural Psychiatry Research Review* (Official Journal of the World Association of Cultural Psychiatry), 2007 **Jan**:10-26.

IV. Muhwezi, W. W., Okello, E. S., Neema, S., & Musisi, S.
     Caregivers' perceptions concerning the interface between life events and major depressive illness as seen among patients at Primary Health Care Centers in Central Uganda. Submitted Manuscript to *Qualitative Health Research in July 2007*.

CONTENTS

LIST OF ABBREVIATIONS

AUC	The Area Under the *ROC* Curve
COMPASS-OP	COMPASS Out Patient, a product of COMPASS Information Services, Inc., King of Prussia, PA.
DALYs	Disability Adjusted Life Years
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (Text Revision)
GBD	Global Burden of Disease
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
ICD-10	International Classification of Diseases, 10th Edition
IRLE	Interview for Recent Life Events
LCs	Local Councils (in Uganda)
LCU	Life Change Units
MADRS	Montgomery Åsberg Depression Rating Scale
MDD	Major Depressive Disorder
MDEs	Major Depressive Episode(s)
MDI	Major Depressive Illness
MINI	Mini International Neuropsychiatric Interview
MoFPED	Ministry of Finance, Planning and economic Development (in Uganda)
MoH	Ministry of Health (in Uganda)
PHC	Primary Health Care
RDC	Resident District Commissioner (in Uganda)
ROC	Receiver Operating Characteristic curve
SRRS	Social Readjustment Rating Scale
SWB	Subjective Well Being
UBOS	Uganda Bureau of Statistics
UNCST	Uganda National Council for Science and Technology
UNICEF	United Nations Children's Fund
WHO	World Health Organisation
YLD	Years Lived with Disability

1.   BACKGROUND

"Effects of life events… have practical implications. Many of the events implicated in depressive disorders are of a type over which the individual and the clinician have no control, and which would require major changes in the structure of society to avoid. Others such as deaths and departures of children from home are inevitable consequences of the life cycle, or, like marital break-up, they seem to be closely bound up in the nature of human relationships to be easily amenable to change. Therefore, primary prevention of depression by preventing the event itself does not seem feasible. However, using the event as a cue for rapid intervention is feasible. The event acts as a signal for a considerably increased period of risk, when intervention can be targeted. Crisis intervention approaches and other provisions of support, aimed at preventing the evolution of understandable distress into pathological disorder, are potentially very useful avenues. A few studies have been undertaken, but further studies are required"

(Paykel, 1994, P.56)

1.1   DEPRESSOGENIC EFFECTS OF LIFE EVENTS

The role of stress in the genesis of psychiatric disorders exists in early writings on mental illness. For instance, the German psychiatrist and textbook author Emil Kraepelin (1856-1926) understood that psychosocial stressors play a key role in the initial episodes of depressive disorders (Kendler et al., 2000). The concepts of 'shell shock' and 'battle neurosis' from the World Wars were major landmarks in understanding consequences of severe stress. Research on animals in the period after the Second World War established that stress and physical disorders of somatic and endocrine nature were related (Paykel, 2001; Russell, 2007). American academic psychiatrist Adolf Meyer was profoundly influential in giving aetiological prominence to psychosocial stressors from the 1930's onwards, coining the term 'reaction types' to replace a standard diagnostic wording (Paykel, 2001; van Praag et al., 2004). He emphasized the interdependence of biological, psychological, and social variables in triggering illness, thus preparing the modern understanding of interaction between the environment and the organism.

The role of stressful life events in etiology of various diseases became a field of research in 1950's (Rabkin & Struening, 1976) but the concept of 'life events' as a name for events of a positive or a negative implication being meaningful triggers for mental illness was popularised by scholars like George Brown, a sociologist and psychiatrists like Holmes, Rahe and Dohrenwend in 1960's and 70's (Brown, 1972; Brown & Birley, 1968; Casey et al., 1967; Dohrenwend, 1973; Holmes & Rahe, 1967). During the early years of this research, there was debate as to whether life events were lesser precipitants of depression, with other factors being the 'true' causes. The debates were between supporters of psychological causation of disorder and those assigning primacy to constitutional, genetic, and biological causes (Paykel, 2001). Controversy has also existed as to whether stressful life events actually promote psychiatric disorders, and whether rigorous experiments are necessary to conclude how stress causes depression (Kessler, 1997). Evidence from none-experimental research shows the depressogenic effect of life events (Brown et al., 1987; Kessler, 1997).

Studies conducted in the Western world have demonstrated — (1) consistent associations between exposure to life events and subsequent onset of episodes of major depression, (2) varying magnitudes of associations depending on how life events were measured (associations being generally stronger when 'contextual' measures are used instead of checklists), (3) consistent evidence of dose-response relationship between stressful life events and depression (severe events being more strongly associated with depression), and (4) a high prevalence of stressful life events in the general population (Brown et al., 1987; Kessler, 1997; Kessler et al., 1994; Paykel et al., 1980; Paykel et al., 1976). Although a majority of depressed people experience stressful life events before depression onset, only a minority of those people exposed to such events become depressed (Kessler, 1997).

Using epidemiological measures, research has found that the risk of developing depression 6 months after experiencing the most stressful classes of life events was 6:1, falling off rapidly with time after the event (Paykel, 1978). Using the population attributable risk, another study estimated the proportion of depression due to life events to be 40% (Cooke, 1987). In spite of such evidence, it has been argued that understanding the history of depression is important in evaluating the short-term effects of stressful life events on episode onset, since it was found that prior depression had an odds ratio of close to 40 in predicting a new episode (Kessler, 1997; Robins & Regier, 1991). Many factors seem to cause depression, with each accounting for a relatively small proportion of the variance. Therefore, even when life events are important, it is not absolute that an event is followed by depression. There are other modifying factors, both genetic and environmental ranging from biochemical to personality and coping mechanisms to social experiences. The methodology of measuring life events has become more or less settled and recent research in Western societies is concerned more with the placement of life events and their effects in multifactorial causative chains (Paykel, 2001).

There exists a strong link between life events and depressive episodes in vulnerable individuals, as reported from several Western research groups (Brown et al., 1987; Brown & Harris, 1978; Christensen et al., 2003; Kessler, 1997; Leskela et al., 2004). Life events and social adversities like unemployment, marital conflicts and unstable social support from a spouse have been shown to be strongly associated with depression (Ayuso-Mateos et al., 2001). Other studies have described adverse life events related to health, bereavement, employment, marriage and family relationships as risk factors for depression (Brown et al., 1987; Brown et al., 1978). The level of awareness about the negative impact of psychosocial factors on depression has been increasing (Christensen et al., 2003; Paykel, 2003; Schmidt et al., 2004).

However, a striking requirement to investigate the situation in non-Western societies still exists. Although some research about associations between life events and depression from a few African communities exist, the subject of the interface between life events, family structure and major depressive illness (MDI) in Primary Health Care (PHC) settings has hardly been studied. Studies that could have evaluated the family structure dimension in the relationship between life events and depression are not accessible in published literature while a few that are related to the subject are relatively old (Broadhead et al., 2001; Broadhead & Abas, 1998; Ndetei & Vadher, 1982, 1984; Ohaeri & Otote, 2002; Patel et al., 1997; Todd et al., 1999). Fortunately, some of these studies used standardised assessment techniques and instruments, allowing comparisons with findings presented in this thesis.

1.2. DEFINITION OF 'LIFE EVENTS'

Life events are 'dateable occurrences representing discrete changes in the subject's social or personal environment that is external and verifiable rather than internal or psychological' (Paykel, 1994; Rafanelli et al., 2005). The defining feature in a life event is discreteness, which means that it is describable both in a typical time frame and occurring over a period of time.

1.2.1. Stressful Life Events

Stressful life events are happenings that disrupt or threaten to disrupt an individual's usual activities and they may be undesirable or desirable. They include both major and minor stresses, losses, achievements, and status changes that occur in people's lives. Life events often necessitate a person to undergo psychosocial adjustment for him or her to function well (Brown et al., 1978; Dohrenwend, 1973; Holmes et al., 1967; Kendler & Karkowski-Shuman, 1997; Paykel, 1997). Examples of common psychological and social events considered stressful include, but are not limited to, break-up of intimate romantic relationships, death of a family member or friend, economic hardships, poor physical health, accidental and intentional assaults on physical safety, changes in occupational environment and legal predicaments.

1.2.2. Scaling of Life Events

Development of assessment tools for life events has gone through several stages starting with the use of checklists, schedules, and finally interviews (Paykel, 2001). The intellectual origin for use of the checklist approach is traced to Adolf Meyer's use of 'life charts' to summarize information provided by patients at intake (Kessler, 1997). Systematic research required systematic recording of life experiences, and a timely contribution to life events research was the development of a self-report questionnaire with a list of life events items entitled 'the Schedule of Recent Experiences' derived by Thomas Holmes and co-workers (Holmes et al., 1967). This schedule was refined to produce a checklist of 43 stressful experiences generated on the basis of clinical research entitled the 'Social Readjustment Rating Scale' (SRRS). 'Separate life change unit (LCU) weights' were generated by a panel of raters for each life event in the SRRS and used to construct a summary LCU score for the checklist. Although a large amount of research on the relationship between life events and various types of illness were done using the SRRS, the method had a number of methodological limitations — the most notable among which was the tendency to treat all life events of a given type as equivalent (Dohrenwend, 1973; Kessler, 1997; Paykel, 2001).

Given the weaknesses of life event checklists and in spite of retrospective collection of life event information, one of the challenges was to elicit reliable and valid information. Special considerations in this kind of research include problems such as respondents' failing memory and incorrect attributions by the patient, offering him or her meaning and explanation for an illness (Paykel, 2001). Problems with validity and reliability emerge when life event ascertainment is done by self-report questionnaires rather than direct interviews (Brown, 1989; Brown et al., 1978; Paykel, 1983, 2001)

In scaling of life events, two strategies were evolved to handle methodological weaknesses of checklists. One strategy was to allow each respondent to assign a subjective weight to his or her own events (Sarason et al., 1978), but it was found to confound measurement of the life events with emotional reaction to the event (Kessler, 1997) and was abandoned. The other strategy was to use objective information about the person and his life situation to independently evaluate how stressful the event would be for a typical person in that situation (Brown, 1989; Kessler, 1997). This has been termed as the 'contextual' approach to rating life events (Brown et al., 1973; Paykel, 1983; Paykel et al., 1976). A number of life event measures based on contextual approach have been developed among which is the Interview for Recent Life Events, used in studies for this thesis (Paykel, 1997).

Measures of severity of contextual threat of a life event have proved effective in exploring the aetiological role of events for a number of psychiatric illnesses. The severity of threat and emotional significance of the event are good predictors of a depressive illness (Brown, 1989). Considerations in the systematic measurement of the meaning of a life event include a person's values, plans, and goals in order to relate to things which provisionally can be labelled 'situation' and 'meaning'. Therefore, assessment of meaning of the a life event must take into perspective dimensions such as independence–dependence, objective negative impact, and whether the researcher contextualises the immediate situation—like a woman becoming unemployed, but in the wider context of being unmarried, in debt, and living with her school-aged child (Paykel, 1997).

1.3. DEVELOPMENT OF THE TERM 'DEPRESSION'

Hippocrates (about 460-370 B.C.) referred to a both a brooding temperament and depressive illness as 'melancholia', which literally means black bile. Black bile, along with blood, phlegm, and yellow bile were the four humours (fluids) that accounted for the basic medical physiology of that time. The temporal connection between melancholia and mania was recognized already by the Greek physician Aretaeus of Cappadocia (present-day Turkey) from the 1st Century A.D. The melancholia term lost its technical meaning in the 19th century and was changed to 'depression' in early 19th century and has been part of the DSM and ICD classifications ever since.

In many non-Western cultures, most people do not recognize depression as a discrete disorder but as a non-specific response to stressors. There exists a variety of indigenous labels for distress states, which share many features with depressive illness. Phenomenological studies have found substantial overlap between somatic and psychological manifestations of distress states and depressive illness (Piccinelli & Simon, 1997; Simon et al., 1999). Some features of depressive syndromes may occur secondary to physical illness. Variations in mood, especially when one is physically sick, are a normal part of life. Depression is a multi-level concept, referring by context to one of three levels — a symptom/sign ("I feel so depressed"), a syndrome, or an illness/disorder. Therefore, if not contextualised, depression can be confusing. The clinical decision on the boundary between normal sadness and pathological depression is greatly simplified by the use of logical operators organised in diagnostic criteria lists, such as the DSM-IV-TR (American Psychiatric Association, 2000) and ICD-10 (WHO, 1992).

In psychiatric practice, the concept of depression is used in a restricted way to refer to a major depressive disorder (American Psychiatric Association, 2000; WHO, 1992), although there

are many variants of depressive syndromes and disorders. Depressive disorders include major depression, dysthymia, and depressive disorders not otherwise specified (Gelder et al., 2001; Saddock & Saddock, 2003). Among depressive disorders not otherwise specified, there are a number of subcategories including: adjustment disorders, adjustment disorders with mixed anxiety, premenstrual dysphoria, minor depressive disorder and many others (American Psychiatric Association, 2000). Depression is a mood disorder, occasionally occurring as a single episode in a lifetime, or more commonly as one of many episodes. It may occur as part of an alteration with mania in the case of manic-depressive or bipolar illness (Dejarlais et al., 1995).

The term adopted in this thesis is a current major depressive episode (MDE), characterised by a co-varying pattern of signs and symptoms related to affective, cognitive, behavioural, social and psychological functioning. Since most respondents in studies for the thesis were physically ill patients at PHC centres, criterion 'A' in the DSM-IV-TR was used to diagnose a major depressive episode (American Psychiatric Association, 2000; Sheehan & Lecrubier, 1998). Using the strict DSM-IV definition would have meant applying the exclusion criteria for bereavement, primary physical disorder or substance abuse in criteria D and E. Although only using the DSM criteria 'A' to diagnose depression may overestimate the number of cases in a population, the method provides a useful indicator of associated functional impairment (Bolton et al., 2004). Studies that compared the case-finding, inclusive, and simpler symptomatic approaches and those that used strict etiologic and hierarchical approaches which apply exclusion rules did not report significant prevalence differences (Bolton et al., 2004; Williams et al., 2002). Diagnostic question items for a current MDE used in the thesis are reproduced in Table 1. The view adopted was that even among the physically ill, current MDEs can be severe, maladaptive and incapacitating. Although depression may appear as a symptom of many psychiatric and physical illnesses and in normal people going through tragic life difficulties, it is qualitatively and quantitatively different from normal sadness or grief.

Table 1: Diagnostic Questions for a Major Depressive Episode

A1	Have you been consistently depressed or down, most of the day, nearly every day, for the past two weeks ?	NO	YES
A2	In the past two weeks, have you been less interested in most things or less able to enjoy the things you used to enjoy most of the time ?	NO	YES
	IS A1 OR A2 CODED YES ?	→ NO	YES
A3	**Over the past two weeks, when you felt depressed and/or uninterested :**		
a	Was your appetite decreased or increased nearly every day or did your weight decrease or increase without trying intentionally ? (i.e., ± 5 % of body weight or ± 3,5 kg or ± 8 lbs., for a 70 kg / 120 lbs. person in a month) IF YES TO EITHER, CODE YES	NO	YES
b	Did you have trouble sleeping nearly every night (difficulty falling asleep, waking up in the middle of the night, early morning wakening, or sleeping excessively) ?	NO	YES
c	Did you talk or move more slowly than normal or were you fidgety, restless or having trouble sitting still, almost every day?	NO	YES
d	Did you feel tired or without energy, almost every day?	NO	YES
e	Did you feel worthless or guilty, almost every day?	NO	YES
f	Did you have difficulty concentrating or making decisions, almost every day?	NO	YES
g	Did you repeatedly consider hurting yourself, feel suicidal, or wish that you were dead ?	NO	YES
A4	ARE 3 OR MORE A3 ANSWERS CODED YES ? (OR 4 A3 ANSWERS IF A1 OR A2 ARE CODED NO)	NO *MAJOR DEPRESSIVE EPISODE CURRENT*	YES

From The Mini international Neuropsychiatric Interview (M.I.N.I) (Sheehan & Lecrubier, 1998)

1.3.1. Depression: The Global Context

Depression has been described as the 'common cold of psychiatry' (Newton, 1988), responsible for premature deaths, mainly through suicides (American Psychiatric Association, 2000), increase in 'Disability-Adjusted Life-Years' (DALYs), and a high disease burden (Ustun et al., 2004; WHO, 2000). It is the single most common of mental disorders causing a high degree of morbidity and clinically significant distress (Ustun et al., 2004). The impact of depression is known to extend beyond its core symptoms by affecting the individuals' quality of life, social functioning as well as ability to maintain and enjoy work, family and other social relationships (Hirschfeld et al., 2000; Skärsäter, 2002).

Depression is reported to be associated with more functional disability than chronic medical illness (Broadhead et al., 1990; Wells et al., 1989) and by 2020; projections say that it will be the second to heart diseases in causing disability (Murray & Lopez, 1996). In high-income countries, the burden of depressive disorders by 2000 was 8.9%, while for middle and low income countries; depression contributed 4.1% of total DALYs. Globally, unipolar depressive disorders accounted for 4.46% of total DALYs and for 12.1% of 'Years Lived with Disability' (YLD) (Ustun et al., 2004; WHO, 2002). Undiagnosed depression is known to put significant socio-economic burdens on individual caregivers, families and communities in terms of increased service needs, lost employment, reduced productivity, and poor parental care with a risk of transgenerational effects (WHO, 2001).

Depression is still largely, a concealed problem (Newton, 1988; Patel et al., 2001; Patel et al., 1997; Ustun et al., 2004). Many PHC workers do not detect depression in their patients. Better recognition and detection of the illness by all PHC workers is necessary and needed. One likely explanation to this negligence is that depression is considered in many cultures as predictable distress prompted by tribulations of livelihood (Kessler et al., 1999). Secondly, difficulties of distinguishing depression from distress and the illness from the superficial symptom, still abound (van Praag et al., 2004).

The problem of under-recognition and poor diagnosis of depression is universal, although it is worse in resource-constrained countries like Uganda. In the developed countries where primary care providers are physicians, rates of recognition and diagnosis are between 30% and 50% (Ormel et al., 1991; Ormel et al., 1994). In Zimbabwe, the average recognition rate was below 20% (Patel et al., 1997). The psychological or somatic presentation of depressive symptoms is strongly determined by cultural factors, especially in relation to somatisation, and even when patients consciously report psychological depressive symptoms, they do not attribute their help-seeking behaviour to emotional reasons (Manson, 1995; Okello & Ekblad, 2006; Taylor & Mann, 1999). According to WHO, depression causes increased health care costs due to unnecessary investigations and inappropriate or non-specific treatments (Shapiro et al., 1984; WHO, 2001).

1.3.2. Depressive Illness in Africa

By the year 2000, unipolar depressive disorders in Africa accounted for 1.2% of the GBD, attaining the 13th rank. The proportion could have been higher had it not been for the high prevalence of communicable, maternal, prenatal, and nutritional conditions. On the contrary, unipolar depressive disorders accounted for 8% of the total disease burden in the Americas (Ustun et al., 2004). Among patients attending PHC clinics in sub-Saharan Africa, it was estimated that as many as $^1/_5$ to $^1/_3$ of the cases presented with depression as the primary or secondary reason for seeking care (Heggenhougen, 1995).

Few studies have attempted to determine the prevalence of depression and depressive symptoms in PHC's in Africa. In Kenya, the prevalence of depression at the PHC level was estimated to be 9.2% (Dhadphale et al., 1989). Of the depressive disorders in that study, dysthymia accounted for 7.9% and major depression for 1.2%. In a study from Tanzania, the proportion of patients attending PHC clinics that reported depression symptoms was 41.6% and 23% for depressive ideation (Ngoma et al., 2003).

During colonial times and the period soon after independence of most African countries, depression in particular was thought to be a uniquely Western condition, a theme found in the views of J. C. Carothers (Edgerton, 1980; Njenga, 2002). Many foreign mental health workers never picked the clinical evidence for suicidal ideation and feelings of guilt, which at that time were considered core symptoms, essential for the diagnosis of depression (German, 1972, 1987a, 1987b). However, when more refined, semi-structured and detailed psychiatric epidemiological tools became available, guilt feelings and suicidal ideas were found to be quite common in African patients, as everywhere (Abas et al., 2003; Abas & Broadhead, 1997; Orley et al., 1979).

1.3.3. Depressive Illness in Uganda

There are a few studies which have documented the prevalence of depression and other mental disorders in Uganda (Bolton et al., 2004; German, 1987b; Kasoro et al., 2002; Muhwezi et al., 2007; Orley et al., 1979; Ovuga et al., 2005). The prevalence estimates in these studies are in the range of 10-30%. Such a wide diversity in depression prevalence rates is not surprising since it is similar to what has been reported in Western countries (Simon et al., 2002; Weissman et al., 1996; WHO, 2004). Other studies of healthcare seekers in East African PHC centres suggest a prevalence rate of 20-35% of psychological disorders, of which depression is the most common (Kigozi & Maling, 2004; Muhwezi et al., 2007; Ngoma et al., 2003; Ovuga et al., 1999).

1.3.4. Primary Health Care (PHC) and Depression

Primary health care is the point in the healthcare system to which a person first goes with a health problem or complaint. In some countries, the government health facility may be the PHC provider, while in other situations general private practitioners provide primary care services. It is well known that physical illness can cause depression, and depression is often concealed behind somatic complaints (MacHale, 2002; Wasserman, 2006). The relationship between physical and depressive

illnesses is bidirectional, but the quest to identify social factors associated with the risk of major depressive episodes among the physically ill in PHC centres is scientifically interesting to social work professionals. One reason to focus at this comorbidity is that patients with a combination of physical and depressive illness function more poorly and have higher levels of mortality and morbidity (MacHale, 2002).

Depressive illness in PHC is associated with somatic complaints, including aches and pains in the whole body, joints, back, abdomen, and heart, with added tiredness (Patel et al., 2001; Reeler, 1986). It used to be stated that 'somatisation' was a sign of cultural backwardness, but recent research has shown that somatic symptoms are universal, occurring in all cultural groups and countries (Kirmayer, 1989; Kirmayer & Groleau, 2001; Ustun et al., 1995). About 70-80% of patients in PHC's with major depression and anxiety present exclusively with somatic complaints (Simon et al., 1999).

Patients who participated in studies for this thesis had sought help at PHC centres for physical health complaints. They presented somatic complaints at the expense of underlying depressive symptoms, a fact which has been found in other studies (MacHale, 2002). It is vital to note that even among the physically ill; the experience of a MDE is qualitatively different from grief or other understandable reactions to loss or diversity (Skärsäter, 2002). Each of the depressive symptoms has the potential to generate significant distress and dysfunction even when experienced in isolation, but the accumulation of depressive signs and symptoms creates misery and ineffectiveness (Karp, 1996). Given the universal problem of under-recognition and poor diagnosis of depression, mostly in PHC settings of resource-constrained countries like Uganda, it was worthwhile to investigate a pragmatic way of detecting depressive illness in PHC centres.

1.4.   LIFE EVENTS, FAMILY STRUCTURE AND DEPRESSIVE ILLNESS

1.4.1. The Family in Africa and Healthcare

In Africa, the family has always been extended in structure and used to be a basic human social unit vital for production and distribution. Patterns of care for the sick used to be embedded in the family and the kinship system (Kayongo-Male & Onyango, 1984; Levine, 1990; McGrath et al., 1993). Sickness and health were matters of corporate social concern and since causes of illness could most times be traced from the family or the clan, the well-being of all the concerned required collective action (Edgerton, 1980). The sick were taken care of in the extended family network. The whole family would bear and share in the consequent stigma if one of the members for instance, became mentally ill. The family socialized children and new members of society and together with kinships, acted as an agent of social control and social security (Horton & Hunt, 1984). The family used to be the first institution to feel the impact of care-giving for the sick.

However, the family institution has undergone structural changes in both size and functioning (Ankrah, 1993; Kayongo-Male et al., 1984; Kilbride & Kilbride, 1990). Traditional family roles have been altered and continue to change. The cooperative and caring obligations are gradually being outwitted by pressures of economic stress, effects of unemployment, rural–urban migration

and cultural transformation precipitated by new religions and other neo-colonial cultural influences (Adeokun & Nalwadda, 1997; Sendagi, 1997)**.** There are postulates that rapid social change in some Africa societies could lead to mental illness while social support from family members could be protective against mental illness (Edgerton, 1980). Traditional family values have weakened and foreign cultural pressure increased leading to changes in the form and essence of families (Atekyereza, 2001a)**.** Due to the increasing competition for fewer resources, the dependency syndrome characteristic of extended families is making it harder for people to live in bigger families relying on a single household head.

1.4.2. Family Dynamics, Life Events and Major Depression

Support from the family plays a critical role in recovery from major depression (Keitner et al., 1995). Adversity in an individual's home, family and work circumstances were found to be related with major depression (Hirschfeld et al., 2000; Kornstein et al., 2000). A number of physical illnesses are complicated by major depression which affects not only the patient's quality of life but also their relationship to other people (Skärsäter, 2002).

Depression affects the way individuals function in the family. Depressive symptoms not only affect the suffering patient but also impacts on those who live with him or her — relatives, partners, parents, children, close friends, and workmates. Making decisions about where to seek help from normally starts in the family. Indeed, families manage the greatest burden of caring for the mentally ill worldwide (Chen, 1995; Keitner et al., 1995). The presence of extended families in most societies is supposed to provide a supportive environment, which lessens the severity of illnesses (Ankrah, 1993; Sudarkasa, 1982). However, extended family systems are far from uniform across societies and families may not be supportive in a uniform way to sick family members, especially the mentally ill members (Dejarlais et al., 1995).

At the time of conceptualizing research for the thesis, anecdotal literature showed that many Ugandans had a lot of mental anguish due to wars, poverty, malnutrition; AIDS, family break ups, drug and alcohol abuse and many other stressful life experiences (Musisi, Kinyanda, & Nakasujja, 2000). Depression in the context of traumatic life events in Uganda had been identified as an illness yet to be fully investigated (Musisi, Kinyanda, Liebling et al., 2000). Ways in which people coped with such challenges and the role played by the family amidst such stressors were not clear. However, the particular amount of stressful life events in a society is one thing, and the differential ways it affects the individuals is another. It is this last issue that can be compared and analysed.

2. THEORETICAL FRAMEWORK

2.1. A CONCEPTUAL MODEL

This section briefly discusses frameworks from which the thesis derives ideas and concepts. A model that guided the thinking about relationships between life events, family structure and major depression has been proposed. It highlights antecedent stressors, mediating appraisal processes of stressors, and positioning of family structure, with major depression as one of the health outcomes.

The theoretical basis for studies in the thesis is the diathesis-stress model, which suggests that behaviour is formed and continuously shaped through an interaction between nature (biological and/or genetic factors) and nurture (life experiences) (Kendler et al., 1999; Sarafino, 2002). *Diathesis* is a Greek word meaning 'predisposition' or a tendency to fall ill in a specific way. In the context of depression, diathesis refers to that 'Achilles heel' that renders individuals at risk of becoming depressed (Cohen & Wills, 1985; Monroe & Simons, 1991). Research shows that most depressed people report stressful life events evoking significant emotional distress (Kessler, 1997). Stressful life events are more likely to cause depressive illness in people who are biologically, soci- ally, and/or psychologically vulnerable (Brown, 1989; Brown et al., 1986; Kendler et al., 1997; Lazarus & Folkman, 1984; Wasserman, 2006).

Additional insights into the theoretical thinking for this research were derived from other frameworks like the biopsychosocial model (Engel, 1977), Adolf Meyer's psychobiology of mental disorders (Anthonisen & Fairbank, 1953; Pressman, 1997; van Praag et al., 2004), the transactional stress-coping theory (Lazarus, 2000; Lazarus et al., 1984), and issues of vulnerability and depression (Brown, 1989; Brown et al., 1978; Paykel, 1997; Paykel et al., 1980; Paykel et al., 1976). Figure 1 is a conceptual model showing different stressors and vulnerability factors which are likely to interact and influence individuals' coping appraisals leading to different health outcomes, among which is a major depressive episode. The message in the model is that whereas genetic vulnerability can influence an individual's response to stress, other factors notably ones' personality and socio- cultural factors also contribute to modify that vulnerability.

Several modifying factors have been shown to act between life events and subsequent major depression. These include social support, various aspects of personality, appraisal processes, intel- lectual capabilities such as cognitive flexibility and affective problem-solving skills, interpersonal skills such as social competence and communication ability, and various coping strategies (Kessler, 1997; Lazarus et al., 1984; Stroebe & Stroebe, 1995). For instance, people with good social support are believed to cope better with stressors. In situations of adequate support and high self-esteem, the individuals are believed to cope successfully with stressors in spite of other vulnerabilities that may exist (Tugumisirize, 2007).

Life event stressors are constantly appraised and rated by exposed individuals as either routine, gratifying, challenging or taxing. On the basis of appraisal outcomes, a diversity of emotions are aroused. Emotions that are aggravating and disagreeable tend to evoke a state of psychic tension. In terms of overt behaviour, stressed individuals may become irritable, tense,

aggressive, distracted, disinterested, resigned, anxious, or agitated. Their sleep may get disturbed, appetite may decline and sexual desire may plummet (van Praag et al., 2004).

Major depression is thought to be 40-70% inheritable but most likely; it is also contributed to by an interaction of several genes with environmental events (National Institute of Mental Health, 2004). In assessing the association between life events and current MDEs in PHC settings, prudence about the role of biological, psychological and social factors has to be borne in mind and that was the case in studies for this thesis.

2.2.   STRESS

At one time or another, all people experience stress of some kind (Selye, 1976). Stress in the conceptual model was taken to be the response of the body to any demand (Russell, 2007). The biopsychosocial model which is one of the most comprehensive stress models suggests that stress involves an external component of stressors, an internal component and interactions between external and internal components, alternatively referred to as a transaction (Bernard & Krupat, 1994; Lazarus et al., 1984). Stress occurs when perceived demands on the person are taxing and exceed his or her ability to adjust (Lazarus et al., 1984). Other researches have conceived stress as the experience of disruption in meaning, understanding, and smooth functioning with possible consequences for the person in the form of harm, loss or challenge (Benner & Wrubel, 1989) and it has both physical and psychological components (Lovallo, 1997).

In summary, stress refers to conditions in which the person-environment transactions lead to a perceived discrepancy between the physical and psychological demands of a given situation and the resources of the individual's biological, psychological and social systems (Lazarus et al., 1984; Sarafino, 2002). Not all stress reactions are negative. A certain amount of stress is necessary for survival and progress. Some stressful experiences like participation in dangerous sports are beneficial and may even be actively sought after given the sense of competence that emerges which far outweighs any negative effects. Secondly, an experience that is stressful for one person may be exciting or challenging for another. Therefore, different situations are perceived differently by various individuals implying that subjective perceptions rather than objective stressors are the main determinants of subsequent behaviour (Pearlin, 1982; Skärsäter, 2002). People are likely to be distressed by an event like death of a loved one differently.

2.3.   STRESS AND LIFE EVENTS

Each person's view of the situation at hand determines whether a life event is experienced as stressful or not. An individual's appraisal of a stressful life event determines the magnitude of the stress response and the kind of coping strategies employed to deal with the stress (Lazarus et al., 1984). Societal and cultural influences on stress perception, personality characteristics, living conditions, severity of stress, duration and number of stressors are all vital in explaining how stress is experienced (van Praag et al., 2004). Many people remain healthy despite the exposure to stressful circumstances while others develop resilience after successfully managing stressful life situations (Benner et al., 1989; van Praag et al., 2004). Therefore, not everybody develops a major depressive illness after experiencing a life event. For people who become depressed, the severity is believed to

vary due to the modifying effect of factors like social support, personality, sense of belonging and other vulnerabilities (Choenarom et al., 2005; Hagerty et al., 1992).

The transactional view of stress involves primary and secondary appraisals. Primary appraisal happens when stressfulness of an event is evaluated to determine whether the event is irrelevant, beneficial, or stressful. If the event is stressful, evaluation is about whether it is associated with harm/loss, threat, or a challenge. On the contrary, secondary appraisal occurs after assessment of the event as a threat or a challenge. During secondary appraisal, an individual evaluates his or her coping resources and options by either resigning or standing firm (Lazarus et al., 1984; Sarafino, 2002; van Praag et al., 2004).

2.4. COPING WITH LIFE EVENTS AS STRESSORS

Ability to cope with stress helps to prevent, reduce or avoid stress-induced emotional states. The coping strategy used depends on the outcome of the appraisal of the situation. If the cause of the stressor is removed or its consequences alleviated by direct action, problem-focussed coping would have been applied. On the contrary, if there is regulation of distress associated with a problem, emotion-focussed coping would have prevailed (Lazarus et al., 1984). The two approaches are related to the active phenomena of 'fight-flight' and passivity characterised by withdrawal and conservation. In passive coping, the subject evades, submits or resigns (van Praag et al., 2004).

If stress persists for a long period, depression starts to develop insidiously under the cloak of chronic stress symptoms. On the contrary, an underlying depressive illness potentially can inhibit the ability to cope with stress (Wheatley, 1997). Nearly all individuals with a major depressive disorder report significant life stress before the episode (Kessler, 1997). Therefore, depression can elicit or exacerbate stressful life events and difficulties. According to the buffering hypothesis, social support is supposed to enhance a person's ability to cope with stress or alleviate the negative impact of a stressful life event (Cohen et al., 1985). Although the family can be the genesis of stressors, it is also an important aspect of the social network that is supposed to provide social support. Research for this thesis took this possibility into account.

Stressors   **Stress moderators**   **Coping**   **Outcome**

Life events

- Work/occupational e.g. job loss
- Educational e.g. academic failure
- Financial e.g. bankruptcy
- Health e.g. sickness, injury
- Bereavement e.g. death of spouse
- Migration e.g. shift residence
- Courtship/cohabitation
- Legal e.g. imprisonment
- Family and social relationships e.g. separate from a friend
- Marital e.g. marriage, divorce

Daily hassles

Chronic strains

Demographics
- Age
- Gender
- Occupation
- Marital status
- Family structure
- Family size
- Etc.

STRESS

Sources

-the person
-the family
-the society

Internal resources
<Genetic inclination
<Psychological issues
  - Self esteem
  - Optimism
  - Masterly
  - Beliefs
  - Neuroticism
  - Communication ability
  - Intellectual abilities
  - Interpersonal skills

External resources
  - **Social support**
  - **Social networks**
  - Social competence
  - Socioeconomic status
  - Problem-solving skills

Psychological Responses

Problem focused

Emotion focused
Negative coping
  - Challenging
  - Taxing

Positive coping
  - Routine
  - Gratifying

Physiological responses

- **Behaviour**
- **Thought patterns**
- **Emotions**

A major depressive episode

Well adjusted

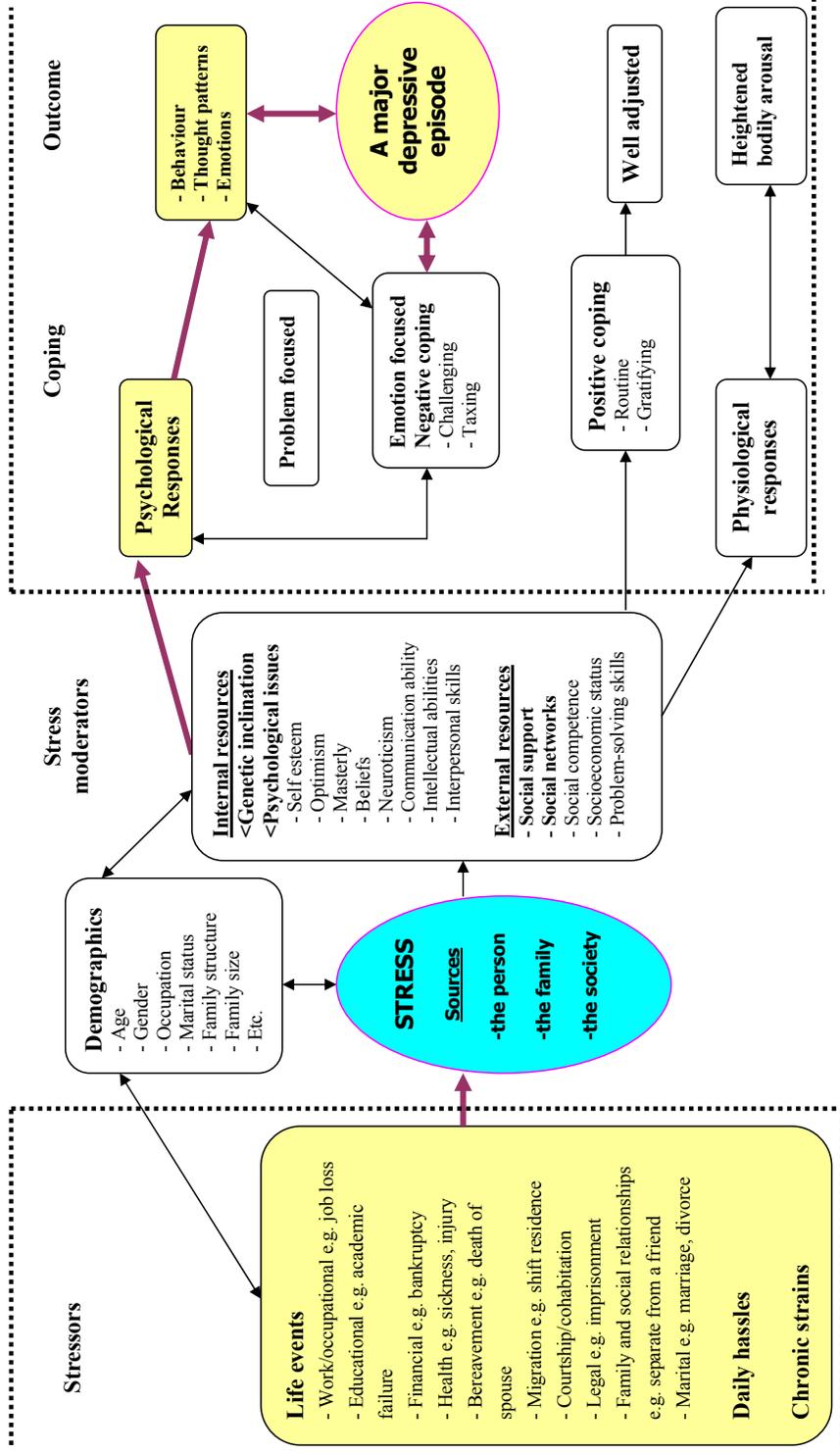**Heightened bodily arousal**

Figure 1: A conceptual model of possible linkages between stressors, stress moderators, coping appraisals and a major depressive episode as an outcome

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3. AIMS OF THE STUDY

3.1. GENERAL AIM

To describe the feasibility of detecting current major depressive episodes (MDEs) in physically ill patients, identify life events associated with the MDEs, describe the interaction between life events, family structure and MDEs, and to explore how patients' caregivers perceive such depression.

3.2. RESEARCH QUESTIONS

Studies presented in this thesis set out to answer the following questions:

1. What is the feasibility of detecting current major depressive episodes (MDEs) in physically ill patients seen at Primary Health Care (PHC) centres in central Uganda?

2. Which life events are associated with current MDEs seen among physically ill patients at PHC centres in central Uganda and how does family structure influence the relationship between life events and current MDEs?

3. How do patients' caregivers' perceive MDEs in their physically ill patients and how do they care for such patients?

4. How do caregivers cope with MDEs in their physically ill patients in central Uganda?

3.3. SPECIFIC OBJECTIVES OF THE STUDIES

(i) To determine the feasibility of detecting current MDEs in physically ill patients seen at PHC centres **(Paper I)**. The objective was investigated using questionnaires during the first phase of the study where research instruments were pre-tested and the viability of the research ascertained.

(ii) To identify life events that could be risk factors for current MDEs among the physically ill patients seen at PHC centres **(Paper II).** This objective was also investigated using data collected in the first phase of the study.

(iii) To investigate the interface between life events, family structure and current MDEs seen in patients at PHC centres **(Paper III).** This objective was investigated using questionnaires during the second phase of the study.

(iv) Using qualitative methods — to explore caregivers' perception of MDEs in physically ill patients, and to identify what caregivers offer such patients and challenges faced, which life events the caregivers associate with the patient's illnesses, and which barriers and opportunities exist in the family for management of current MDEs **(Paper IV).**

4. METHODS USED IN THE STUDY

4.1. INTRODUCTION

To contextualise research for this thesis, this section begins by giving the geographical location of Uganda, followed by a brief historical description of Uganda's traumatic and stressful history. The Baganda who were a majority in all studies are then described followed by a brief account of family structure in central Uganda. Thereafter, the demographic and health services situation in Uganda is given. After giving the context, the section proceeds to present a description of study sites, study design, samples, definitions of terms and variables, research instruments, data collection procedures, and data analysis. Studies in the thesis utilised quantitative and qualitative research methods in a complementary manner. **Papers I**, **II** and **III** are quantitative while **Paper IV** is qualitative. Using both approaches enabled testing and developing hypotheses which added rigor to the research and allowed new insights into the complex issues researched about, and made it possible for the investigator to address practice and policy issues from the point of view of both numbers and narratives (Borkan, 2004; Creswell et al., 2004).

4.2. THE STUDY CONTEXT AND SETTING

4.2.1. Uganda: Location, Brief History, People and Socio-Demographics

4.2.1.1. The Location and Geography of Uganda

Uganda, a landlocked country lies between 1°29' south and 4°12' north latitude, 29°34' east and 35°0' west longitude (UBOS, October, 2006). By relief, about 80% of the country's land surface is a plateau with a rim of mountains draining into the lowlands. Uganda is one of the three east African countries located on the north-western shores of Lake Victoria. Uganda has a surface area of about 241,038 square kilometres and total land area of 197,323 square kilometres (UBOS, October, 2006). The country occupies much of the Lake Victoria Basin, formed by the geological shifts during the Pleistocene era. Much of the south of the country is forested while most of the north is covered with savannah grasslands. The country has a mild and rainy tropical climate but the northeast is semiarid. The fertile soil and adequate rainfall permit extensive agriculture in much of the country. In the drier and less fertile areas, pastoralist economies abound. The proportion of land area which is arable is about 25%. Nine percent is under permanent crops, 9% is under permanent pastureland, 28% is forests and woodland and 29% is savannah grasslands and swamps. About 20% of the country's total area is open water or swampland. Lake Victoria, the second largest inland freshwater lake in the world and believed to be the source of River Nile, dominates a substantial part of the south-eastern corner of the country. The 'finger-like' Lake Kyoga is located in central Uganda. Along the western border are lakes Albert, Edward, and George occupying troughs in the western Rift Valley.

Figure 2: Location of Uganda in Africa, the districts in the country and the study sites
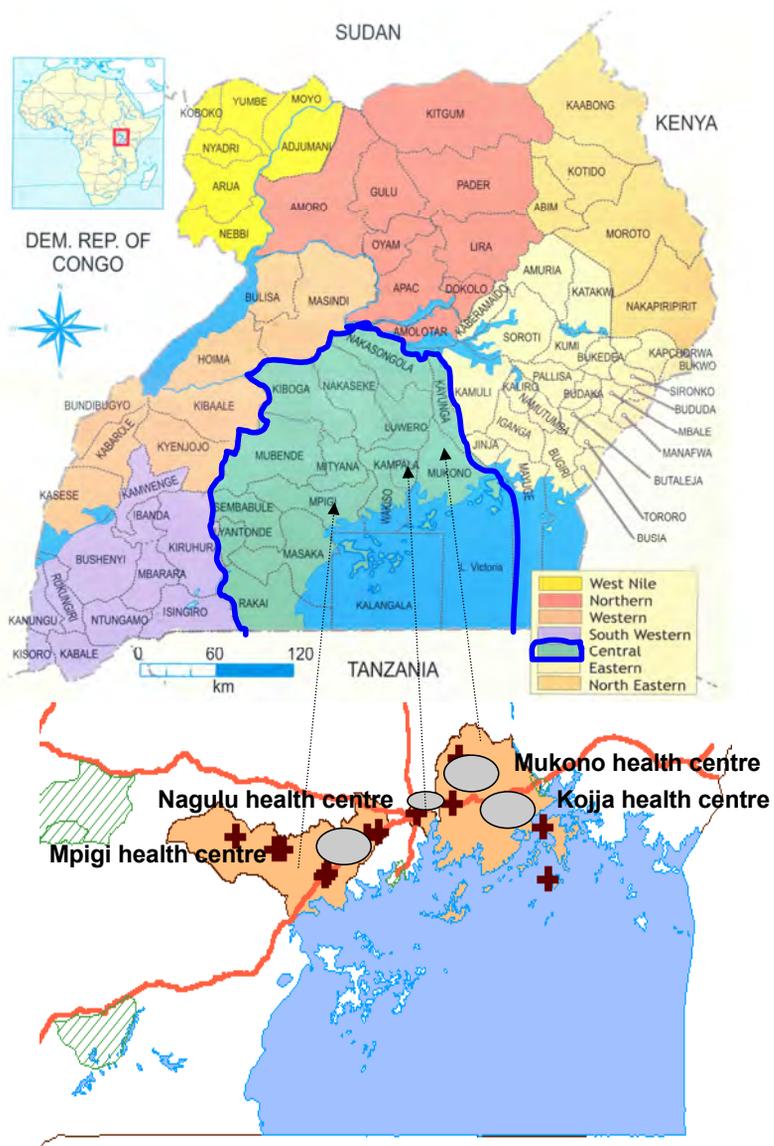
4.2.1.2.   A Brief History of Uganda

Present day Uganda was forged by the British between 1890 and 1926 but as a country, it has a long, traumatic and stressful history. About 2000 years ago, Bantu-speaking cultivators settled in Lake Victoria basin and evolved a clan chief-based governance system. Around 1500 AD, Nilotic pastoralists moved south along River Nile into ancient Uganda. As they acculturated, they adopted the Bantu governance system. The earliest state established from Bantu-Nilotics' encounters was of *Chwezi* pastoral rulers between 1100 AD and 1600 AD. Legends depict the *Chwezi* supernaturally, although archaeological findings show that they were human (Byrnes, 1993; Karugire, 1980). Other states to emerge after some time were; the *Hima*, who lost much of their Nilotic culture to become Bantu speakers and are seen more in Ankore region; the *Bito* who displaced the influential *Hima* in Bunyoro and later, the *Baganda* who established Buganda kingdom.

Ancient Uganda was unknown to the outside world up to 1844 when Arab traders entered Buganda kingdom for trade. The *Omukama* (king) of Bunyoro also welcomed foreigners in 1870s to avert a threat to his kingdom by Egypt-sponsored conquerors. Other foreign visitors to Buganda were explorers Speke in 1862, Grant in 1865 and Stanley in 1875 who persuaded the *Kabaka* (the Baganda King) Mutesa I to request the Church Missionary Society in England to send missionaries to Buganda. In 1877, Protestant missionaries arrived and were followed by Catholics in 1879. By mid-1880s, Christians and Moslems had succeeded to convert substantial numbers of *Baganda*. Suspicious of their motives, a younger *Kabaka*, Mwanga, confined their activities to his court. When he questioned their activities, he was deposed by the British in 1888. A four-year civil war ensued in which he successfully allied with Christians to get back to the throne.

The alliance with Christians weakened Buganda kingdom. The arrival of Captain Lugard working for Imperial British East Africa Company worsened matters. British missionaries urged Mwanga to accept British rule while Catholics stood for Buganda's independence. Fighting erupted between Protestant and Catholic Baganda in 1882. Lugard intervened on the side of Protestants, won the war and paved way for a British protectorate, declared over Uganda in 1984. Protestant Baganda chiefs allied with British imperialists to conquer the rest of Uganda. As a reward, Buganda kingdom was granted some autonomy in the protectorate. Expansion through conquest in colonial Uganda ended in 1926 when boundaries of the country were fixed (Byrnes, 1993; Ibingira, 1973).

In 1949, labourers on cash crop estates of chiefs rioted and burnt houses of pro-government chiefs and the British reacted by banning the Uganda African Farmers Union. The *Kabaka* refused to cooperate with the colonial administrators' plan to integrate his kingdom into an East African federation. He was exiled to London in 1953 but after two years of Baganda hostility, he was returned and given more power. A powerful *Kabaka* as a political force provoked hostility from many quarters. Catholics felt marginalized and formed the Democratic Party in 1952. In 1960, Milton Obote, formed the Uganda People's Congress, a coalition of those outside the Catholic-dominated Democratic Party. Baganda separatists formed *Kabaka Yekka* (The King Only) party which allied with Obote after he accepted Buganda's special status and promised the ceremonial position of Head of State to the *Kabaka*. The coalition led Uganda to independence in 1962, with Obote as Prime Minister and the *Kabaka* as Head of State (Byrnes, 1993; Ibingira, 1973).

After independence, Obote's leadership became ethnically factionalized. His rivals for leadership of the party expressed hostility by passing a vote of no confidence against him in 1966. Faced with a possible rejection by his party, he carried out a coup d'état against his government. He suspended the constitution, arrested the mutinous ministers, abolished federal powers of kingdoms and concentrated presidential powers in his office. The *Kabaka* objected and *Baganda* leaders demanded removal of Obote's government from Buganda soil (Byrnes, 1993; Wiebe & Cole, 1987). Using loyal troops, he attacked and overran the *Kabaka's* palace and relied on the army to retain power. While departing for a Commonwealth Conference in Singapore, he ordered loyal officers to arrest Amin. Amin struck first by ousting Obote in January 1971. What followed were years of bloodshed, factionalism and ethnic politics, both in and outside the military. Ugandan Asians were expelled, their properties seized and general insecurity became a way of life (Kyemba, 1977).

Amin was ousted from power in April 1979. A series of short-lived governments followed. Obote became president again through a disputed election. Yoweri Museveni and armed supporters declared war on his government. Discontent, treachery and tribalism of the second Obote regime lead to his second downfall. The military deposed him in July 1985 but the group was ousted by Museveni's army who claimed the presidency in 1986 and organized government under the National Resistance Movement (Wiebe et al., 1987). In 2000, a referendum about the system of governing the country was held and the National Resistance Movement won, giving Museveni a five-year term of office in 2001. In July 2005, another referendum resulted in inclusion of opposition parties in elections in 2006 which were also won by the National Resistance Movement.

This short description of modern Uganda demonstrates its tortured, bloody and stressful history. Notwithstanding the normalcy brought by President Museveni, the country is not yet peaceful. The vicious Lord's Resistance Army has murdered and kidnapped civilians in Northern and Eastern Uganda since 1986. The resulting violence displaced about 1.7 million people into internally displaced people's camps where conditions are devoid of proper health, socialization and preservation of culture. Social support networks and systems have been disrupted. The internal displacements of families have left women and children in an impoverished position and undermined their role in re-socialization or re-integration. Currently, there are significant developments around the conflict in the north of Uganda. Efforts to broker a peace agreement between the Government of Uganda and the Lords Resistance Army were in initiated in July 2006 by the Government of Southern Sudan. The talks are ongoing and represent a meaningful progress to end the conflict. Therefore, many northern Ugandans are returning to their villages. Obviously, the traumas inflicted on the population are enormous, but have not meaningfully been estimated.

4.2.1.3.   The Peoples of Uganda

The name Uganda comes from *Buganda*, one of the powerful and well organised ancient kingdoms at the advent of British colonialists. There are several tribal groups in Uganda which can be conveniently divided into four broad linguistic categories: the Bantu, the Atekerin (Nilotics and Nilo-Hamites), the Luo, and the Sudanic (Nilotics and Nilo-Hamites) (Mukama, 1986). There is limited mutual intelligibility within languages in each linguistic category and virtually across the four categories (Chibita, 2006). Bantu are the biggest ethnic group and occupy the east, central, west and southern Uganda (UBOS, 2005). The Atekerin group of Nilotics and Nilo-Hamites occupy the

north, part of the east and north-eastern Uganda. The fourth category are the Sudanic speakers of West Nile (Nzita & Mbaga-Niwampa, 1998). There are 56 tribes in Uganda (UBOS, 2005).

There are no clear demarcations separating the linguistic categories in Uganda, given the intermarriages and migrations in the country (Okello, 2006). Linguists estimate that there are between 30 to 40 languages in Uganda although consensus suggests that 30 is more realistic, the rest being considered dialects (Chibita, 2006; Mukama, 1986). Problems in communication across tribes and dialects exist (Mukama, 1986) and complicate data collection through interviews even for Ugandan researchers. There is no official language in Uganda though English is spoken by most people. Even though *Luganda* is unintelligible to most non-Bantu tribes, it is also widely spoken (UBOS, 2005). Kiswahili, a predominant language used by the Armed Forces in Uganda is being promoted in light of efforts at regional integration with East African countries. However, it remains unpopular because it is associated with the marauding and violent armed forces of regimes in the country's recent past (Chibita, 2006).

4.2.1.4. The Baganda

The *Baganda* (singular *Muganda*; often referred by the root word and adjective, *Ganda*), are a Bantu-speaking people whose language is called *Luganda*, and are the largest tribe occupying much of Central Uganda [Figure 2] (Nzita et al., 1998; Sebina-Zziwa, 1999; UBOS, November, 2006). They are a firmly religious tribe and beliefs in superhuman spirits in the form *mizimu, misambwa* and *balubale* abound in the central region. For instance, *Baganda* hold a traditional belief that when the physical body dies, the soul continues to live as *omuzimu* (singular of *mizimu*) which is the same as ghosts. Traditionally, the *mizimu* were believed to operate in families by haunting those that the dead had a grudge with, thereby causing *kiganda* illnesses. Visiting traditional healers by those who perceive their well-being to be threatened by such illnesses to appease superhuman spirits came-up as common practice in this research.

In pre-colonial times, authoritarian control used to be common and obedience to the *Kabaka* was a matter of life and death. *Baganda* culture emphasized individual achievement and a person's future was not entirely determined by birth but through working hard, choice of friends, allies and patrons. Even when the *Baganda* society had classes, there was fluidity in that any person could rise to a position of social importance. At the bottom of the social stratification were *Bakopi* – people who did not matter and deriving livelihood from *Baami* (chiefs) and *Balangira* (princes). Chiefs were not born in the status but attained it through distinguished service, ability, or royal appointment. The highest class is of *Balangira* aristocrats whose right to rule is based on their royalty. The kingdom was divided into administrative units called *Amasaza* (counties), which were further subdivided into *Amagombolola* (sub-counties) that were also sub-divided into *Emiluka* (parishes), also subdivided into *Bukungu* (sub-parishes) and *Byalo* (villages) (Nzita et al., 1998; Sebina-Zziwa, 1999).

Traditional *Baganda* are believed to have been apprehensive of death and did not believe that death could be natural but was attributed it to wizards, sorcerers, and supernatural spirits. Consequently, there are many rituals not only in the family but the whole society following the death of a person, as a stressful life event. For instance, everybody was expected to weep and wail

around the corpse and burial used to be after five days, followed by about month of morning. The ceremonial ritual of *okwabya olumbe* (funeral rites) is still performed by many contemporary *Baganda*, and failing to do it is avoided as much as possible to avoid misfortunes. The ritual is a vital family event marked by a feast (Nzita et al., 1998). During the ritual, an heir is installed if the deceased was the head of the family.

Central Uganda is not exclusively occupied by the *Baganda*. The *Baganda* are known to be culturally accommodative of foreigners. Before the arrival of Europeans, many *Baganda* villages included residents from outside Buganda. Some had arrived in the region as slaves. By early 20th Century, many non-*Baganda* migrant workers had become permanent residents of the kingdom. Marriage with non-*Baganda* is fairly common. Consequently, a number of people from other countries and other ethnic groups in Uganda have been assimilated and have become *Baganda*.

4.2.1.5.   Family Structure in Central Uganda

In African societies, kinship is a basis for the definition of the family and marriage is the foundation of the family. Due to legal, social and religious set-up of contemporary Ugandan societies, three types of marriages are acceptable in the country— customary, civil, and church. Traditionally, families in Africa were extended in structure, comprising of children, parents, relatives, grand-parents, and/or great grandparents, all living together in a household. As elsewhere in most of Africa, the family in central Uganda used to include a male as a head exercising lordship over the wife, children and other people staying in his household. In Buganda, families were known as 'microcosms of the kingdom' (Nzita et al., 1998).

Marriage is regarded as a significant life experience and the unattached person receives no respect, recognition or honour among traditional *Baganda*. The *Baganda* used to be polygamous and divorce was fairly acceptable (Nzita et al., 1998). The period after formal marriage introductions and settlement of agreed-upon bride-wealth is often followed by an exciting festival. In Central Uganda, satisfaction is derived from the successful birth of a child (Barton & Wamai, 1994; Nzita et al., 1998) and begetting a child is a goal every responsible person should fulfil (Nzita et al., 1998). However, the family institution in the region is undergoing significant changes, which are stressful for many people.

 Uganda in general and the central region in particular has witnessed migrations, war-related forced separation of families, and other adjustments in traditional values. Most notable is the development of culturally heterogeneous urban environments. The increase in migration and mobility in urban settings has resulted in increasing structural isolation of the conjugal family and a tendency towards a more nuclear system (Atekyereza, 2001a, 2001b). Single-person headed families mostly due to HIV/AIDS are emerging as a new form of family configuration. Such families are headed by grandparents, single parents, or eldest children when there is no surviving adult. Most single-person headed families live in despair due to resource constraints (Mugisha, 1995)**.** Members of the extended family help where they can but not out of kinship obligation.

Whereas widowed women in traditional African societies would be absorbed into their husband's family through inheritance, there is a shift towards individualism, monogamy and remaining single, especially after losing one's spouse to HIV/AIDS. It is known that widows suffer because of

not being accorded the familial support they once had (Mukiza-Gapere & Ntozi, 1995). Other notable familial arrangements like divorced or separated life styles are becoming common. In the absence of spousal inheritance, widows, the separated and the divorced used to engage in serial marriages to get intimate social support (Adeokun et al., 1997). In the context of HIV/AIDS, opportunities for such people to remarry have reduced considerably due to fear of contracting the disease.

The most common and probably only polygamous family type in Central Uganda and the whole country used to be polygyny, where a man officially married many wives. There is a change towards monogamous families mostly due to the influence of Christianity. However, situations of having strings of sexual partners as mistresses or for females as boyfriends, especially in the urban population are common. Furthermore, domestic violence in the form of psychological, sexual and economic abuse exists. Non-consensual sex within marriage either as marital rape, forced pregnancy or sexual assault is a form of violence rarely discussed or researched but which is known to exist (Odida, 1998). There is emergence of dual-career families where many women have ceased to view their jobs as temporary, supplemental and subordinate to those of their husbands and have become fulltime careerists. In summary, the family is undergoing many stress-evoking changes.

4.2.1.6.   Demographic and Health Services Situation in Uganda

With a population of 24.2 million people in 2002 and an annual growth rate of 3.4%, Uganda is among the most populous countries whose population could increase to 54 million by 2025 (UBOS, October, 2006). By the end of 2007, the estimated population will be 28.4 million (Nabukhonzo et al., 2007). More than half the population are below 18 years of age. By 2002, people living in rural areas were 88% and the average household size was 4.7 (UBOS, 2005). Of the total urban population, 41% are in Kampala, the capital city. Uganda's fertility rate of 6.9% is one of the highest in the world (Nabukhonzo et al., 2007; UBOS, November, 2006).

Male-headed households are 76.9%. Among the female-headed households, 62% are widowed, divorced or separated. Up to 85% of the population are Christians (Catholics 41.6%, Protestant Anglicans 36.7%, Pentecostals 4.7%), and Moslems are 12.4%. While about 60% of persons aged 15 years and above are in a marriage union, 89.4% of the married are in monogamous unions while 55.4% are polygamous. The mean age of marriage is 24.1 years for males and 19.9 years for females. The proportion of the population aged 15 years and above who have never been to school is 24.3% overall (15.5% of males and 32.2 of females). The overall national literacy rate is 69.6% (77.4% of males and 62.4% of females) (UBOS, November, 2006). The proportion of working age population (14-64 years) in employment is 53.3% (59.4% of males and 47.7% of females). Since most people are in subsistence agriculture, the national unemployment rate is estimated at 3.5% (Nabukhonzo et al., 2007). The national underemployment rate is 17%. While 13% of the children are orphans, 20% of orphans have lost both parents. Among the people with disability, 8.2% have a mental health problem (UBOS, October, 2006).

There are 95 males for every 100 females (UBOS, 2005). According to 2000 National Household Survey, 35% of the population live below the poverty line (Appleton, 2001). They cannot meet basic needs like food, water, shelter, clothing, health, education and transport (Okidi &

Mugambe, 2002). Healthcare indices for year 2007 reflect an infant mortality rate of 76 per 1,000 live births (MoH Uganda, 2003), under-five mortality of 156 per 1,000 liver births (UBOS, November, 2006), maternal mortality rate of 435 per 100,000 live births (Nabukhonzo et al., 2007), life expectancy of as low as 48.8 (males) and 52.0 (females) years (UBOS, November, 2006), poor nutritional status with 38% of the children under 5 years of age having stunted growth, and 25% underweight for age (Kinyanda, 2006; Nabukhonzo et al., 2007). The crude birth rate was 47 live births per 1,000 population per year while crude death rate was 14.4 deaths per 1,000 population per year (15.7) for males, 13.8 for females (UBOS, October, 2006).

Using monthly expenditure data to approximate people's income, there is low mean monthly per capita expenditure of 27,300 Uganda Shillings, an equivalent of about US $17, as illustrated in Table 2 (UBOS, 2005). Total per capita health expenditure is in the range of US$7 to US$12, with only US$3.95 attributed to government and donor spending (MoFPED, 1998). The balance comes from individual out of pocket payments. Balances may not be from real earnings but remittances from a small labour force in favour of a bloated extended family network. Other issues associated with the poor health situation in Uganda include a high burden of infectious diseases, a high prevalence of non-communicable diseases like, cancer, diabetes, mental illness and chronic heart disease, inadequate provision of social services, and a poor level of service infrastructure (Kinyanda, 2006).

Table 2: Monthly real mean per capita expenditure (Ugandan Shillings)

	1999/2000			2002/2003		
	Rural	Urban	Total	Rural	Urban	Total
Uganda	20,300	61,300	25,700	21,300	65,400	27,300
Central	27,300	52,400	30,400	28,700	60,800	32,500
Kampala		79,500	79,500		88,100	88,100
Eastern	19,400	44,600	21,600	18,500	44,000	20,500
Northern	12,200	27,900	13000	13,000	30,400	13,800
Western	21,500	58,700	23,700	22,500	47,500	24,500

Source: UBOS, 2005: 42

4.2.1.7. Personnel for Healthcare in Uganda

Uganda is one of the human-resource constrained African countries according to the WHO-Africa Region report (WHO, 2006). In the National Health Policy, it is appreciated that other than the heavy burden of infectious diseases, the country faces a concurrent increase of non-communicable diseases like mental health problems co-morbid with physical illness (MoH Uganda, 1999). Accordingly, mental health is supposed to be integrated in general healthcare and all health workers are supposed to be trained in mental healthcare.

Similar to other developing countries, Uganda has an underdeveloped healthcare infrastructure. It is estimated that there are about 150,000 traditional healers who are far more than modern/Western trained health workers of all cadres in rural Uganda (Okello, 2006). The doctor-patient ratio is about 1:18,000 and may reach 1:510,000 in rural areas (Jagwe, Internet Source). There are distributional problems since most of the well-trained healthcare workers prefer to work

in towns and cities (Okello, 2006). Access to mental health services at all health centres is rare. There are only 27 psychiatrists with about four practising outside of Kampala city. Allied mental health workers like psychiatric nurses are not only scarce but the government which is the main employer is yet to establish positions and define career paths of professionals like occupational therapists, social workers and clinical psychologists in the mental health care system.

4.3. THE STUDY SITES

Recruitment of most respondents for each of the studies in the thesis was done from one urban and two semi-urban, government-funded PHC centres ('level IV') providing free healthcare to people with no or low incomes in three central Ugandan districts of Kampala, Mpigi and Mukono.

4.3.1. Description of the Primary Health Care Centres

4.3.1.1. Kojja Health Centre

This is a 40-bed health centre facility located about 40 kilometres from Kampala city to the south of Mukono district. There is no specific mental health worker at the centre. The facility receives referred patients from lower units and refers those deserving specialized assessment and treatment to larger hospitals. The most common sickness managed at the facility includes fevers, respiratory tract infections, dental problems, urinary tract infections, abdominal complaints, and HIV/AIDS-related illnesses. On a typical working day, about 150 patients go to the facility. It has departments for outpatients, inpatients, and a maternity/antenatal care unit. The outpatient department has a dispensing room, a laboratory and consultation rooms. The approach to healthcare at the centre is biomedical. Traditional healers are influential in the area served by the health centre.

4.3.1.2. Mpigi Health Centre

This is also a 40-bed facility located about 34 kilometres southwest of Kampala City serving a largely semi-urban and poor population. Most patients with complicated ailments deserving specialized management are referred for to Mulago National Referral Hospital which is accessible instead of the district hospital at Gombe. Common sicknesses managed are similar to those at Kojja health centre. The facility is visited by about 70 to 80 patients on a typical working day. The centre employs one psychiatric nurse to manage mental illness. The centre has an HIV/AIDS support group initiated under the prevention of mother to child transmission (PMTCT) programme. Many people in the community served by the facility also consult traditional healers. Similar to Kojja health centre, healthcare is also largely biomedical.

4.3.1.3. Naguru Health Centre

It is located about 3 kilometres from the centre of Kampala City and administered by Kampala City Council. It was originally meant to be a 20-bed facility. Given its urban location, patients at the

centre are multilingual. The facility operates a donor-funded youth and teenage counselling centre providing HIV/AIDS counselling and information that targets young people aged 10 to 24 years. Other departments at the facility include maternity/antenatal, general outpatient clinic, a paediatric unit, family planning unit, a laboratory, and a theatre. When need arises, patients are referred to Mulago National Referral Hospital in Kampala City. Common ailments managed at the facility include fevers, respiratory tract infections, intestinal worms, skin conditions, diarrhoea, and motor vehicle accident victims. On a typical day, about 200 people visit the outpatient department of the health centre. The facility is a popular research site for many institutions. At the time when field-work for this research was ending, the facility recruited a psychiatric clinical officer. Most of the mental health problems presenting before the psychiatric clinical officer were related to abuse of psychoactive substances.

4.3.1.4. Mukono Health Centre

This centre is located about 20 kilometres from Kampala City. On a typical working day, the facility receives about 170-180 patients. Common ailments managed are similar to those in facilities listed above. Though the facility attracts many local and international researchers in all disciplines, there is no independent research done by the health unit. There are a number of traditional healers practicing in areas adjacent to the facility. Administratively, the centre is under the district local government. Apart from carrying out counselling and health education, there were no other psychosocial programmes.

4.3.2. Sites for Paper I and II

Phase one of research initially started with a pilot study and was later expanded as new data to answer some of the questions was generated. In the piloting phase, research assistants were enabled to gain familiarity with the research protocol, the feasibility of data collection and the consent process was tested. The ease of recruiting participants was also assessed. Fieldwork sites for this phase were the PHC centres of Kojja, Mpigi and Nagulu and their neighbouring communities. Pre-testing of research instruments was done among patients at Kojja Health Centre and among neighbouring general population residents.

4.3.3. Sites for Paper III and IV

Data for **Paper III** was collected from attendees at three PHC centres — Naguru, Mpigi, and Mukono in the second phase of fieldwork. During the first phase, it was found that patients from Mpigi health centre were not different from those at the health facility of Kojja. Therefore, a decision was taken to replace Kojja health centre with Mukono health centre which was more accessible. For study participants selected from Nagulu and Mipigi health centres in the second phase, care was taken to avoid recruiting those who participated in the first phase. Fieldwork for **Paper IV** was conducted in villages where caregivers of physically ill patients that had current MDEs lived or could be located.

Table 3: Characteristics of Respondents According to Districts for Studies in Papers I, II and III

Demographic characteristics	Study for Paper I (n = 199)			Study for Paper II (n = 138)			Study for Paper III (n = 255)		
	Kampala	Mpigi	Mukono	Kampala	Mpigi	Mukono	Kampala	Mpigi	Mukono
	n = 96 (%)	n = 54 (%)	n = 49 (%)	n = 53 (%)	n = 46 (%)	n = 39 (%)	n = 77 (%)	n = 75 (%)	n = 103 (%)
Type of respondent									
Depressed	35 (36.5)	21 (38.9)	18 (36.7)	35 (66.0)	21 (45.7)	18 (46.2)	26 (33.8)	26 (34.7)	33 (32.0)
Not depressed	61 (63.5)	33 (61.1)	31 (63.3)	18 (34.0)	25 (54.3)	21 (53.8)	51 (66.2)	49 (65.3)	70 (68.0)
Gender									
Male	45 (46.9)	17 (31.5)	18 (36.7)	24 (45.3)	11 (23.9)	15 (38.5)	32 (41.6)	15 (20.0)	29 (28.2)
Female	51 (53.1)	37 (68.5)	31 (63.3)	29 (54.7)	35 (76.1)	24 (61.5)	45 (58.4)	60 (80.0)	74 (71.8)
Education level									
Never gone to school	6 (6.3)	6 (11.1)	7 (14.3)	4 (7.5)	3 (6.5)	5 (12.8)	2 (2.6)	8 (10.7)	8 (7.8)
Primary level	45 (46.9)	28 (51.9)	25 (51.0)	27 (50.9)	21 (45.7)	15 (38.5)	39 (50.6)	42 (50.6)	45 (43.7)
Post-primary level	45 (46.9)	20 (37.0)	17 (34.7)	22 (41.5)	22 (47.8)	19 (48.7)	36 (46.8)	25 (33.3)	50 (48.5)
Occupation									
Peasants	2 (2.1)	13 (24.1)	17 (34.7)	-	10 (21.7)	12 (30.8)	21 (27.3)	35 (46.7)	30 (29.1)
Regular income earners	62 (64.6)	16 (29.6)	11 (22.4)	38 (71.7)	21 (45.7)	17 (43.6)	31 (40.3)	20 (26.7)	35 (34.0)
No formal job	32 (33.3)	25 (46.3)	21 (42.9)	15 (28.3)	15 (32.6)	10 (25.6)	25 (32.5)	20 (26.7)	38 (36.9)
Marital Status									
Married	50 (52.1)	31 (57.4)	27 (55.1)	27 (50.9)	25 (54.3)	23 (59.0)	45 (58.4)	39 (52.0)	50 (48.5)
Single (Unmarried for Paper I)	46 (47.9)	23 (42.6)	22 (44.9)	12 (22.6)	9 (19.6)	4 9 10.3)	22 (28.6)	15 (20.0)	20 (19.4)
Once married but separated	-	-	-	14 (26.4)	12 (26.1)	12 (30.8)	10 (13.0)	21 (28.0)	33 (32.0)
Parenthood									
Yes, I have children	63 (65.6)	40 (74.1)	38 (77.6)	40 (75.5)	41 (89.1)	33 (84.6)	48 (62.3)	65 (86.7)	82 (79.6)
No, I have no children	33 (34.4)	14 (25.9)	11 (22.4)	13 (24.5)	5 (10.9)	6 (1.4)	29 (37.7)	10 (13.3)	21 (20.4)
Number of children									
Few children (1 to 4)	49 (48.0)	29 (28.4)	24 (23.5)	28 (70.0)	23 (56.1)	18 (54.5)	41 (83.7)	40 (61.5)	55 (65.5)
Many children (> 5)	14 (35.9)	11 (28.2)	14 (35.9)	12 (30.0)	18 (43.9)	15 (45.5)	8 (16.3)	25 (38.5)	29 (34.5)
Family Structure									
Nuclear family	38 (39.6)	20 (37.0)	19 (38.8)	15 (28.3)	13 (28.3)	16 (41.0)	42 (54.5)	42 (56.0)	64 (62.1)
Extended family	58 (60.4)	34 (63.0)	30 (61.2)	20 (37.7)	17 (37.0)	13 (33.3)	35 (45.5)	33 (44.0)	39 (37.9)
Single-parent family	-	-	-	14 (26.4)	13 (28.3)	6 (15.4)	-	-	-
Single person family	-	-	-	4 (7.5)	3 (6.5)	4 (10.3)	-	-	-
Family size									
Small (1 to 6 members)	81 (84.4)	43 (79.6)	35 (71.4)	47 (88.7)	34 (73.9)	27 (69.2)	62 (80.5)	47 (62.7)	79 (77.5)
Large (7 and more people)	15 (15.6)	11 (20.4)	14 (28.6)	6 (11.3)	12 (26.1)	12 30.8)	15 (19.5)	28 (37.3)	23 (22.5)

4.4. STUDY DESIGN, STUDY SUBJECTS, SAMPLES

Studies for **Papers I, II** and **III** were quantitative while **Paper IV** was qualitative in design. **Paper I** was based on consecutive patients interviewed in the process of recruiting cases for the study reported in **Paper II**.

The study for Paper I: A comparative cross-sectional research design was used. Participants were adult patients seeking healthcare at outpatient departments of three PHC centres. A total of 234 patients were approached, accepted to participate and were consecutively recruited.

The study for Paper II: This was a comparative study using a case-control design. Using the STATCAL Calculator (EPI-INFO 6.04b) for unmatched case-control design, confidence interval set at 95%, desired power at 80%, ratio of life event exposures in cases to controls of 1:1 and life event parameters from a Kenyan study (Ndetei et al., 1982), a sample of 116 respondents (58 in each group) was computed. During fieldwork, it was raised to 148 to take care of proportional variability in exposure to diverse life events.

The study for Paper III: The design used was a case-control study. The sample size was also derived using the STATCAL Calculator (EPI-INFO 6.04b) for unmatched case-control design. With the confidence interval set at 95%, desired power at 80%, ratio of life event exposure in cases to exposure in controls at 1:2, life event parameters obtained in the first phase of the research (Muhwezi et al., 2007) and insights from other studies done in Africa (Abas et al., 1997; Orley et al., 1979; Ovuga et al., 1995; Rumble et al., 1996), a sample of 201 respondents (67 cases and 134 controls) was computed. During fieldwork, the samples were increased to 85 cases and 170 controls [total sample of 255] to take care of the proportional variability in exposure to different life event items.

The study for Paper IV: A qualitative approach to research was used, in which in-depth, face-to-face interviews were conducted with 29 caregivers for 29 physically ill patients that also had concurrent MDEs. At outpatient departments of each participating PHC centre, permission was sought from those that screened positive for a current MDE to allow the research team to contact their trusted and closest caregivers. Patients that consented guided researchers in identifying their caregivers who were the ultimate sources of data for this study. The research team had to traverse village communities looking for identified caregivers. On days when a patient identified at the PHC centre could not accompany the research assistant to locate his/her caregiver, the patient gave a sketch map or written directions to be followed later by the researchers. Twenty-six of the caregivers were members of patient's families while three were patient's close friends.

4.4.1. Cases

Cases were adult outpatients seeking help at PHC centres for various physical complaints that fulfilled diagnostic criteria 'A' for a current MDE according to DSM-IV (Already described in chapter 1.3.4). All cases had had depressive symptoms for a minimum of 2 weeks.

4.4.2. Controls

In the study for **Paper II**, controls were from the community (general population). They were a non-patient group selected randomly from similar village localities as cases and had to be neighbours to cases. They lived in similar geographical, socio-cultural and economic environments as cases. On diagnostic assessment, they did not fulfil DSM-IV criteria 'A' for a current MDE. Their life events exposure history was similar to that of cases. In the study for **Paper III**, controls were adult outpatients that sought healthcare at similar PHC centres as cases during the same time. They differed from cases because they did not fulfil DSM-IV criteria 'A' for a current MDE.

4.4.3. Inclusion Criteria for Cases and Controls

In all studies, respondents had to be older than 18 years of age and able to communicate. They had to be able to give written informed consent. For illiterate respondents, their relatives or caregivers had to sign the consent form on their behalf. They also had to be able to speak some Luganda, the language in which interviews were carried out.

4.4.4. Inclusion Criteria for Caregivers of Depressed Patients

The study for **Paper IV** was based on interviews with caregivers of patients that met the DSM-IV criteria for a current MDE. All caregivers had to be adults, trusted confidants of patients, providing care and assistance to meet the patient's physical, cognitive, or mental health needs for at least 1 year without pay and had to living in the same community as the patient.

4.5. MAIN VARIABLES AND TERMINOLOGIES USED

4.5.1. Terminologies Used

- **The family:** This was taken to refer to two or more persons related by blood, marriage, or adoption, and living in the same residence.
    - **A nuclear family** was taken to refer to a household consisting of a parent or parents (father and mother) and their children (siblings).
    - **An extended family** was taken to refer not only to parents and their children but also to include grandparents, aunts, uncles, cousins, and sometimes more distant relatives staying in the same homestead.
- **Screening:** This is doing a test on people at risk of developing a certain disease, even if they have no symptoms to predict their likelihood of having the particular disease.
    - **Sensitivity:** This was taken to be the proportion of patients with a current MDE who had a positive test having been tested on the 4-item Subjective Well-Being (SWB) subscale **(Paper I)**.

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- o **Specificity:** This was taken to be the proportion of patients without a current MDE who had a negative test having been tested on the 4-item SWB subscale **(Paper I)**.

- **ROC Curve:** This was obtained by plotting sensitivity values (true positive fraction) on the *y*-axis against their equivalent (1–specificity) values (false positive fraction) at each cut-off point on the *x*-axis **(Paper I)**.

- **The Area Under [the ROC] Curve (AUC):** This was used as a measure of the overall accuracy or test performance of the 4-item SWB subscale. The values of the AUC range from 0.5 to 1. An AUC of 1 shows that the instrument performs perfectly well in discriminating between a case and a non-case while a value of 0.5 represents accuracy no better than chance (Hanley & McNeil, 1982; Heckerling et al., 2003). A rough guide for classifying the accuracy of a diagnostic test is as follows; 0.90 to 1 = excellent, 0.80 to 0.90 = good, 0.70 to 0.80 = fair, 0.60 to 0.70 = poor and 0.50 to 0.60 = fail (Tape, Internet source) **(Paper I)**.

- **The cut-off score:** This was the minimum acceptable score to define presence of better versus poor subjective well being in **Paper I**.

- **Subjective Well-Being (SWB):** This was used to mean patients' self-evaluation of overall distress, health and energy levels, emotional adjustment, and life satisfaction.

4.5.2. Main Variables

4.5.2.1. A Current Major Depressive Episode (MDE)

This was a description of a person's situation in which he or she had been in low moods for at least 2 weeks and responded 'Yes' to one or both of the first two questions and to an additional three or more other questions in the DSM-IV set of criteria. The MINI module for a current major depressive episode was used as an instrument to reach the DSM-IV diagnosis (American Psychiatric Association, 2000; Bolton et al., 2004; Sheehan & Lecrubier, 1998; Williams et al., 2002).

4.5.2.2. Recent Life Events

The definition of a life event has been given in chapter 1.2. The life events dealt with were recent (up to 6 months before the interview date) discrete changes in the social and personal environment.

- **Independence of a life event:** In assessing this dimension in **Paper II**, emphasis was put on the relationship of the event to the respondent's health status (MDE) and the likelihood that the event was not a consequence or a potential consequence of the psychological or physical state of the respondent (Paykel et al., 1980). For the non-ill (controls), interviewers were asked make the rating by imagining that the respondent had become ill during the period considered (Paykel, 1997). Examples included events occurring to other people and events occurring to respondents by chance, for instance, those linked to societal developments, decisions of others or those not influenced by the respondents like floods.

- **Objective Negative Impact of the life event** (**Paper II**): This was the evaluation of the degree of unpleasantness, stress, or threat that the life event would be expected to exert on an individual

when its full nature and circumstances are taken into account (Paykel, 1997, 2003; Paykel et al., 1980). The measure was applied in such a way as to ensure that it was not influenced by the patient's subjective report of the impact of the life event.

4.5.2.3. Socio-Demographics

- **Religious affiliation:** referred to faith that respondents preferred to identify with.
    - o The category for Christians included Catholics, Protestants, and the Born-again

- **Tribe:** the concept was used synonymously with ethnicity. Other tribes referred to non-Baganda include Bacholi, Bagisu, Bagwere, Bajapadhola, Bakiga, Lugbara, Bafumbira, Banyankore, Banyole, Banyoro, Barrundi, Basamia, Basoga, Batoro, Nubians, and Banyarwanda.

- **Occupation:** was any job that was reported to occupy the respondent for most of the time.
    - o Peasants were respondents whose only occupation was tilling the land for survival,
    - o Regular income earners included business people and salaried workers,
    - o The unemployed included respondents with no regular employment like students, housewives, and those without any jobs.

- **Education status:** was the level of education the respondent had attained and included those that had never gone to school, primary and post-primary.
    - o Primary included those who had ever been to school up to primary seven
    - o Post-primary level included respondents that had some secondary education and above

4.5.2.4. Family Structure Assessment

- **Family Structure:** A living arrangement that a person or a group of persons chose in pursuit of family life. Respondents gave several structural definitions of their families, many of which applied to very few. The descriptions were recoded into nuclear and extended families in **Paper I** and **III** while in **Paper II**, categories of single parent and single person families were retained.
    - o **Parenthood:** respondents were required to answer 'Yes' or 'No' about whether they were parents
    - o **Number of children for respondents who were parents:** A respondent was judged to have many children if she or he had 5 or more children.
    - o **Family size:** A family was considered a large one if it had 7 or more members.

- **Marital Status:** this was how respondents perceived their matrimonial lives and included the married, the never married (single), and the separated.
    - o The separated included the divorced, separated, widows, and widowers

4.6. INSTRUMENTS AND MEASUREMENTS

4.6.1. The 4-Item Subjective Well-Being Subscale Used - Paper I

The parent source of the instrument is the COMPASS OP Treatment Assessment System (Howard et al., 2000). The scale items in the parent instrument are organised into three subscales; (i) Subjective Well-Being, (ii) Symptoms, and (iii) Functioning, making up the Mental Health Index (MHI) and recorded as a progress score. The 4-item version of the SWB subscale suited our study (Howard et al., 1995). The version contains questions on (i) distress, (ii) energy and health, (iii) emotional and psychological adjustment, and (iv) life satisfaction (Lutz et al., 2002). This version has a good internal consistency of 0.79 and a 1-week test–retest reliability of 0.82 with 93 patients, and 0.76–0.85 for other scales when administered 3–4 weeks apart (Howard et al., 2000; Ott & Lueger, 2002). It also correlates very well within a range of 0.70–0.79 with other recognised well-being scales (Lutz et al., 2002; Ott et al., 2002). It has been widely used in assessing outcome of psychotherapy, especially to assess restoration of hope among clients (Ott et al., 2002).

Information generated by the 4-item SWB subscale has been used in the past to supplement and not to replace the clinical interview (Howard et al., 2000). Basic questions that were adopted from the subscale are: (1) "During the last 1 week, how upset or distressed have you been feeling?" (2) "During the last 1 week, how energetic and healthy were your feeling?" (3) "During the last 1 week, how well have you been getting along emotionally?" (4) "During the last 1 week, how satisfied have you been with your life?" Questions had a 5-point fixed response scale as follows; 1 = Not at all, 2 = A little bit, 3 = Moderately, 4 = Quite a bit, 5 = Extremely. For emotional and psychological adjustment question, the 5-point response scale was, 1 = Quite poorly; I have been barely able to deal with things, 2 = Fairly poorly; life was pretty tough for me at times, 3 = So–so; I have been able to keep going with some effort, 4 = Fairly well; I have my ups and downs, and 5 = Quite well; I have no important complaints. Responses for the question on distress were reversed during data analysis to conform to the pattern set by the other three questions. Although subscale items of the instrument were responded to through self-report in other studies, they were adapted for use in face-to-face interviews of a semi-literate Ugandan population.

4.6.2. Mini International Neuropsychiatric Interview (MINI) - Papers I, II, III and IV

The MINI was designed as a brief structured interview for Axis I Psychiatric Disorders based on DSM-IV criteria. Validation and reliability studies comparing the MINI with SCID-P and CIDI show that it performs well and can be administered in a shorter time period (mean 18.7 ± 16 minutes, median 15 minutes) (Pinninti et al., 2003; Rossi et al., 2004; Sheehan & Lecrubier, 1998; Sheehan, Lecrubier et al., 1998). The MINI has been translated and validated in Africa (Moroccan colloquial Arabic) and found to have good psychometric properties (concordance between the translated MINI and expert diagnoses with kappa values greater than 0.80, inter-rater reliability and test-retest were excellent with kappa values above 0.80 and 0.90 respectively) (Kadri et al., 2005). The first two questions in the MINI module for a current MDE (Table 1) were used as screeners for a current MDE. Patients who responded with a 'Yes' to one or both questions were asked to respond to the rest of the module for current MDE. The instrument has an elaborate number of prompts and instructions for the interviewer to steer the interview well.

4.6.3. The Montgomery-Asberg Depression Rating Scale (MADRS) - Paper I

The MADRS is a 10-item quantitative scale assessing the following domains: apparent sadness, reported sadness, inner tension, reduced sleep, reduced appetite, concentration difficulties, lassitude, inability to feel, pessimistic thoughts, and suicidal thoughts (Montgomery & Asberg, 1979). Its utility is in determining the severity of depression. It was used on patients diagnosed with current MDEs to rate severity of depression. In administering the MADRS, interviewers had to oscillate between asking broadly phrased statements about symptoms to detailed ones, which allowed precise rating of severity. The total sum score for MADRS range from 0 to 60. Different levels of depression were derived using the following cut-off points; 0–8 = no depression, 9–17 = mild depression, 18–34 = moderate depression, and 35–60 = severe depression (Muller et al., 2000).

4.6.4. The Interview for Recent Life Events (IRLE) - Papers II and III

The IRLE was developed after observing limitations associated with previous self report instruments, and its reliability and validity assessments are good (Paykel, 1983, 1997). In studies for this thesis, definitions of each item in the IRLE developed by Paykel (1983, 1997) were used to systematically interview respondents about each event. Detailed enquiries were carried out to determine the exact timing, full nature and circumstances of each life event. For example, a rating of 6 was considered for an event occurring in the month immediately prior to the interview date, while a rating of 1 was for an event that happened six months before the interview. Events that happened over a period of time were recorded as having occurred at their major point of impact. The IRLE categorises life events in 10 clusters — work, education, finances, health, bereavement, migration, courtship, legal, family/social relationships, and marital relations. Sixty-three life events are specific and the 64th is for any additional events not catered for elsewhere in the schedule.

For each event, questions guiding interviewers in systematic enquiry were; "To what extent would you say that the event was independent of the patient's condition?" and "What could have been the overall objective negative impact of the event on the study participant?" A five-point scale of independence was used, ranging from (1) almost certainly independent of illness, (2) probably independent of illness, (3) uncertain, (4) probably dependant on illness, to (5) almost certainly dependent. Objective Negative Impact of an event was assessed on scale ranging from (1) severe negative impact, (2) marked negative impact, (3) moderate negative impact, (4) mild negative impact to (5) no negative impact. Objective negative impact was applied in such a way as to be completely uninfluenced by the patient's subjective report of the impact of the life event. Only negative impact was rated. Any event found purely beneficial was rated as having no negative impact (Paykel, 1997).

4.6.5. The McGill Illness Narrative Interview - Paper IV

An earlier version of the McGill Illness Narrative Interview (Groleau et al., 2006) was reviewed to gain insight in framing qualitative research questions. Basing on that review, field experience and research objectives, a checklist of questions for use in in-depth interviews was developed.

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Table 4: Summary of study design data collection, variables used and data analysis

Papers & design	Aim and participants	Main variables	Data collection tools	Data analysis
Paper I Comparative cross-sectional	To pre-test research instruments & ascertain the viability of other studies by determining the feasibility of detecting current MDE in physically ill patients at PHC centres (n=199), To describe the prevalence & characteristics of depressed and non-depressed health care attendees at PHC centres.	• Socio-demographics: gender, age, marital status, ethnicity, religious affiliation, number of children, size of family, family structure/type, educational attainment, occupation, and household headship. • A current MDE: Yes or No to the DSM questions • Subjective well-being: (distress, energy and health, emotional and psychological adjustment, and life satisfaction) • Severity of a current MDE	• Socio-demographic items • The 4-Item subjective well being subscale • The Mini International Neuropsychiatric Interview (MINI) • The Montgomery-Åsberg depression Rating Scale (MADRS)	• Descriptive statistics like frequencies, percentages, means standard deviation • Correlation statistical tests like Pearson's chi-square test (with Yates' correction), Student's t-test & Odds Ratios. • Sensitivity, specificity & ROC analysis • Logistic regression: MDE dichotomized as depressed = 1, not depressed = 0
Paper II Case-control	To identify life events that are risk factors for a current MDEs among the physically ill seen at PHC centres by comparing life events experienced by depressed patients (n = 74) with those experienced by healthy community controls (n = 74). [7 controls who gave incomplete data and 3 who were depressed were discarded at analysis]	• Socio-demographics: gender, age, marital status, ethnicity, religious affiliation, number of children, size of family, family structure/type, educational attainment, occupation, and household headship. • A current MDE: Yes or No to the DSM questions • Life Event items	• Socio-demographic data sheet • The Mini International Neuropsychiatric Interview (MINI) • The Interview for Recent Life Events (IRLE)	• Descriptive statistics like frequencies, percentages, means and standard deviations, • Chi-square statistic with Yates' correction and, when needed, Fisher's Exact Test statistic • Binary logistic regression (backward stepwise); case = 1, control = 0 • Non-parametric Mann Whitney U-statistic for non-normally distributed (skewed) data
Paper III Case-control	To investigate the interface between life events, family structure and current MDEs seen at PHC centres through a comparison of depressed (n = 85) and non-depressed (n = 170) patients	• Socio-demographics: sex, age, religious affiliation, tribe, education, and occupation • Family structure assessment of nuclear and Extended families, marital status, family headship, parenthood, and number of children and size of the family • A current MDE: Yes or No to the DSM questions • Life Event items	• Socio-demographic data sheet • Family structure assessment • The Mini International Neuropsychiatric Interview (MINI) • Modified Interview for Recent Life Events (IRLE)	• Descriptive statistics: frequencies and percentages • Exploratory factor analysis (principal component analysis) (Varimax rotation) • Correlation statistics -Pearson's chi square test (with Yates' correction where necessary) • Crude Odds Ratios • Stratified and Logistic regression (backward stepwise)
Paper IV Explorative study	To explore caregivers' perception of MDEs in physically ill patients, identify what caregivers offer such patients and challenges faced, which life events the caregivers associate with the patient's illnesses, & which barriers and opportunities exist in the family for management of current MDEs (n = 29)	-	• The Mini International Neuropsychiatric Interview (MINI) • The McGill Illness Narrative Interview • Checklist of question items • Audio tapes	• A Thematic analysis approach.

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4.7. FIELDWORK AND DATA COLLECTION PROCEDURE

4.7.1. Procedure for Recruitment of Respondents

After ethical and administrative clearance had been obtained from Makerere University and the Karolinska Institutet, the research team approached health workers in-charge of participating PHC centres to solicit their assistance in data collection. Outpatient departments in each facility were selection sites for respondents. Though each health worker in the departments was requested to help the research team, a specific nurse was nominated as the focal person. All staff members in the departments were briefed about exclusion and inclusion criteria for respondents.

At each facility, the routine was for patients to register before entering consultation rooms. At any time during working hours, patients would be waiting to register before consulting clinicians. On fieldwork days, patients that fulfilled the inclusion criteria were requested to talk to interviewers after they registered. Interviewers were conveniently positioned not to miss eligible respondents. Most interviews were conducted before patients entered clinician's consultation rooms. However, after giving their informed consent, some patients would ask to be allowed to have their health problems to be attended to before being interviewed and such requests were respected. Recruitment of patients after registration eased selection of consecutive patients into the research.

Before asking screening questions for a current MDE, interviewers asked and recorded each patient's responses to questions on socio-demographics and subjective well-being. They then asked screening questions about a current MDE until required samples for studies in the thesis were attained. After identifying a case, 2 appropriate patient controls in the study for **Paper III** had to be selected by interviewers, in consultation with the principal researcher.

To select non-patient community controls **(Paper II)**, leaders in village localities of cases were approached to guide the team in the recruitment and interviewing process. Other than guiding, the Local Council (LC) leaders helped in compiling registers of comparable neighbours to cases selected at PHC centres. The registers acted as sampling frames. All identified potential controls in the depressed patient's neighbourhood had their names written on same-coloured and same-sized pieces of Paper that were folded in a similar way, put in a plastic tin and churned. One piece would be randomly picked from the tin and the name on it would be the neighbour sampled as a control. LC leaders guided each interviewer to the sampled control's household. The assigned research assistant had to seek written informed consent of each selected controls to participate in the study.

Caregivers of depressed patients **(Paper IV)** were identified with the help of their patients that had screened positive for a current MDE. Depressed patients were requested to guide interviewers to their confidant caregivers. Where a patient could not go with the interviewer, he or she would be requested to provide his or her contact address and the contact address of the village chairman. The addresses were later on used to locate patient's homes.

4.7.2. Training of Research Assistants

Interviewers included a psychiatric clinical officer, a psychiatric nurse and two clinical social workers. Training lasted one week and covered information on objectives of the study, field surveys, data collection, fieldwork dynamics, research instruments and ethical obligations of

interviewers. All interviewers were fluent in *Luganda* and experienced in mental health work. They were given opportunities to role-play interview situations using the instrument during training. They discussed *Luganda* versions and English back-translations of questionnaires. During pre-testing of questionnaires, each interviewer practiced by interviewing five respondents who were not among respondents in studies for this thesis to gain familiarity with interview tasks. They cross-checked and internalised concepts in all questions in the instruments which ensured face validity. Appropriate changes were made to the research instrument after the pre-test.

4.7.3. Modification of Research Instruments

The research tool to collect quantitative data was structured and interviewer-administered in face-to-face sessions with respondents. It contained the original English questions and the *Luganda* translations. In the first phase of data collection, the tool contained the unmodified versions of the 4-item SWB sub-scale, the MINI, the MADRS, and the semi-structured 64-item IRLE. In the second phase, the IRLE was modified because it had not captured some central Ugandan-specific life events. Information on life events specific to *Baganda* cultural context was collected during the first phase. For instance, on family and social events, question items on betrothal rites like engagement ceremonies (*kwanjula*), settlement of bride wealth, getting married, funeral rites (*Okwabya olumbe*), spiritual ceremonies, religious events like baptism, dedication of neonates, celebration of special days like Christmas, *Id el Fitr,* and Easter had not been well reflected in the original IRLE and were therefore added as a modification. Other life events that were added include a husband marrying another wife, forceful separation from own children or spouse, crop harvests, misfortunes like death of livestock, war-related trauma (becoming a refugee, being tortured, sexual assault) and sexual problems (sudden sexual dysfunction).

4.7.4. Translation and Back Translation

All measures in the instrument were translated into *Luganda* by two practicing psychiatric nurses who were *Baganda* and fluent in speaking the language in their day-to-day clinical practice in central Uganda. To ensure conceptual equivalence and cultural sensitivity to the local language, two other *Baganda* psychiatric nurses with a similar experience in the language and blind to the initial English version back-translated the *Luganda* version into English. The translating teams held a consensus meeting on concepts where they had divergent views. The instrument was then ready for being pre-tested. Colleagues in the Department of Psychiatry also critiqued the pre-tested version thereby checking face, content and criterion validity. After getting comments on the instruments' suitability, appropriate but minor changes were made.

4.8. DATA ANALYSIS

4.8.1. Statistical Analysis of Quantitative Data

Data for **Papers I** and **II** were entered in EpiInfo while for **Paper III**, Epidata was used. All data were then exported to the Statistical Package for Social Scientists (SPSS) version 10.0, for analysis.

A summary of the statistics used in each of the papers are outlined in Table 3. Cronbach coefficient alphas were calculated to assess the internal consistency of the 4-item SWB subscale in **Paper I**. Logistic regression analysis (backward stepwise) was carried out to explore the predictive ability of SWB items on current MDE in **Paper I**, and to adjust for possible interaction and confounding of categorical variables while evaluating their association with life events, type of study participant and family structure in **Papers II** and **III.** Hypothetically meaningful factors being significant at $p<0.1$ on univariate analysis were entered in logistic regression as independent variables. Odds Ratios and 95% confidence intervals were derived to estimate associations between current MDE and factors related to it.

In **Paper III**, the number of life event variables assessed was arrived at using exploratory factor analysis (principal component analysis). Based on the rule that a minimum of 10 observations per variable is necessary to avoid computational difficulties (Garson, 2006), 18 out 72 life events items were subjected to a factor analysis. We used Varimax rotation, in which we included only Eigenvalues above 1. The acceptable factor loading for each item was 0.5 after the rotation. Level of significance was set at $p \geq 0.05$.

4.8.2. Analysis of Qualitative Data

The data collected using a pre-set question guide was analyzed and interpreted manually using the thematic analysis approach (Boyatzis, 1998; Braun & Clarke, 2006). During data collection, notes about key issues and context were constantly recorded (Glaser, 1978). The *Luganda* audiotapes of all interviews were transcribed (Lapadat & Lindsay, 1999; McLellan et al., 2003) following standard guidelines, translated into English, scrutinized and categorized by a bilingual speaker. Transcripts were reviewed and checked against original audio recording by the first author to ensure translation accuracy. Each transcript was closely read several times to get a thorough familiarization with the depth and breadth of data content, inscribe notes on margins of the data book, identify key words, search for more meanings and patterns and write detailed notes on emerging themes (Braun et al., 2006; Ryan & Bernard, 2003).

Coding was partly approached with questions that inspired the study in mind and with an expectation of coming across novel information too. Building on the process that started during data collection and systematically working through the whole dataset, coding progressed by writing notes in the margins of texts using highlighters to indicate potential patterns. Data were sorted basing on identified patterns and placed under codes where they fitted. The codes identified in the dataset were matched with comparable chunks of data extracts. Thereafter, different codes were sorted into tentative sub-themes and themes through a constant comparison of observed differences and similarities within the data.

As analysis progressed, some tentative themes were found to lack data to support them; others could be accommodated in other themes while others deserved to be broken down. On the basis of study objectives, literature, data content, study context and underlying clusters of concepts; relationships between codes, themes and different levels of themes were reviewed and refined to ensure that they formed a coherent pattern. The final themes were integrated in literature and given theoretical interpretations in the final write-up. The research process followed required procedures during fieldwork, such as regular checking of tape recorders to ensure that they worked reliably and

co-investigators shared and crosschecked the interview transcripts. On one occasion, a respondent had to be re-interviewed (Ahern, 1999) by the principal author to obtain clarity in data. All the way throughout the analysis process, themes were clarified, changed focused and refocused.

4.9. TIME SCHEDULE FOR THE STUDY

Fieldwork to collect data for all the papers took place between October 2003 and September 2006. Drafting of the four manuscripts, submitting them to journals and revising them according to comments received from reviewers happened between March 2004 and July 2007. Writing the thesis started in July 2007 and was completed in October 2007.

5. ETHICAL CLEARANCES FOR THE FOUR STUDIES

To carry out the various studies in this thesis, ethical clearances were obtained from the following authorities:

(i)   The Research and Ethics Committees of Makerere University, Faculty of Medicine in Uganda.

(ii)   The Human Research and Ethics Committee of Karolinska Institutet (Sweden) (reference number KI Dnr: 117/03).

(iii)   The Uganda National Council for Science and Technology Committee on study of Human Subjects.

(iv)   District Directors of the Health Services and other Local Administrators, mostly Resident District Commissioners (RDCs) of the concerned districts.

(v)   The health workers who were in-charge of in participating PHC centres.

All respondents gave written informed consent to participate in the studies. In the qualitative part of the research, they also had to consent having tape-recorded interview sessions. Refusal to participate in the study did not compromise treatment or service to anyone. Respondents were made aware that they had liberty to refuse responding to discomforting questions. All interview sessions were as private as possible to avoid interruptions and to ensure confidentiality.
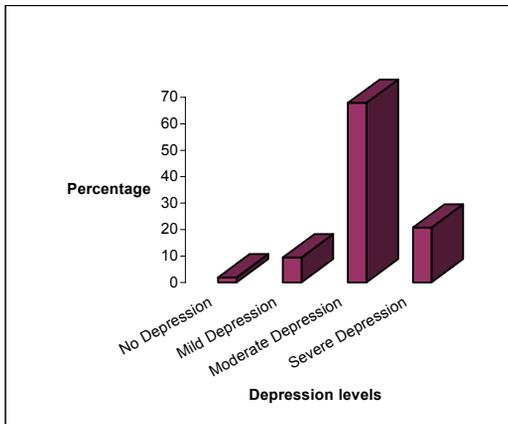
6. SUMMARY OF THE RESULTS

6.1. SUMMARY OF PAPER I

The primary objective in **Paper I** was to determine the feasibility of detecting current MDEs among physically ill patients as seen at PHC centres. The secondary objective was to describe the prevalence and characteristics of depressed health care attendees at PHC centres. On demographics, there were more females (58.1%) than males (41.9%) among depressed patients. Though most of the respondents were young, the non-depressed had a higher proportion of patients aged 18–29 years (60.8% compared to 43.2% for the depressed; $\chi^2 = 5.09$, df = 1, $p = 0.02$). Depressed patients had a higher tendency to be from female-headed households (36.5%) compared to the non-depressed (18%) [Crude OR: 2.05 (95% CI: 1.04–4.03)]. Two significant demographic factors which predicted a current MDE were having many children (OR: 2.35, 95% CI: 1.04–5.30, $p = 0.040$) and having children out of wedlock (OR: 2.05, 95% CI: 1.02–4.15, $p = 0.045$).

The central finding in the study was the support for use of SWB subscale items as good predictors of current MDEs. In a logistic regression, the predictive ability of feeling upset or distressed (OR: 4.20, 95% CI: 1.92–9.19, $p<0.001$), not feeling energetic or healthy (OR: 4.78, 95% CI: 2.18–10.48, $p<0.001$), not getting along emotionally well (OR: 5.56, 95% CI: 2.48–12.49, $p<0.001$), and not feeling satisfied with life (OR: 2.17, 95% CI: 1.02–4.64, $p=0.045$) one week prior to the interview was found to be good. Using the ROC analysis, each SWB subscale item was good in detecting a current MDE among the physically ill, but combining all of them gave a better predictive performance. Having considered the number of possible cut-off scores on the 4-item SWB subscale, 4 to 10 on a scale of 4 to 20 was found to be an optimal level to determine poor versus better subjective well-being. The four questions were found to be easy to administer.

Figure 3: Severity Rating of Current MDEs

The 31.6% [33.3% for males; 30.5% for females] point prevalence of current MDE among patients at PHC centres was rather high. The explanation could be the presence of comorbid disorders not ruled out in the way we diagnosed depression (Angst et al., 2002; Posternak & Zimmerman, 2002). However, diagnostic questions in the MINI applied to many patients as shown in Table 5. Therefore, current MDEs can be recognized universally and in a similar way by health workers using simple instruments. On assessing the severity of depression using MADRS, a dimensional scale, only 2% of the categorically defined MDE patients were not depressed (Figure 3) (Montgomery et al., 1979; Muller et al., 2000). Almost 90% of patients had a depressive episode rated moderate to severe. For any health worker in contact with a

person seeking health care, the study showed that the four items of the SWB scale could be taken as a wake-up notice that the problem at hand could be depression, thereby requiring him/her to investigate more with a view of ruling out depression as one of the differential diagnoses. The fact that patients in this study had not primarily sought help at health centres due to depression but for other physical illness suggests the usefulness of asking screening questions about depression to patients with various medical conditions, especially those which may seem vague.

6.2. SUMMARY OF PAPER II

The focus of this study was to identify life events that were risk factors for current MDEs among the physically ill patients seen at PHC centres. The main focus was comparing life events experienced by depressed patients seen at PHC centres with those experienced by healthy community controls. The two main tasks in the study were to find out whether life events occurring to a person within a six months' period were associated with a higher risk of depression and to assess whether such life events had more objective negative impact among the depressed compared to community controls.

Community controls never fulfilled the diagnostic criteria for a current MDE but their scores on the MINI module for current MDE symptoms ranged from 4.7% - 29.7% as shown in Table 5. There were more females [88 (63.8%)] yielding a female to male ratio of 1.8:1 in the total sample. Community controls had significantly more people with post primary education level [36 (56.3%)] and more regular income earners [44 (68.8%)]. However cases had significantly more with no formal jobs [29 (39.2%)] and more singles by marital status [21 (28.4%)]. Being single by marital status and living in a nuclear family increased the risk of a current MDE.

Table 5: Proportions of diagnostic symptoms for a current MDE applicable to respondents

	Type of study participant	
Diagnostic Symptoms for a Current MDE	**Depressed Patients** **(n = 74)** % (*n*)	**Community controls** **(n = 64)** (%) (*n*)
Depressed Mood (Persistent sadness)	91.1 (68)	29.7 (19)
Anhedonia (Inability to experience pleasure)	79.7 (59)	25.0 (16)
Significant alterations in appetite	77.0 (57)	9.4 (6)
Sleep disturbances (insomnia or hypersomnia)	83.8 (62)	14.1 (9)
Psychomotor agitation or retardation	68.9 (51)	4.7(3)
Loss of energy or constant fatigue	91.9 (68)	14.1 (9)
Feelings of worthlessness/inappropriate guilt	70.3 (52)	4.7 (3)
Diminished concentration (indecisiveness)	62.2 (46)	4.7 (3)
Suicidal ideation or attempts	28.4 (21)	4.7 (3)

There was a predominance of life events among patients with a current MDE, which is consistent with previous studies from Africa (Broadhead et al., 2001; Broadhead et al., 1998; Ndetei et al., 1982; Patel et al., 1997). Females reported more life events. Business failure, retirement, menopause, moving to another country, facing legal problems, a child leaving home, arguments with non-family members and divorce settlements rarely applied to respondents in the study, perhaps reflecting the respondents' unsophisticated lifestyles.

The education level of respondents was modest and the rate of formal employment was low implying that life events relating to paid work, education, finances and migration were few. Depressed patients reported significantly more life events related to work notably; job changes, changes in working hours and working conditions and job losses. Most life events reported by depressed patients were related to losses within the family context. The depressed had lost more in terms of relationships especially; difficulties with fiancés or sexual partners, arguments with resident family members, and marital problems or problems of close family members.

Significant independent life events faced by depressed patients were clustered around work, health, bereavement, and marriage. This may be a reflection of socio-economic stressors that are common in low-income societies, which render coping with illness, bereavement and even positive experiences like marriage, which is often expensive difficult. Secondly, work, education, health and courtship/cohabitation events had more negative impact ratings on depressed patients. Notwithstanding the family buffer, the cost of living in many Ugandan communities as reflected in education, health and sustaining relationships is high (UBOS, November, 2006). The situation may be more precarious for depressed patients who were found to have a higher risk of being jobless and therefore having financial difficulties. Generally, life events had significantly more negative impact ratings among depressed patients.

Although the IRLE lacked important cultural events in the setting in this study — such as funeral rites, visitation by traditional healers, baptismal and betrothal functions — it still emerged as a relevant cross-cultural tool in this life events study. Stressful life events associated with depression at PHC centres, which should be taken as cues for psychosocial interventions like counselling, were identified.

6.3.   SUMMARY OF PAPER III

This report describes results of an investigation into the interface between life events, family structure and major depressive illness seen at PHC centres in central Uganda. The majority of participants (179, 70.2%) were females giving a female to male ratio of 2.4:1. Nearly half of the sample (49.4%) had primary education and (111, 43.5%) had post-primary education. Occupationally, 33.7% were regular income earners. Compared to depressed patients, the non-depressed had more post-primary education and more regular income earners. About half of the respondents were married (52.9%) while 195 (76.5%) were parents. Depressed patients significantly differed from the non-depressed on being single and being separated/divorced/widowed and having children. Being a parent (OR of 2.08; 95% CI: 1.00-4.30, p = 0.049) or widowed/separated/divorced (OR of 1.89; 95% CI: 1.02-3.48, p = 0.043) increased the risk of depression. Earning a regular income (OR of 0.46; 95% CI: 0.25-0.84, p = 0.011) protected against depression. Depressed patients differed significantly from non-depressed patients by reporting experiences of saddening life events, bereavement events and sexual health problems. Depressed patients also tended to have more loss events. There were no differences between depressed and non-depressed patients based on physical complaints they presented at PHC centres as shown in Table 6.

Table 6: Health Problems Presented By Patients at PHC Centres

Health Problem	Type of Patient		Total (n = 255)
	Depressed (n = 85)	Non-Depressed (n = 170)	
	n (%)	n (%)	n (%)
Malaria fever	38 (44.7)	79 (46.5)	117 (45.6)
Sexually transmitted infections	20 (23.5)	36 (21.2)	56 (22.0)
Back pain	2 (2.4)	5 (2.9)	7 (2.7)
Respiratory infections like coughs	6 (7.1)	10 (5.9)	16 (6.3)
Abdominal pains like ulcers	1 (1.2)	4 (2.4)	5 (2.0)
Allergic reactions like itchy skin	2 (2.4)	7 (4.1)	9 (3.5)
Hypertension (Blood pressure)	4 (4.7)	2 (1.2)	6 (2.4)
Dental problems	2 (2.4)	5 (2.9)	7 (2.7)
Injuries	0 (0.0)	6 (3.5)	6 (2.4)
Other ill-health complaints	10 (11.8)	16 (9.4)	26 (10.2)

Notes: Other ill-health problems included sexual performance difficulties, eye infections, joint pains, abscesses and infertility. There were no significant differences in the health problems presented by patients to the health centres

Non-depressed patients from extended families reported more positive and exciting life events, but the difference fell just short of statistical significance. Depressed patients from extended families reported significantly more negative life events related to loss and bereavement. Predictors of depression among patients from extended families included saddening life events like death of a close family member (parents, sibling, or spouse) and poor harvests as well as bereavement-related life events like death of a child and funeral rites. Traditionally, the extended family in most of Africa is supposed absorb shocks against adversity and be a safe haven for social support and socialization of new members (Kayongo-Male & Onyango, 1984). Findings in **Paper III** show that the extended family did not modify the impact of saddening and bereavement-related life events, and it thus did not protect patients from major depression. It is probable that the extended family has become weak and therefore unable to cushion the life event shocks. Loss-related life events independently predicted current MDEs.

Level of educational attainment was related to current MDEs at PHC level in Uganda. Non-depressed patients had significantly higher education compared to depressed patients. Findings in **Papers I** and **III** underscore the importance of children in most peoples' lives. Having many children was associated with depression. In contemporary Uganda, supporting many children is burdensome because it is associated with high costs of education and healthcare. Having no children (being single) was found to be protective against depression **(Paper III)**. Separated, divorced, or widowed patients also had significantly more depression, probably because of the reduced social support mechanisms to buffer effects of the negative life events **(Paper III).**

6.4. SUMMARY OF PAPER IV

The focus of the study was to explore caregivers' perceptions about depression masked in physical illness. The study approach was qualitative and the aims were to find out whether caregivers could identify depressive illness in their physically ill patients, explore caregiver's beliefs concerning

causes, presentation and consequences of depression; explore caregiver's perceptions about the role of life events in their patients' illness and identify how caregivers coped with depressive illness in physically ill patients. Key findings are that caregivers did not distinguish between various physical or emotional dimensions of the illness, nor did they recognize depression in their physically ill patients as an illness entity. The concealment of depression in physical illness was found to render its identification by patients and their caregivers difficult which undermines appropriate care-giving. However, they were able to identify expressions, feelings and behaviour like altered sleep patterns, appetite loss, and slowness in activity and intense sadness in their patients that are diagnostic of a depressive illness.

Therefore, major depression seems to be a known but unrecognized illness. Much of caregivers' concern was devoted to the physical dimension of patient's health. The closest that caregivers came to identifying depression in their patients was when they constantly referred to a phenomenon of *alowooza nyo* or *ayeralikirira nyo* ('thinking a lot' or 'thinking too much'). According to caregivers, the cause of 'thinking a lot' or 'thinking too much' was attributed to the awaiting loss of life opportunities associated with deaths among HIV/AIDS positive patients, worries about vulnerability of children about to be orphaned in case of death, rejection tendencies within the available social networks, poverty, loss of hope in life, loneliness and ceaseless pain.

Caregivers were also able to identify perceived psychosocial stressors which were conveniently grouped as predisposing, precipitating, perpetuating or protective (Kumar et al., 2005) against 'thinking a lot' in their patients. Life events that predisposed and precipitated development of what was considered as 'thinking a lot' in patients included but were not limited to deaths, broken relationships, financial problems at critical times and work-related events. Life events that perpetuated what was considered as 'thinking a lot' in patients included misuse of alcohol and worrisome thoughts. Circumstances that were reported to shield patients from 'thinking a lot' include remission of physical symptoms, social contacts with friends, good nutrition, controlled pain, being attended to in the hospital or health centre, and financial stability.

Caregivers assumed informal counselling roles to alleviate their patient's suffering, discomfort and pain. They tried as much as possible to be emotionally and physically close to their patients, encouraged them to take medication, eat food, and ensured that patients accessed leaders of their religious faiths for prayers.

Care-giving was found not to be without challenges. In managing day-to-day needs of their patients, caregivers reported that they had to wrestle with patients' unclear emotional symptoms, inability to discern treatments to seek, hopelessness, depleted financial resources, patient's inability to function well, and disruption of their daily family routines. They were able to endure the care-giving pressure better if they received social support from other people. Caregivers were found to bear heavy financial burdens as well as experience tendencies to develop physical and psychological reactions like shock, frustration, confusion, depression, sadness, worries and fear. They associated such experiences to their care-giving role. Caregivers deserve support since their physical, psychological, economic and social resources appeared to be overwhelmed by the requirements of caring for physically ill patients who had depressive illness too.

7. DISCUSSION

7.1. REFLECTION ON THE THEORETICAL ISSUES

Research was based on a stress-diathesis model of major depression. The model assumes the presence of underlying predispositions to become depressed which is expressed following exposure to stressful life events. However, a majority of people exposed to the most extreme stressful life experiences are known not to become depressed (Kessler, 1997). This has been attributed to individual differences in stress reactivity as a result of stress-buffering factors like personality, access to social support and genetic vulnerability.

Criticisms of the model's failure to clearly explain the role of a wide range of social, personal, familial, cultural and contextual factors in influencing individual susceptibility to pathological behaviour exist (Beautrais, 2003). The view taken in the thesis is that whereas psychosocial variables are important, how they are perceived depends on the researcher's background and purpose for eliciting information. Studies in the thesis highlight psychosocial stressors and a socio-cultural context whose contribution in the gene-environment explanation for depression in particular and psychiatric illnesses in general has been documented (Kendler et al., 1997; Kendler et al., 1993; Moffitt et al., 2005).

Although the design of studies in the thesis was informed by the stress-diathesis model, only life event stressors and the role of the family as part of the socio-cultural context were investigated. One possible limitation arising from using the model in such a way is that it is not easy to account for the role of other dimensions of the model in the health outcome considered.

7.2. REFLECTION ON METHODOLOGICAL ISSUES

7.2.1. Study Design

Research for most of the studies in the thesis were based on a case-control study design which, given its retrospective nature carries some inherent methodological weaknesses. It would have been better to use incident rather than prevalent cases of current MDEs. Prevalence tends to be influenced by both the risk of developing the disease and factors which determine the duration of illness. If major depression had been present in cases for a long time, it is possible that premorbid exposure to life events would have been harder to ascertain, especially since assessment depended on respondent's memories. It was not easy to determine whether life event exposure happened before or after onset of the depression. Therefore, the studies could only assess associations between life events and depression. The lack of a prospective longitudinal set-up prevents any causative conclusions to be drawn. Besides, cases did not turn up for healthcare at PHC centres because of depressive illness. It was the research team which made the diagnosis of a current MDE in a population of people whose reasons for seeking help were physical complaints.

The validity of findings from a case-control research usually depends on accuracy in definition of cases and controls and the extent to which the design or analysis controls for biases (Breslow & Day, 1980). To minimise misclassification, clear definitions of a current MDE (American

Psychiatric Association, 2000; Bolton et al., 2004; Sheehan & Lecrubier, 1998; Williams et al., 2002) and life events (Paykel, 1997) [given in chapter 1] was used. Secondly, to minimize information bias, respondents in **Papers I, II** and **III** were asked similar questions by research assistants who were not aware of the underlying research study questions. Cases and controls were from similar populations and their selection was independent of exposure to life events. Interviewers were trained to elicit subjective well being, life events and family structure data in a similar way from cases and controls. They were shown how to use memory aids notably calendars and a flash-cards with pictures of cups having different liquid contents corresponding to alternative response categories in different instrument measures to facilitate respondent's recall and rating.

Precision in dating of the onset of the index depressive disorder is a good way of assessing independence of the life event. However, the precision was difficult to attain, given the modestly schooled respondents in the studies. Patients were more concerned about their physical well-being at the time of the interview and not the precise dating of when their mood began to deteriorate. Secondly, patients did not present emotional but physical complaints at PHC centres, possibly reflecting somatic presentations of depression (Taylor et al., 1999). All respondents could not reliably recall when their depressive symptoms began to facilitate proper dating of events. Interview questions had to be anchored to historical and public events to facilitate recall. Another problem was the difficulty to determine whether community controls in **Paper II** had not sought healthcare days or weeks before the interview date. Interviewers had to ascertain that community controls included had not sought healthcare in the six months' preceding the interview date.

Selection of suitable controls is one of the difficult things in case-control studies since with each decision; biases are often likely to arise. In studies for **Papers II** and **III**, controls were not matched on an individual basis but fell within similar age groups and sex distribution. Doing individual matching would have meant that cases and controls would be similar on all variables except life event exposure. For this reason individual matching was not done to avoid the limitation of only using cases whose controls could be matched. There was diversity in physical illnesses presented at PHC centres (Table 6), and matching based on certain variables could have limited the ability to raise controls. Given the decision not to deliberately match, the variability might have become part of the unexplained variation, thereby obscuring important differences.

Controls were selected because their exposure to life events and confounders was taken to represent the population at risk of becoming depressed. Interviewers were required to assess life event exposure among controls with a rate of accuracy similar to that among cases. Other patients at PHC centres were not compared with depressed patients (in the study for **Paper II**) based on an assumption that their medical condition could have been contributed to by life event stress (Paykel, 1994). General population controls were used because they tend to have the advantage that their exposures are likely to be representative of those at risk of becoming cases. However, this might have resulted in a selection bias since cases and controls differed on health seeking behaviour. Cases had attended PHC centres while controls had not. Secondly, exclusion of some respondents in **Paper II**'s control group at the analysis stage due to missing data could have potentially altered the strength and nature of observed associations. However, excluded respondents were randomly distributed in the sample. Comparisons between depressed and non-depressed patients were done for **Papers I** and **III** and trends in findings were similar to **Paper II.** In **Paper III**, two controls for each case were taken to improve statistical confidence. As noted above, findings are presented with awareness of the fact that associations of life events with MDEs never proved a causal linkage.

7.2.2. Research Instruments

Studies presented in all papers used standardised data collection tools. All research instruments were developed in other cultural settings and are yet to be validated in Uganda's multi-cultural setting. They were modified to suit dialectical requirements of the study population. For the IRLE, additional question items were added to ensure a more culturally exhaustive list of life events. The adaptation process was not without risks. Using research instruments developed for use in industrial Western societies in central Ugandan settings raised intellectual discomfort. Although extra care was taken to ensure proper translation from English to Luganda and blind back-translation to English to check for retention of the original meaning, previous cross-cultural research shows that some of the items in these scales may lack validity and reliability in the non-parent culture of the instrument (Zheng & Lin, 1991). This calls for validation of instruments not developed in a given culture if they are to be effectively used in that culture.

Recent attempts to validate the MINI in an African setting shows that it performs well and has good psychometric properties (Kadri et al., 2005). However, the validated version was not available to the research team at planning and implementation phases of studies in this thesis. However, the instrument has been used in Uganda and elsewhere in developing countries and was found to be good (Okello, 2006; Ovuga et al., 2005). The SWB subscale used in **Paper I** was found to perform very well, while the IRLE preformed even better after being modified, presumably because of its flexibility which depends on how properly trained interviewers are (Paykel, 1997). The MADRS has been used before in Africa and it performed well (Sebit et al., 2002). The IRLE, MADRS, and MINI were modified and adapted for use in research for thesis. For purposes of data collection on selected variables, all the instruments were adequate. However, they still need to be validated in different cultural contexts in Africa before their wholesale use as trusted data collection research tools in the future.

7.2.3. Interviewer Distortions

In using face-to-face interviewing, methodological complexities related to distortion in eliciting and interpreting responses could have occurred. The interrater reliability among interviewers was not estimated and the bias arising due the omission cannot be accounted for. However the instruments used were standard with acceptable reliabilities and interviewers were given practical training which must have improved accuracy in eliciting and recording data. Use of face-to-face interviews was the best option since most respondents were either semi-literate or illiterate. With a set of well-developed and systematic data collection instruments, the method has been shown to reliably collect valid data (Dohrenwend, 1995; Paykel, 1997). The experience and skill of trained *Luganda* speakers as interviewers using research instruments that had *Luganda* translations was relied upon to reduce measurement errors (Muhwezi et al., 2007). The process of translation is associated with possibilities of alterations in meanings of concepts. Therefore, an already described process that ensures conceptual equivalence, cultural sensitivity and validity was followed during translation and blind-back translation of the instruments (Chang et al., 1999; Herdman et al., 1997). Though data collection tools in studies for **Papers I, II** and **III** were either totally structured or semi-structured, and unstructured for **Paper IV,** interviewers had to take detailed field notes for later use in clarifying and correcting unclear responses.

Another weakness could have been distortion in recall whereby patients, given their sick role in **Papers II** and **III**, might have attempted to report more life events. Their recall could have been influenced by their depressive symptoms. They might have tried to assign more negative meaning to life events so as explain their depressive illness. To minimize such risks, interviewers had to systematically ask about each life event item. During training and fieldwork, emphasis was given to interviewers' internalisation of life event assessments and definitions (Paykel, 1997). Interviewers had to carry out detailed inquiries to exclude events outside the specified period, those that were likely to be consequences of illness and to do the rating. Unlike self-rating scales, observer-rated instruments like the IRLE have been noted to facilitate temporal organization of personal facts (Barrata et al., 1985).

To ensure adherence to predefined variables and guard against loss of precision in measurement by ignoring valuable data, the primary investigator supervised all the fieldwork in detail. Secondly, each of the items in the IRLE, which was the main instrument in Papers **II** and **III** was defined in great detail to ensure interviewing without deviations (Paykel, 1983, 1997; Wing et al., 1974). Given diversities in interviewers and interviewees, the emphasis during interviewers' training was on consistency in data collection.

7.2.4. Interpretational Limitations

Generalization from a sample to the population is often made on the basis of the relationships between variables. A crucial issue to note is what has been called statistical 'conclusion validity' referring to the degree to which one's analysis allows him/her to make a correct decision regarding the truth or approximate the truth of the null hypothesis. It also involves the decision regarding whether or not variables are related to one another. The magnitude of estimates is important and those bounded by confidence levels are preferred to those with only levels of significance (Cook & Campbell, 1979). It is important to note that in **Papers I, II** and **III**, the magnitude levels have been given with confidence intervals. It should also be appreciated that low magnitudes are common in behavioural sciences such that one has to accept them as they are, and only recognize them as weak (Cook et al., 1979).

In hypothesis-testing situations, presentation of descriptive data with three or more categories in tables is supposed to specify which one is the reference category. It is often against such a reference category that all others in that variable are compared. In socio-demographic tables for Papers **I, II** and **III**, comparisons in variables with more than two categories are based on the total score for all categories as a reference. This is because the intention was not to test hypothesis. The data presented in such tables were from exploratory analysis for description of category membership. This is because it is acceptable to have an exploratory component in an analytical case control study. Even within the confines of a study with narrowly specified hypothesis, a researcher can still gather some data on factors that may provide new leads regarding other potential causes of the study disease (Schlesslman, 1982).

7.2.5. Ethical Concerns in the Study

Other than selected respondents in villages served by the health centres in the samples for **Paper II** and **IV**, other participants were drawn from health centres. Mental health care was not readily available at health centres in the studies except one that had a psychiatric nurse on its staff establishment. Study participants who deserved to be seen by specialized mental health professionals like psychiatrists or psychologists had to be referred to hospitals found far from where they lived. Many of them could not afford to travel due to relatively prohibitive costs. Since most patients suffering from current MDEs were financially unable to pursue the referrals, they were helped only to appreciate their health condition and to learn about the possibilities for professional help.

Other ethical dilemmas encountered in studies for this thesis that undertook a study of a mental health problem in PHC centres of central Uganda included obtaining consent, respondents' participation in unanticipated interviews, intermittent patients' turn-ups at PHC centres, and low levels of formal education.

7.2.5.1. Obtaining Informed Consent

For security, procedural and ethical reasons, the process of obtaining consent was long. To elicit participation of respondents in studies for this thesis, consent had to be obtained at many levels (see Chapter 6). Other than the institutional reviews, the research activity first had to be cleared by the elected leader of the village where the respondent lived, referred to administratively as the Local Council Leader (LC). After clearance, the LC leaders guided the research fieldwork team. In many developing countries, it has been noted that decisions about participation in research projects is taken at a communal rather than household or individual level (Smith & Morrow, 1996). In spite of the communal consent, the fieldwork team still had to explain the study procedures, potential risks, and benefits to respondents. They had to receive written informed consent of all respondents.

7.2.5.2. Respondents' Participation in Unanticipated Interviews

One of the ethical problems during fieldwork was the unpredictability in patients' turn-ups at health centres. Patient turn-up would be very high on days when health centres had adequate drug stocks, implying that research assistants had to step up their work pace. Patients that were depressed had to respond to questions in all research instruments. Interviewing such patients took a longer time. Patients came to health centres not knowing that they would be required to commit some time to be interviewed. Secondly, being subjected to long interviews requiring concentration was very tiring both to the patient and the interviewer thereby raising ethical concerns. To minimise the problem, some interview sessions had to be temporarily terminated or even postponed to the next day and arranged to suit the respondents' convenience. Other respondents were requested to return to the health centre in order to be interviewed on days with less patient load.

7.2.5.3. Compensation for Respondents' Participation

Patients recruited into the research turned up at PHC centres to seek help that did not ordinarily last for long. Their involvement implied committing more time. This raised the ethical issue of time and income lost as a result of participating in the study. Not to be perceived as 'bribing' respondents for the information collected, it was decided to repay motorcycle, bus or taxi fares or the equivalent for respondents that had walked to the health centre. Respondents that were requested to travel back to the health centre on another day had their travel costs reimbursed.

7.2.5.4. Intermittent Flow of Patients at PHC Centres

While some days of the week had many patients coming to the PHC centres, others had very few. Outpatient departments of PHC centres would get overcrowded on days with heavy turn-ups. Consequently, confidential interview of patients would become tricky, given the compromised privacy. The problem was overcome by negotiating with officers' in-charge of health centres to allow the use of consultation rooms and offices that would be free at the moment or any other available shelter under trees or verandas. As long as the interview venue could ensure quietness and calmness, it was used. On days with few patient turn-ups, interviews were conveniently carried out in available consultation rooms or sheltered areas where patients wait for their turn to be seen.

7.2.5.5. Low levels of Formal Education

Respondents (both cases and controls) that had attained secondary school education and above in studies included in the thesis were only 43.5%. In assessing subjective well-being, life event experiences and depressive illness, the basis was on written words and use of exact definitions of terms and measurement of feelings, emotions, and behaviours. It is possible that this exactness was alien to most respondents.

This study is among the pioneering works on mental illness in primary health care in central Ugandan socio-cultural environment, which should perhaps have necessitated exclusive use of ethno-sensitive qualitative methods. Research instruments like the MINI and MADRS, although standardized, allow for a clinical interview where the interviewer probes and paraphrases questions to the point of being convinced that the respondent has understood the question. The IRLE is a semi-structured instrument which allows asking questions in an open-ended way about the different life event experiences. Therefore, even when education levels were low, the approach to studies in this thesis ensured collection of more culturally sensitive narrations.

7.3.   GENERAL DISCUSSION OF MAIN FINDINGS

From the onset, important questions motivated the decision to do research for studies in the thesis. In recapitulation, the questions were: (i) what was the feasibility of detecting current MDEs in physically ill patients seen at PHC centres in central Uganda? (ii) which life events were associated with current MDEs seen among physically ill patients at PHC centres in central Uganda? (iii) how did family structure influence the relationship between life events and current MDEs seen among

the physically ill? (iv) how did patients' caregivers' perceive MDEs in their physically ill patients and how did they care for such patients? and (v) how did caregivers cope with MDEs in their physically ill patients in central Uganda? The upcoming sections show how the four Papers attempt to provide answers to these questions.

From the first three quantitative papers, significant socio-demographic predictors of current MDES among the physically ill turned out to be having many children, having children out of wedlock, and being separated by marital status. Having regular income, higher educational attainment and being single were protective against current MDEs. The findings also suggest that although unidentified, depression in the study population is common and can be detected using simple but creative ways. Secondly, depressed patients from extended families had significantly encountered more loss, bereavement and saddening life events, showing the extent to which 'holes' in the African extended family as a safety net had widened (Seeley et al., 1993). The extended family is supposed absorb shocks arising from life adversity. Unfortunately, findings show that it seems not to be playing that role very well.

7.3.1. Detection of Major Depression in PHC

In spite of patients at PHC centres seeking help due to physical complaints, some of them were found to have a major depressive illness, corroborating findings from other studies (Barkow et al., 2001; Klinkman, 2003). Somatic complaints presented by patients are known to interfere with detection of MDEs in PHC settings (Simon et al., 1999; Zung et al., 1993). Probable factors for under-recognition of depression in PHC include negative attitudes of healthcare providers who do not consider the possibility that their patients might have mental illnesses, crowding in out-patient clinics of most health centres due to a heavy patient caseload, and health care providers' inability to spend a longer time with patients so that they can make a psychiatric assessment and discontinuity in care (Tugumisirize, 2007). It has been noted that if patients see the same clinician on subsequent visits, the possibility of diagnosing depression improves (Kessler et al., 2002). Most depressed patients are known to readily admit psychological symptoms if they are specifically asked about them (Whooley et al., 1997).

Compared to other published studies from Africa and elsewhere, the proportion of patients that fulfilled the diagnostic criteria for a current MDE was rather high (Bolton et al., 2004; Chung & Kraybill, 1990; Kirmayer et al., 1993; Patel et al., 2001; Patel et al., 1997). It is very likely that the prevalence of depression in PHC settings is higher than in the general population. Other explanations could be the differences in diagnostic tools used, the case definition of depression, and the clinical settings from which subjects were recruited. The study for **Paper I** in the thesis that reports the prevalence figure used the symptomatic case-finding approach to diagnose depression which is known to be pragmatic (Williams et al., 2002).

The 4-item SWB subscale was able to separate the depressed from non-depressed patients. Each of the four items was good in detecting depression, but combining all of them gave a better predictive performance which is not different from what was also found in a comparable Japanese study (Yamazaki et al., 2005). Looking at the number of possible cut-off scores on subjective well being scale, it was found that 4-10 on a scale of 4-20 would be an optimal level to determine poor versus better SWB. The four SWB questions could be administered in a short time, such that

patients scoring 4-10 would be subjected to a full diagnostic interview for a current MDE. It is important to note that SWB questions are not diagnostic but they are indicators of what may be distressing the patient (Howard et al., 2000). Use of the subscale items for case identification is likely to be better than routine screening of every patient for depression. This would then free clinicians to focus diagnostic efforts on patients in whom the suspicion of depression is high (Kroenke, 2001).

In spite of criticisms levelled against the cost-effectiveness of routine screening for depression in PHC (Gilbody et al., 2001; Palmer & Coyne, 2003), it still offers the first option in addressing low recognition rates of the illness (Pignone et al., 2002; Williams et al., 1999). Screening is known to increase detection rates by 2 to 3 times (Pignone et al., 2002). Secondly, until effective prevention strategies are developed, high quality depression care begins with recognition and accurate diagnosis (Williams et al., 2002). A workable suggestion is not to leave screening to the already overloaded and overworked PHC providers alone, but it could be delegated to non-clinicians which has implications for staffing at PHC centres. The 4-item SWB subscale items are simple and can be used by non-clinicians who are known to be capable of giving feedback to clinicians (Gilbody et al., 2001). Whereas a clinical interview is necessary to make a definitive diagnosis, experts recommend proceeding from open to narrowly focused questions even in such interviews (Lipkin et al., 1995). Williams et al., (2002) noted that many experts find questions such as "How are things at home?" or "How are things at work?" to be useful in moving from a general to a focussed diagnostic interview. The four subjective well being questions could be applied in a similar way.

Findings presented in **Paper I** point out one of the ways to screen for depression that does not confine itself to technical international classifications of depression alone. For any health worker in contact with a person seeking healthcare, the four items of SWB subscale were shown to be a wake-up notice that the problem at hand could be depression, thereby requiring him/her to investigate more with a view of ruling out depression as one of differential diagnoses. Such quick case finding is important in the often busy and overcrowded PHC settings in most developing countries.

The high burden of current major depression in PHC coupled with availability of treatment for depression should compel health workers and planners at all levels to action and the first action ought to be recognition of the depressed patient (Kroenke, 2001). Indeed, according to MADRS scores in **Paper I**, the severity of depression was high reemphasizing the call for action. Besides, evidence suggests that depressed patients with higher severity of illness receive the greatest benefit from pharmacological treatment (The Swedish Council on Technology Assessment in Health Care (SBU) [IN SWEDISH], May 2004).). The remaining challenge in resource constrained societies appears to be whether benefits of screening can be realized when skills required to do a full psychiatric interview on patients screened positive are unavailable (Pignone et al., 2002).

7.3.2. Life Events and Major Depression in PHC

There was a predominance of life events among patients with a current MDE which is generally consistent with previous African studies (Broadhead et al., 2001; Broadhead et al., 1998; Ndetei et al., 1982; Patel et al., 1997). **Paper II** demonstrates that the relationship between life events and current MDEs is modified by gender, educational attainment and regularity in earning income.

Being female in a situation of stressful life events seems to have been protective against a current MDE. Other studies from elsewhere report either modest or no gender differences (Christensen et al., 2003; Ohaeri et al., 2002; Patel et al., 1997). Culturally, men do not verbalize their suffering and are unlikely to seek help for emotional problems (Alexander, 2001). This is not uncommon in many African societies where men do not usually talk about their personal and private stressful issues, while women share theirs with mostly female friends. Secondly, most respondents reported work-related life events which apply more to men in most of Uganda since they tend to be formally employed while women are over represented in the informal peasant sector.

Most of the reported life events by depressed patients were related to losses in a family context. A preponderance of loss events among the depressed had also been observed (Paykel, 1994, 2003). Depressed patients had lost more in terms of relationships especially; having diffi-culties with fiancées or sexual partners, arguments with resident family members, and marital problems or problems of close family members. This is consistent with other studies that documen-ted such losses as risk factors for affective disorders (Birabwa, 2005; Christensen et al., 2003; Leskela et al., 2004; Rahamn et al., 2003; Schmidt et al., 2004). Presence of marked improvements in relationships with family members and/or close friends and marital reconciliation among the depressed patients was an unexpected finding. This may be explained by the culturally sanctioned family support that is often given to family members considered ill irrespective of the illness found in many African societies. Conversely, improved relationships presuppose a preceding strain. Besides, Ndetei & Vadher (1982) had observed that meaning of each life event is influenced by the cultural context in which it appears.

Generally, depressed patients experienced more life events than general population controls in a period of six months before the interview date, a common finding in past literature (Patel et al., 1997; Rafanelli et al., 2005). Life events significantly had more negative impact ratings among the depressed which is also consistent with earlier findings from the region (Birabwa, 2005; Ndetei et al., 1984). Independent life events were associated with an increased risk of current MDEs in patients compared to general population controls (Christensen et al., 2003; Paykel, 2003). The significant independent life events faced by depressed patients were clustered around work, health, bereavement and marriage. This may be a reflection of socio-economic stressors that are common in low-income societies, which render coping with illness, bereavement and even positive experiences like marriage which need money difficult. Secondly, work, courtship/cohabitation events, health and education-related life events had more negative impact ratings on depressed patients. In spite of the buffer expected from the family, the cost of living in many Ugandan communities as reflected in education, health and sustaining relationships is high (UBOS, November, 2006). The situation may be more precarious for depressed patients who were found to have a higher risk of being jobless and therefore having financial difficulties.

7.3.3. Family Structure, Life Events, and Major Depression

Research reports mostly in the area of HIV/AIDS show that most people's risk for illness is best understood and managed within a family context (Adeokun et al., 1997; Bor et al., 1993; Muller & Abbas, 1990; Seeley et al., 1993; Smit, 2007). Out of the 29 patients' caregivers interviewed in **Paper IV**, 26 were members of patient's families, which is evidence of family involvement in illnesses of a family member. Findings in **Paper III** are in keeping with this observation and give a

picture of how family structure in central Uganda's cultural context modifies the relationship between life events and current MDEs among physically ill patients seen at PHC centres.

Non-depressed patients from extended families had experienced more positive and exciting life events **(Paper III)**. This was not surprising given the many social networks associated with extended families. Culturally, the Baganda, who predominate central Uganda have many exciting events which include, but are not limited to partying and celebration of religious festivities, marriages and child-naming ceremonies (Nzita et al., 1998). Such exciting events are enjoyed and participated in by the wider extended family and friends. Since such events provide opportunities for merry-making and happiness, their ability to relieve stress, promote mental health and enhance social support have been noted (Nzita et al., 1998; Skinner, 1980).

In spite of being a source of social support, the extended family could not modify the impact of two clusters of life events. Saddening life events like death of a close family member and poor harvests as well as bereavement-related life events like death of a child and funeral rites were significant risk factors for major depression among patients, especially if such patients belonged to extended families. One possible explanation for the finding could be due to changes in family structure brought about by the pressure of economic stress, formal education and employment, industrialization, urbanization, migration and effects of globalization in form of Christianity and other neo-colonial influences on indigenous culture (Adeokun et al., 1997; Kawachi & Berkman, 2001; Sendagi, 1997). Traditionally, family members in an African extended family whether related by birth, adoption, marriage or personal connections had a mutual entitlement of receiving social support and an obligation to support other family members, especially in times of need (Ankrah, 1993), a virtue which may be waning.

Another argument could be that this was expected given the large social network. However, the high cost of living in many Ugandan communities as reflected in educational, health, housing and sustaining relationships being high as noted in **Paper II** should be appreciated. This makes extended families burdensome to a few people on whom they depend to access means for modern livelihood in the contemporary society.

The main argument of findings in the thesis is that the extended family has weakened and is unable to cushion life event shocks, especially among the urban low income earners accessing healthcare at facilities studied. While the extended family would absorb the impact of stressful life event effects and protect patients from a major depressive episode in traditional family settings, the opposite was found. Past research has noted that contemporary life in urban Africa is such that even when extended family members live in the same city, they maintain separate nuclear living arrangements(Moore et al., 2006). This is perhaps due to the tendency for the extended family to be a burden on a few people perceived to be 'doing well'. Therefore, having experienced stressful life events, more patients from extended families had current MDEs. The extended family was not protective against depression in a situation of life event stressors as it would have been expected.

7.3.4. Perceptions of Caregivers about Current MDEs

Dealing with concealed depressive illnesses among the physically ill was a ubiquitous scenario that family caregivers confronted on a day-to-day basis. Important to note is that care-giving is a strenuous and burdensome job, a findings which had also been noted (Burns, 2000; Chentsova-Dutton et

al., 2000). Notwithstanding physical or emotional dimensions of patient's illnesses, care giving was still holistic. Indeed, according to caregivers, patients attained some relief from a combination of care by family members at home and help from PHC centres. Although they could not label a depressive episode as such, caregivers could enumerate features suggestive of its diagnostic symptoms as captured in their own words below:

> *"… she stays in the house for long… just sitting alone and you see her mind going astray… the worst thing is that she does not eat… at the health centre, she is given tablets but when they get finished, she again loses appetite… the sickness is worsening and she is now getting every illness that comes… I am a talkative person but she does not want to talk to me as she used to do…"* (44-year-old mother of the patient from rural family)

> *"I feel really bad because he sleeps in the house all through the day and there is absolutely nothing he does for me these days… not even talking!!…"* (28-year-old brother to the patient from a rural setting)

Caregivers therefore described bothersome symptoms in their patients consistent with a diagnosis of current MDEs notably; 'thinking a lot or thinking too much', oversleeping, appetite loss, slowness in activity and intense sadness. Although they did not directly associate their patient's physical illnesses to a depressive illness, caregivers were able to point out physical and cultural issues perceived to bother patients. They thought that their patients were mostly bothered by HIV/AIDS, malaria, chest pains and traditional *kiganda* illnesses.

One important finding from the study is that depression was perceived not just as an 'illness' but as an 'illness of thoughts'. This reflects the way of thinking, feeling and being which has been found to permeate caregivers' perceptions of patients, their lived worlds and the future as noted in literature (Katon et al., 1997; Okello et al., 2006) and in the quotation below:

> *"… at times, she seems to be overwhelmed by thoughts… she is not mentally sick… I think her condition has made her to worry and think a lot… she sits there and thinks a lot… this makes her situation worsen… with going to hospital for regular treatment, may make a difference in her life... she will know what is disturbing her…"* (46-year-old sister to a widowed patient)

Therefore, it appears that a current MDE in a physically ill patient cannot be presented by caregiver or even the patient as a reason for consulting health workers. Even when depression in the physically ill is real, it is not widely discussed or even understood in most societies (Etowa et al., 2007). This has implications for management of depression in PHC since it is known that managing depression requires on-going support not only to the patient but also to the informal caregiver (Chentsova-Dutton et al., 2000; Scazufca et al., 2002).

7.3.5. Resources and Opportunities to Manage MDEs

Even if caregivers did not identify depression as the overt problem of their patients and were unsure about what to do, they revealed a number of resources and opportunities to start with in holistic management of depression. Their ability to meet patients' basic needs for food and shelter and willingness to facilitate access to healthcare is important. Caregivers readily and willingly gave informal counselling to boost patients' self-esteem. Religious faith and spirituality in the form of

prayers and listening to religious music are resources which have been reported to be helpful (Etowa et al., 2007) and they played a soothing role in patients' lives.

In spite of the burden of care, caregivers' availability and closeness to patients is an indispensable resource. Their commitment to encourage patients to turn up at health centres for treatment, procure drugs and even consult traditional healers on behalf of patients is evidence of availability. Even when the extended family in Uganda and much of Africa has been 'over-extended' and is weakening, findings in **Paper IV** show that it still has the responsibility for nursing and care of patients both in and out of healthcare facilities (Clausen et al., 2007; Kalibala & Kaleeba, 1989; Muller et al., 1990; Smit, 2007). The material and moral support in form of remittances and visitation received by caregivers from members of extended family networks are an important resource in management of depressive illness.

7.3.6. Coping With MDEs among Physically Ill Patients

Illness and disease impose heavy burdens on the family as a whole and the caregiver in particular. **Paper IV** shows that caregivers coped with their expected role but they were burdened by care obligations, financial inadequacies and the impact of patients' ailments, an observation made in other studies (Bor et al., 1993; Hartley et al., 2005; Sethabouppha & Kane, 2005). The challenges which caregivers faced in managing physically ill patients with indistinct MDEs included inability to discern which treatments to seek for, hopelessness, depletion of their financial resources, patient's poor functioning and disruption of their daily family routines. Findings in **Paper IV** show that care-giving involves hard work, sacrifice, a decrease in social contacts and other opportunity costs. Similar to studies from the developed world, it is shown that in spite of caregivers' availability and commitment, care giving is associated with considerable physical and psychological vulnerability (George & Gwyther, 1986; Robinson, 1989).

Care-giving for a physically ill person with depressive illness was found to be stressful, often resulting in caregiver burnout. Experiences of sadness, despair, frustration, worries and fear faced by caregivers in day-to-day care of physically ill patients who are depressed suggests that, they too have emotional problems that deserve to be addressed (Bor et al., 1993; Chentsova-Dutton et al., 2000). Indeed, past research has shown that being a caregiver and experiencing mental or emotional strain is a risk factor for early death (Schulz & Beach, 1999). Therefore, caregivers deserve support although some may attempt to resist such attempts on the premise that they do not need such it, or that it would not do them any good, or that their attention is focused on the ill relative (Chentsova-Dutton et al., 2000; Mittelman et al., 2004).

7.3.7. Limitations in results

A number of limitations rooted in research designs used are associated with studies in the thesis. In spite of case-control study designs being cheaper and quicker in assessing life event associations with major MDEs in the physically ill seen in PHC centres, the findings should be seen as tentative open to more comprehensive prospective studies. By design, case-control studies cannot give indications of the absolute risk of factors in question (Shulz & Grimes, 2006). It is also possible that the associations between variables presented could be clouded by unforeseen confounders. Case-control studies are also known to be compromised by bias related to selection of cases and controls,

recall of exposure circumstances and flaws in data collection. Dedicated efforts were exerted to deal with known biases and confounders. The exploratory cross-sectional design for **Paper I** can only suggest that the 4-item SWB subscale is a good screen indicating a high probability to detect major depression. Confirmatory conclusions about the usefulness of the subscale are possible using other research designs. The studies have efficiently identified associations between and life events and major depression in PHC which is valuable information for future research, training and policy.

Results from the medical examination of patients were not included in the analyses. Therefore, making conclusions about major depressive episodes in patients as being secondary or not to physical disorders is difficult. In view of the high morbidity due to HIV/AIDS, malaria, malnutrition, and other infectious diseases common in developing countries similar to Uganda (EAIDSNet, September 2001; UBOS, November, 2006), it is not possible to account for comorbidity. However, the case definition for a major depressive episode that was used is pragmatic (Bolton et al., 2004; Williams et al., 2002). What needs to be appreciated is that findings indicate very high levels of distress in the population studied.

The qualitative study was exploratory implying that findings from **Paper IV** may not be based upon to make empirical, probabilistic generalizations about the wider population. However, partial generalizations to similar populations may be possible (Mayring, 2007, September; Myers, 2000, March). The intention of the study was to gain more understanding of care-giving targeting depression in the physically ill patients using an in-depth examination and contextual analysis of their situation. It is vital to appreciate that knowledge generated by qualitative research is significant in its own right. Although one should be cautious not to draw authoritative and pragmatic quantitative-oriented conclusions from a qualitative study, theoretical generalisation and hypothesis building findings are permissible. The findings provide insight into care-giving for depressed, physically ill patients.

The relatively small sample sizes reported in quantitative studies may limit generalizability of findings. Data was collected from three PHC centres and adjacent communities in each of the studies which may not be representative of all PHC centres in central Uganda. Secondly, a majority of the respondents were low or no-income urban dwellers hence differing from persons in typical rural areas. Sample size may limit the power of statistical tests used. For instance, in assessing independence, negative impact and occurrence in **Paper II**, cases significantly differed from controls, but the probability of having chance findings for some life event clusters was high, as reflected in wide confidence intervals and shrinking strata sample sizes. However, the samples were scientifically determined and are comparable to those used in studies with similar research designs, interest and contexts (Broadhead et al., 2001; Ndetei et al., 1982; Ohaeri et al., 2002; Rafanelli et al., 2005). This makes our findings comparatively credible. Findings give a fair picture of what pertains about life events and depression in PHC. However, further research comprising rural health centres in Uganda are needed to enhance comparisons across the urban-rural divide and cultural contexts.

8. CONCLUSIONS AND IMPLICATIONS

8.1. CONCLUSIONS

- Although the prevalence of major depressive illness at PHC centres in central Uganda is high and easily detectable, it is not recognized and therefore not managed. Findings from this research support incorporating SWB question items into existing patient assessment checklists so as to enhance case finding at PHC centres.

- Case finding among patients with poor subjective well being appears to be better than routine screening of all patients for depression. Patients scoring between 4 and 10 on the 4-item SWB scale should be subjected to a full diagnostic interview for a current MDE. Clinicians should focus on diagnosing only patients in whom the suspicion of depression is high.

- In spite of the expected family buffer, life events in the clusters of work, education, health and courtship/cohabitation significantly had negative impact ratings among the depressed compared to general population controls. There is need for mental health workers to be trained and deployed in communities to promote coping and design psychosocial interventions to manage crisis situations.

- Depressed patients seen at PHC centres in central Uganda are more likely to have experienced stressful life events compared to non-depressed individuals. The ability of the extended family to cushion members against effects of stressful events like deaths, losses, separation, raising children, illness or famine seems to have waned. Patients from extended families appear to have more loss-related, bereavement-related and saddening life events and more depression.

- Although caregivers could not verbally label a current MDE as specified in DSM, they were able to identify features suggestive of depression in their patients. Their ability to recognise depression in their physically sick patients is limited, but the illness is a real problem. Caregivers identified what they perceived to be likely causes of depression, and its perceived consequences on the patient and themselves.

- Home-based management of patients' emotional problems stands out as a fall back-position and as a function caregivers were doing well while health centres were perceived to be good at dealing with physical signs and symptoms of illness.

- Although caregivers appeared to cope with emotional demands of their physically ill patients, it was apparent that they are overburdened by care-giving roles. They display a need for sensitiza-

tion about mental health implications of physical illnesses. They deserve support that targets not only the physical dimension in patients but also the emotional dimension.

- Given the burden associated with care-giving, caregivers' ability to look after their patients was weak. They also deserve support since their physical, psychological, economic and social resources appeared to have become overstretched.

8.1.1. Implications for Clinical Work

Within their families, patients' caregivers dealt with multiple stressors, strains and hassles associated with depression in physical illness on a day-to-day basis. However, they believed that health workers are able to ameliorate patient's suffering and discomfort. Therefore, it makes sense if professional health workers could supplement management of patients' physical complaints with counselling and advice to the patient and the caregiver. Professional health workers are better positioned to support the informal caregivers in patient care. The role played by caregivers in adherence and compliance with different management options is well known (Sher et al., 2005; Vlasnik et al., 2005) and would be enhanced if health workers complement their involvement in patient care.

Patients in studies for the thesis had not primarily sought help at health centres due to depression but for other physical illness. Other than findings from this research, it is known that chronic medical illness, chronic symptoms, recent life changes or stressors, fair or poor self-rated health, and unexplained physical symptoms are all associated with depression (Kroenke, 2001; Kroenke et al., 1994). Therefore, findings re-emphasize the usefulness of considering social, physical and psychological complaints of the patient in clinical situations.

8.1.2. Implications for Training

The reality of stressful life events being prevalent among depressed patients at PHC centres calls for more mental health workers to be trained and deployed in crisis centres in communities to provide psychotherapeutic services which lessen escalation of distress and promotion of coping. The challenge is to train health workers in such a way that they appreciate life events as a central nexus in the relationship between the environment and biology as determinants of health and well-being.

The studies highlight the need for training of informal helpers like traditional healers, village elders, teachers, volunteer village health workers, and members of religious communities (like the clergy, catechists, mullahs etc.) to provide counselling in the community. This is because life events found to be associated with depression are also community events that may never be brought to the attention of clinicians in health centres. The role of informal helpers in giving support and therapeutic services is further bolstered by findings from **Paper III** showing a support gap due to the weakening contemporary African extended family. Extended family networks appear to be overstretched and unable to cushion the deleterious effects of stressful life events.

Patients turned-up at health centres with physical complaints and it is specifically those complaints that would be managed at that level. However, it is important for all health workers to

appreciate the complex interrelationships between biological, psychological and socio-cultural dimensions of health and illness. Unless healthcare practitioners appreciate the role of inquiring about psychological and social issues to a patient, such issues will continue to miss out from clinical situations yet they are crucial in the biopsychosocial model of patient care. Even when the bio-psychosocial approach to health care has been around for a while, the shift in paradigm so that it is embraced in all healthcare professions is still unfolding. The challenge to traverse and implement the approach in all training curricula still exists.

8.1.3. Implications for Research

Whereas the family in Africa has always been extended, dynamism in society implies that similar to other social institutions, it has undergone changes. Findings in the thesis emphasize the need for cultural-specific studies about the changing family structure and the impact on its functioning in Uganda and other developing countries. It is possible that the changes in family structure have implications for family therapy interventions. It is known that disrupted social support networks predispose to depression and worsens its evolution (Blazer et al., 1992). Studies in this thesis show that depressed patients from extended families had a preponderance of stressful life events. More studies are needed to unravel what is happening in the family set up.

Conjectures about having post-primary education, regularity in income and being single by marital status being protective against major depression seen among physically ill in PHC centres in central Uganda need more investigation. Similarly, having many children and being separated, divorced or widowed appeared to increase the risk of depression in the study sample. Given the exploratory nature of the analysis for socio-demographic characteristics in studies done, these observations should be considered as arguments for more research.

8.1.4. Policy Implications

Many caregivers could not identify the depressive dimension of their patient's illnesses. The predo-minant view was that once the physical dimension of illness could be professionally managed by health workers, the patient should feel better. This is a reminder about how modest people in the community get concerned about issues of mental health and well being. This should worry policy makers and implementers who suggest that mental healthcare has been incorporated in PHC. It also raises the issue of the need to sensitize community members to appreciate that mental health is not only about severe forms of mental illness. The feeling from the community appeared to be that susceptibility to mental health problems was not yet a concern of each individual. This has implica-tions for the demand, access and utilization of mental health services.

The fact that patients had not primarily sought help at health centres due to depression but for other physical illness suggests the usefulness of asking screening questions about depression to patients with various medical conditions, especially those which may seem vague. Joint considera-tion of depressive and physical symptoms might help to identify those at a high risk for depression. The implication is that health workers and planners at all levels should invest in attempts to recog-nize depressed patients among the physically ill in PHC.

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