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Original Paper

Life events and depression in the context of the changing African family

The case of Uganda

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Abstract. ***Introduction:*** Traditionally, the African extended family gave psychosocial support to all members, which cushioned any illness effects including depression. Recent changes in the African family, notably urbanization and market economies, have changed that structure. Changes, especially roles of the family and its relationship to life events and depression, have not received much research attention. ***Aim:*** To compare depressed and non-depressed patients in terms of their demographics, family structure, life events and depression. ***Methods:*** We compared quantitative data from 85 DSM-IV depressed patients that sought care at three Primary Health Care (PHC) centres with 170 unmatched non-depressed patients. To each group, we administered three questionnaires covering socio-demographics, family structure and an adapted Interview For Recent Life Events (IRLE). ***Results:*** Of the depressed patients, over 70% were females giving a M:F ratio of 2.3:1; 71.8% were aged ≤ 39 years and 50.6% were married; the single were 14.1% and 73.9% belonged to male-headed households. Depressed patients significantly differed from the non-depressed in having less post-primary education (p=0.02), fewer singles (0.04), fewer had regular incomes (p=0.01), more were single parents (p=0.02) and separated (p=0.01). Family structure in the two groups never significantly differed. For life events, depressed patients had more deaths of close family members and poor harvests (p=0.003), deaths of children and funeral rites (p=0.014) and sexual health problems (p=0.002). Positive exciting events were more common among non-depressed patients from extended families (p=0.047) while saddening and bereavement events were more common among depressed patients from extended families. Sexual problems were more common among depressed patients and from nuclear families (p= 0.001 & 0.006 respectively). Being a regular income earner was protective against depression [OR=0.45 (95% CI: 0.23-0.85)]. ***Conclusion:*** Depressed patients were often single, separated and had children signifying family break ups. They had less income, lower education and had experienced more negative life events, highlighting the weakened family ties in times of modern adversities. This calls for training of more mental health workers and informal helpers for vigorous family therapy interventions in modern Africa, in the face of the weakening extended family.

Keywords: Uganda, Life events, family structure, depression

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INTRODUCTION Traditionally, the African extended family gave psychosocial support to all members, which mitigated against any illness effects including depression (Ankrah, 1993). However, the traditional African extended family has changed due to factors like urbanization, market economies and diseases (Kayongo-Male & Onyango, 1984; Levine, 1990; Mukiza-Gapere & Ntozi, 1995a). The implication of such changes on the relationship between life events and depression has not received much research attention.

The family is one of the most important of social systems. However, the relationship of its functioning to major depressive illness (MDI) has not received adequate attention in Uganda. This is possibly due to the overzealous focus on biological and neurological basis of depression (Keitner

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et. al, 1995). Negative life events experienced in the context of the family have been reported to make family members doubt their ability to cope, to undermine their stress management potential and to predispose them to clinical depression (Ankrah, 1993; Murphy & Perry, 1988). On the other hand, family functioning has a known moderating effect on the impact of negative life events (Mukiza-Gapere & Ntozi, 1995b; Rutter, 1985). It is important to note that most life events that people go through are family related (Bor et al., 1993). The interface between family structure, life events and depression as seen in patients at primary health care (PHC) centres in an African context is important in identifying possible culture-specific management options for depressive illness.

A few studies from Sub-Saharan Africa have attempted to explore the relationship between family functioning, life events and depression (Ndetei & Vadher, 1982; Ohaeri & Otote, 2002). Family-related life events like major financial problems, unemployment, a family member leaving home and death of an immediate family member were found to be associated with depression. In another study among women in urban Harare, the depressed were found less likely to be in formal employment, less likely to have an employed husband, not likely to have had crisis support following a major life event, more likely to live in overcrowded conditions and to have been separated from their mothers for more than a year before 11 year of age (Broadhead et al., 2001). However, these studies did not look at how family structure moderated the relationship between life events and depression in the patients they saw or at Primary Health Care (PHC) centres.

In this study, a normal nuclear family was defined as a household consisting of parents (father and mother) and their children (siblings). Conversely, an extended family was taken to consist not only the nuclear parents and their children but to also embrace any combination of grandparents, aunts, uncles, cousins, and sometimes more distant relatives all of them staying in the same homestead.

The primary objective of the study was to compare depressed and non-depressed patients seen at PHC centres in Uganda in terms of their demographics, family structure and life events.

METHODS

Data was collected from July to October 2004 at three primary healthcare centres, one from each of the districts of Kampala, Mukono and Mpigi all located in central Uganda. Patients at these health centres can be described as both rural and urban rural and speak Luganda, the local *Bantu* dialect and English.

Study Design

This was an unmatched case-control study design. Consecutive adult patients seeking healthcare at the outpatient departments (OPD) of each of the three PHC centre were eligible and asked to participate in the study. Voluntary informed consent was obtained after explaining the study and its purpose. The first author, assisted by research assistants (a psychiatric clinical officer, a psychiatric nurse and a clinical social worker), interviewed those who consented. Members of the research team were trained on the use of study instruments and how to ethically conduct the study. Other than the first author, research assistants were unaware about the study hypothesis.

Sample Size

This was calculated using the software programme STATCAL Calculator (EPI-INFO 6.04b) for unmatched case-control study design. The confidence interval was set at 95%, power of 80%, and a ratio of cases (patients with depression) to controls (patients without depression) of 1:2. The expected frequency of depression in the general population was 14%, as found out among a population of university students in a recent study (Ovuga et al., 1995). Earlier on, a study done in 1970's in two Ugandan villages, put the prevalence of depression in the community in males at 14.3% and females at 22.6% (Orley et al., 1979). In other studies of depression in patients attending primary health care, the prevalence of depression and anxiety was put at 23% in South

Africa (Rumble et al., 1996) and 31% in Zimbabwean women (Abas & Broadhead, 1997). In a study PHC centres in Uganda, Muhwezi et al. (2006) estimated a likely depression prevalence of 31.6% in a Ugandan population of patients and exposure to bereavement life events of 28.4% among cases while it was 11% in controls. Basing on those estimates, a sample size of 186 or 93 patients per group was calculated (if ratio is 1:1). Since estimates of exposures to life events among depressed at PHC centres was twice that in the community, it was decided to recruit the two groups in the ratio of 2 non-depressed to 1 depressed patient (67 cases and 134 controls). The sample was increased during fieldwork to 170 non-depressed and 85 depressed patients.

Study Subjects

We used the first two questions on the Mini International Neuropsychiatric Interview (MINI) depression module, to screen for a current Major Depressive Episode (MDE) (Sheehan & Lecrubier, 1998). Cases were patients that responded in the affirmative to both or one of the first two questions in the module and three or more others in the same module. Therefore, cases met the DSM-IV symptom criteria "A" for a current MDE. Controls were an unmatched sample of patients attending the same health centres that never had a positive diagnosis of a current MDE. All study participants were above 18 years of age, talked willingly and gave informed consent.

Study Variables

Participants responded to a structured interview on socio-demographic characteristics of sex, age, religious affiliation, tribe, education, and occupation. To get family structure data, all participants responded to a standardised questionnaire with typologies of nuclear and extended families, marital status, family headship, parenthood, and number of children and size of the family. To determine a current MDE, patients responded with a 'Yes' or 'No' to questions in the module for a Current MDE using the structured categorical responses as spelt out in the MINI (Kadri et al., 2005; Sheehan & Lecrubier, 1998; Sheehan et al., 1998). Screeners for a current MDE were the first two questions in the module.

Ascertaining the presence or absence of life events for each respondent was done using question items adapted from the Interview for Recent Life Events (IRLE) (Paykel, 1997), which lists 64 life event items grouped in 10 possible clusters namely work, education, finances, health, bereavement, migration, courtship, legal, family/social relationships and marital relations. The time period referred to for each interview was up to six months before interview date. Only 63 out of the 64 events are specific, the last coding being for any additional events not included elsewhere in the schedule. Interviewers had to note everything that each respondent said for rating the interview soon after the face-to-face session. Interviewers systematically enquired about each event unless it could not apply.

In adapting the instrument to the *Ganda tribe* cultural context amongst whom the study took place, we added items found culturally relevant to the Ganda people during the pilot phase of the study. On family and social events, we added betrothal rites like engagement ceremonies (*kwanjula*), settlement of bride wealth, getting married, funeral rites (*kwabya O'lumbe*), spiritual ceremonies, religious events like baptism, dedication of a newly born, celebration of special days like Christmas, Idd el Fitr and Easter. Other events included husband marrying another wife, forceful separation from own children / spouse, crop harvests, misfortunes like death of livestock, war related trauma (become a refugee, torture, sexual assault and others) and sexual problems (sudden sexual dysfunction).

Data collection

To ensure a high response rate, participants were given face-to-face interviews using structured interview schedules in Luganda, the dialect spoken in the in the study area. All instruments were translated from English to Luganda and back-translated to ensure content validity, achieve conceptual equivalence and cultural sensitivity. To attain face validity, the study instruments were pre-tested during the pilot phase on a sample of 15 respondents who did not take part in this study. Appropriate changes were made after piloting.

Conducting of Interviews

Interviewers were all professional mental health workers. They were offered more training about aspects of the study like field surveys, data collection methods, dynamics of fieldwork, content of research instruments, and their ethical obligations as interviewers. All the interviews were conducted in private environments to avoid interruptions and to ensure confidentiality.

Ethical Issues

Ethical clearances were obtained from the following sources: the Research and Ethics Committees of Makerere University (Uganda), the Human Research and Ethics Committee of Karolinska Institutet (Sweden), the Uganda National Council for Science and Technology Committee on study of Human Subjects, the District Directors of the Health Services in concerned districts, and finally, the authorities in- charge of PHC centres. The conduct during the study adhered with Helsinki Declaration (World Medical Association, 2002). Participants in need of specialist attention were referred to appropriate professionals

Data Management And Analysis

Data was entered in EpiData Version 3 and exported to Statistical Package for Social Scientists (SPSS) version 10.0 for cleaning and analysis. At a descriptive level, cases and controls were compared on demographics using frequencies and percentages. The number of life event variables assessed in data analysis was arrived at using exploratory factor analysis technique (principal component analysis). Basing on the rule that a bare minimum of 10 observations per variable is necessary to avoid computational difficulties (Garson, 2006), 18 out 72 life events items were put in a factor analysis. We used Varimax rotation, in which we included Eigenvalues above 1. The acceptable factor loading for each item was 0.5 after the rotation. To explore relationships between variables, the Pearson's chi-square test (with Yates' correction where necessary) and Crude Odds Ratios were used for categorical variables. Stratified and multivariate backward stepwise logistic regression analysis was used to adjust for interaction and confounding of socio-demographic and family structure variables while evaluating the association between life events and type of patient. For regression analysis, type of patient was entered as depressed = 1, not depressed = 0. Life event components selected with factor analysis were entered as present versus absent (yes/present = 1, no/absent = 0). Family structure variables of extended and nuclear were each entered separately as 1. Level of statistical significance was set at 5%.

RESULTS

Socio-demographic Characteristics

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. There were no significant differences between depressed and non-depressed patients on the parameters of age, tribe, sex and religious affiliation as shown in Table 1.

Table 1. Demographic Characteristics of Study Participants

Demographic characteristics	Type of Patient: Depressed (n = 85) *n (%)*	Type of Patient: Non-Depressed (n = 170) *n (%)*	χ^2	*p* value	Crude OR (95%CI)
Ethnic belonging (tribe)					
Baganda	69 (81.2)	127 (74.7)	0.99	0.319	1.46 (0.77-2.78)
Others‡	16 (18.8)	43 (25.3)			
Gender					
Male	26 (30.6)	50 (29.4)	0.00	0.961	1.06 (0.60-1.87)
Female	59 (69.4)	120 (70.6)			
Religious affiliation					
Moslems	12 (14.1)	30 (17.6)	0.29	0.591	0.77 (0.37-1.58)
Christians[1]	65 (76.5)	119 (70.0)	0.88	0.348	1.39 (0.77-2.54)
Born Again	8 (9.4)	21 (12.4)	0.24	0.625	0.74 (0.31-1.74)
Education level					
Never gone to school	8 (9.4)	10 (5.9)	0.61	0.437	1.66 (0.63-4.38)
Primary level	49 (57.6)	77 (45.3)	2.98	0.084	1.64 (0.97-2.78)
Post-primary level[2]	28 (32.9)	83 (48.8)	5.19	0.023*	0.52 (0.29-0.89)
Occupation					
Peasants[3]	34 (40.0)	52 (30.6)	1.84	0.174	1.51 (0.88-2.60)
Regular income earners[4]	20 (23.5)	66 (38.8)	5.27	0.022*	0.49 (0.27-0.87)
No formal job[5]	31 (36.5)	52 (30.6)	0.65	0.422	1.30 (0.75-2.26)
Age (years) (n = 255)§	33.67 ± 13.16	32.12 ± 11.95		0.347	
Number of children in a home (n = 204) §	3.85 ± 2.63	3.88 ± 3.26		0.954	
Number of relatives in a home (n = 244) §	5.38 ± 3.57	5.03 ± 3.07		0.442	

[1] Christians include Catholics and Protestants.
[2] Post-primary level includes respondents that had some secondary education and more (post-secondary).
[3] Peasants are respondents whose only occupation was tilling the land for survival.
[4] Regular income earners include business people and salaried workers.
[5] No formal job includes students, housewives and the unemployed.
‡Other tribes include Bacholi, Bagisu, Bagwere, Bajapadhola, Bakjga, Lugbara, Bafumbira, Banyankore, Banyole, Banyoro, Barrundi, Basamia, Basoga, Batoro, Nubians and Banyarwanda,
§ Mean plus or minus Standard Deviation
* Significant at $p \leq 0.05$

Note: We used the Pearson Chi-Square test with Yates' correction.

Compared to depressed patients, the non-depressed also tended to have more post-primary education ($p = 0.023$) and to be more regular income earners.

Family Structure Dynamics

Family structure dynamics are summarised in Table 2 below.

Table 2. Family Structure Characteristics of Study Participants

Family characteristics	Type of Patient		χ^2	*p* value	Crude OR (95%CI)
	Depressed (n =85) *n (%)*	Non-Depressed (n =170) *n (%)*			
Marital Status					
Married	43 (50.6)	91 (53.5)	0.09	0.756	0.89 (0.53-1.49)
Never married (Single)	12 (14.1)	45 (26.5)	4.29	0.038*	0.46 (0.23-0.92)
Separated[1]	30 (35.3)	34 (20.0)	6.26	0.012*	2.18 (1.22-3.91)
Parenthood					
Yes, I have children	73 (85.9)	122 (71.8)	5.52	0.019*	2.39 (1.19-4.40)
No, I have no children	12 (14.1)	48 (28.2)			
Number of children for respondents that were parents[2]					
Few children (1 to 4)	48 (65.8)	88 (70.4)	0.27	0.602	0.81 (0.44-1.49)
Many children (5 and more)	25 (34.2)	37 (29.6)			
Family Structure[⌘]					
Nuclear family	51 (60.0)	97 (57.1)	0.09	0.753	1.13 (0.67-1.92)
Extended family	34 (40.0)	73 (42.9)			
Family size					
Small (1 to 6 members)	61 (71.8)	127 (75.1)	0.18	0.668	0.84 (0.47-1.51)
Large (7 and more people)	24 (28.2)	42 (24.9)			
Household headship					
Male-headed	62 (73.9)	133 (78.2)	0.61	0.434	0.75 (0.41-1.37)
Female-headed	23 (27.1)	37 (21.8)			

[1]Once married but later separated, divorced or widowed.
[2]Respondents who were parents were 195 in total (73 cases) & (122 controls)
[⌘]One respondent missed data on household structure
* Significant at p≤0.05
Note: We used the Pearson Chi-Square with Yates' correction

Half of the respondents were married (52.9%), while 195 (76.5%) were parents. Depressed patients significantly differed from the non-depressed on parameters of having never married i.e. singles (p=0.038), being separated/divorced/widowed (p=0.012), and having children (p=0.019). There were no other significant differences between depressed and non-depressed patients on the family structure dynamics. Proportions of respondents from monogamous nuclear families in the two groups were similar (32.9%) while that from extended families was not significantly different (36.5% for depressed versus 38.8%; p=0.820). Proportions of respondents from single parent families were also not significantly different (27.1% for depressed versus 22.9%; p=0.570). Respondents from single parent families could also be categorised as either nuclear or extended. Therefore, that category was merged within the two for further analysis.

In a binary logistic regression, when all significant demographic and family structure variables were entered in the model, depressed patients compared to the non-depressed, tended to be parents (OR of 2.08; 95% CI: 1.00-4.30, p = 0.049) and separated/divorced or widowed at the time of this study (OR of 1.89; 95% CI: 1.02-3.48, p = 0.043). On the other hand, earning a regular income protected against depression (OR of 0.46; 95% CI: 0.25-0.84, p = 0.011).

Physical Problems Presented By Patients at PHC Centres

Depressed patients never differed in any significant way from the non-depressed in terms of physical health complaints that took them to health centres as shown on Table 3.

Table 3. Health Problems Presented By Patients At Health Centres

Health Problem	Type of Patient		Total
	Depressed (n = 85) *n (%)*	Non-Depressed (n = 170) *n (%)*	(n = 255) *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	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

According to the clinical notes of health workers that saw patients at health centres, the majority of patients (45.6%) had malaria fever.

Life Events

A number of life events from the IRLE did not apply to any respondent. Only each of the following 18 life event items applied to 10 or more respondents: doing a vital exam, facing moderate financial difficulties, facing major financial difficulties, experience of a major physical illness, major illness of a family member, birth of a live child, death of a close friend, death of a close family member, death of a child, death of a spouse, loss or robbery of a valuable object, new person coming into the household, funeral rites, festivities (parties, dedication, baptism etc), special days like Christmas, Idd and Easter, increased arguments with a spouse, poor crop harvests and sudden sexual difficulty. These events were, therefore, subjected to a principal component factor analysis.

Seven conceptually meaningful components with Eigenvalues above 1 emerged accounting for 55.9% of the variance as shown in Table 4.

Table 4. Principal components from an adapted version of Interview for Recent Life Events (IRLE) [Factor loadings in parenthesis]

Principal components of life events						
1	**2**	**3**	**4**	**5**	**6**	**7**
Exciting Events	**Saddening Events**	**Loss-related**	**Worry-related**	**Bereavement**	**Financial events**	**Sexual Problems**
Celebrations / parties (0.7)	Death of a close family Member (0.7)	Financial difficulties (0.6)	Take a vital exam (0.5)	Death of a child (0.7)	Major financial improvement (0.8)	Sexual health problems (0.9)
Special days e.g. Christmas (0.7)	Poor harvests due to bad weather (0.7)	Major physical illness (0.6)	Death of a friend (0.8)	Funeral rites (0.7)		
		Loss of valuable object (0.6)				
Eigenvalue 2.54	Eigenvalue 1.44	Eigenvalue 1.38	Eigenvalue 1.34	Eigenvalue 1.19	Eigenvalue 1.13	Eigenvalue 1.05
% variance 14.12	% variance 8.01	% variance 7.65	% variance 7.44	% variance 6.62	% variance 6.26	% variance 5.83

Component 1 was about positive excitement-evoking life events, loading heavily on partying and celebration of special days like Christmas and Easter or Idd festivities. Component 2 was made up of saddening life events loading heavily on death of a close family member (parents, sibling or spouse) and poor crop harvests. Component 3 was made up of loss-related life events, while component 4 was on life events that evoke worries, with the heaviest loading on death of a close friend or a significant relative like a favourite aunt or a fiancée. Component 5 was made up of two bereavement-related life events, each loading at 0.7. Components 6 and 7 are vital life events though poorly defined with 1 item in each. Sexual health problems in component 7 that were mentioned included; itchy genital areas, suspicion of syphilis, HIV/AIDS and other sexually transmitted diseases, inability to perform sexual intercourse, painful sores on genitals, missed menstruation periods, infertility, miscarriages, premature ejaculation, painful urination and painful sexual experiences.

Depressed patients did not differ significantly from controls in terms of experiencing life events that were exciting, worrisome and major financial improvements as shown in Table 5.

Table 5. A Comparison of Life Events Experienced By Cases And Controls

Life events	Type of Patient		p-value	OR (95% CI)
	Depressed (n = 85) *n (%)*	Non-depressed (n = 170) *n (%)*		
Exciting life events				
Yes	27(31.8)	67(39.4)	0.233	0.72 (0.41-1.24)
No	58(68.2)	103(60.6)		
Saddening Events				
Yes	48 (56.5)	63(37.1)	0.003**	2.20 (1.29-3.74)
No	37(43.5)	107(62.9)		
Loss Events				
Yes	46(54.1)	71(41.8)	0.062	1.62 (0.97-2.78)
No	39(45.9)	99(58.2)		
Worry evoking events				
Yes	18(21.2)	32(18.8)	0.656	1.16 (0.61-2.21)
No	67(78.8)	138(81.2)		
Bereavement/grief events				
Yes	29(34.1)	34(20.0)	0.014*	2.07 (1.15-3.72)
No	56(65.9)	136(80.0)		
Major financial improvements				
Yes	4(4.7)	9(5.3)	0.840	0.88 (0.26-2.96)
No	81(95.3)	161(94.7)		
Sexual health problems				
Yes	12(14.1)	6(3.5)	0.002**	4.49(1.62-12.44)
No	73(85.9)	164(96.5)		

*$p \leq 0.05$ **$p \leq 0.01$ (Pearson's chi-square).

As shown in Table 5, depressed patients differed significantly from non-depressed patients in reporting experiencing saddening life events [Crude OR=2.20 (95% CI: 1.29-3.74), p=0.003], bereavement events [Crude OR=2.07 (95% CI: 1.15-3.72) p=0.014], and sexual health problems [Crude OR=4.49 (95% CI: 1.62-12.44), p=0.002]. Depressed patients tended to have more loss events [Crude OR=1.62 (95% CI: 0.61-2.21), p=0.062].

Relationship of Life Event Components to Significant Demographic Characteristics

Table 6 presents an analysis of life event components as related to significant demographic characteristics. Patients that experienced saddening life events and were parents had a higher proportion having a current MDE (58.9% versus 41.8%, $\chi^2 = 4.69$, Crude OR 1.99: 95% CI = 1.11-3.59, p =0.030). Similarly, depressed patients that were parents and experienced bereavement events (37% versus 21.3%, $\chi^2 = 4.91$, Crude OR 2.17: 95% CI = 1.14-4.12, p = 0.027) or sexual health problems (16.4% versus 4%, $\chi^2 = 7.26$, Crude OR 4.60: 95% CI = 1.55-13.67, p = 0.007) had a higher likelihood of having a current MDE.

Table 6. Analysis of Life Event Components by Significant Demographic Characteristics

		Type of Patient				
Demographic Characteristic	**Life Event Components**	**Depressed (n = 85)**	**Not depressed (n = 170)**	**χ^2**	***p* value**	**Crude OR (95%CI)**
		n =73 (%)	***n = 122 (%)***			
Being a parent (with own children) (n = 195)	Exciting events	22 (30.1)	47 (38.5)	1.06	0.303	0.69 (0.37-1.28)
	Saddening events	43 (58.9)	51 (41.8)	4.69	**0.030***	1.99 (1.11-3.59)
	Loss Events	38 (52.1)	51 (41.8)	1.54	0.214	1.51 (0.84-2.71)
	Worry events	14 (19.2)	20 (16.4)	0.09	0.763	1.21 (0.57-2.57)
	Bereavement events	27 (37.0)	26 (21.3)	4.91	**0.027***	2.17 (1.14-4.12)
	Financial Improvements	4 (5.5)	7 (5.7)	0.00	1.000	0.95 (0.27-3.37)
	Sexual problems	12 (16.4)	5 (4.1)	7.26	**0.007***	4.60 (1.55-13.67)
		n =28 (%)	***n = 83 (%)***			
Having post-primary education by training (n = 111)	Exciting events	10 (35.7)	36 (43.4)	0.24	0.624	0.73 (0.29-1.76)
	Saddening events	14 (50.0)	21 (25.3)	4.83	**0.028***	2.95 (1.21-7.19)
	Loss Events	18 (64.3)	40 (48.2)	1.58	0.209	1.94 (0.79-4.69)
	Worry events	9 (32.1)	15 (18.1)	1.69	0.194	2.15 (0.81-5.67)
	Bereavement events	6 (21.4)	13 (15.7)	0.17	0.682	1.47 (0.49-4.32)
	Financial Improvements	2 (7.1)	6 (7.2)	0.00	1.000	0.99 (0.19-5.19)
	Sexual problems	4 (14.3)	3 (3.6)	3.43	0.119	4.44 (0.93-21.25)
		n =20 (%)	***n = 66 (%)***			
Being a regular income earner (n = 86)	Exciting events	8 (40.0)	30 (45.5)	0.03	0.862	0.80 (0.29-2.21)
	Saddening events	7 (35.0)	21 (31.8)	0.00	1.000	1.15 (0.40-2.31)
	Loss Events	11 (55.0)	34 (51.5)	0.00	0.986	1.15 (0.42-3.14)
	Worry events	7 (35.0)	6 (9.1)	6.14	**0.013***	5.39 (1.55-18.69)
	Bereavement events	5 (25.0)	15 (22.7)	0.00	1.000	1.13 (0.35-3.63)
	Financial Improvements	0 (0.0)	7 (10.6)	1.11	0.292	1.34 (1.18-1.52)
	Sexual problems	2 (20.0)	2 (3.0)	4.45	**0.035***	8.00 (1.34-47.61)
		n =12 (%)	***n = 45 (%)***			
Never married (still single) (n = 57)	Exciting events	7 (58.3)	20 (44.4)	0.28	0.596	1.75 (0.45-6.35)
	Saddening events	6 (50.0)	13 (28.9)	1.07	0.301	2.47 (0.67-9.05)
	Loss Events	8 (66.7)	18 (40.0)	1.75	0.186	3.00 (0.79-11.46)
	Worry events	4 (33.3)	11 (24.4)	0.06	0.801	1.55 (0.39-6.14)
	Bereavement events	3 (25.0)	5 (11.1)	0.58	0.445	2.67 (0.54-13.26)
	Financial Improvements	1 (8.3)	2 (4.4)	0.00	1.000	1.96 (0.16-23.58)
	Sexual problems	0 (0.0)	0 (0.0)	-	-	-
		n =30 (%)	***n = 34 (%)***			
Once married but now separated (n = 64)	Exciting events	9 (30.0)	11 (32.4)	0.00	1.000	0.80 (0.31-2.59)
	Saddening events	15 (50.0)	17 (50.0)	0.00	1.000	1.00 (0.38-2.67)
	Loss Events	13 (43.3)	16 (47.1)	0.00	0.962	0.86 (0.32-2.31)
	Worry events	5 (16.7)	6 (17.6)	0.00	1.000	0.93 (0.25-3.44)
	Bereavement events	13 (43.3)	10 (26.4)	0.81	0.370	1.84 (0.65-5.15)
	Financial Improvements	2 (6.7)	1 (2.9)	0.01	0.912	2.36 (0.20-27.39)
	Sexual problems	1 (3.3)	-	0.00	0.950	2.17 (1.66-2.84)

* Significant at P≤0.05

Patients that had no post-primary educational attainment and had experienced saddening life events had a higher likelihood of having a current MDE (50% versus 25.3%, $\chi^2 = 4.83$, Crude OR 2.95: 95% CI = 1.21-7.19, p = 0.028). Patients that had regular incomes and experienced

worrisome events (35% versus 9.1%, $\chi^2 = 6.14$, Crude OR 5.39: 95% CI = 1.55-18.69, p = 0.013) or sexual health problems (20% versus 3%, $\chi^2 = 4.45$, Crude OR 0.035: 95% CI = 8.00 (1.34-47.61), p = 0.035) were more likely to have a current MDE.

Stratified Analysis

We did a stratified analysis to show the relationship of family structure (extended family and nuclear family strata) to life event-components as predictor variables. The outcome variable was depression. Table 7 below shows the results.

Table 7. Stratified Analysis Of Life Events And Type of Patient In Relation To Family Structure

		Family Structure							
		Extended Family (n = 107)				Nuclear Family (n = 148)			
Life Event Components	**Type of Patient**	Depressed *(n%)*	Not Depressed *(n%)*	*p*-value	Crude Ors (95%CI)	Depressed *(n%)*	Not Depressed *(n%)*	*p*-value	Crude Ors (95%CI)
Exciting events									
	Yes	7(20.6)	31(42.5)	**0.047***	0.35 (0.14-0.91)	20(39.2)	36(37.1)	0.942	1.09 (0.55-2.19)
	No	27(79.4)	42(57.5)			31(60.8)	61(62.9)		
Saddening events									
	Yes	25(73.5)	28(38.4)	**0.001***	4.46 (1.82-10.94)	23(45.1)	35(36.1)	0.373	1.4 (0.73-2.90)
	No	9(26.5)	45(61.6)			28(54.9)	62(63.9)		
Loss events									
	Yes	17(50.0)	32(43.8)	0.551	1.28 (0.57-2.89)	29(56.9)	39(40.2)	0.079	1.9 (0.99-3.89)
	No	17(50.0)	41(56.2)			22(43.1)	58(59.8)		
Worry-provoking events									
	Yes	8(23.5)	13(17.8)	0.665	1.42 (0.53-3.84)	10(19.6)	19(19.6)	1.000	1.00 (0.43-2.35)
	No	26(76.5)	60(82.2)			41(80.4)	78(80.4)		
Bereavement events									
	Yes	13(38.2)	11(15.1)	**0.015***	3.49 (1.36-8.96)	16(31.4)	23(23.7)	0.418	1.47 (0.69-3.13)
	No	21(61.8)	62(84.9)			35(68.6)	74(76.3)		
Major financial improvements									
	Yes	1(2.9)	3(4.1)	1.000	0.71 (0.07-7.06)	3(5.9)	6(6.2)	1.000	0.95 (0.23-3.96)
	No	33(97.1)	70(95.9)			48(94.1)	91(93.8)		
Sudden sexual difficulties/problems									
	Yes	2(5.9)	2(2.7)	0.802	2.22 (0.29-16.46)	10(19.6)	1(4.1)	**0.006***	5.67 (1.68-19.14)
	No	32(94.1)	71(97.3)			41(80.4)	93(95.9)		

* Significant at p≤0.05

Fewer depressed patients (7, 20.6%) from extended families compared to non-depressed patients (31, 42.5%) experienced exciting life events [OR of 0.35 (95% CI: 0.14-0.91); p = 0.047]. Secondly, non-depressed patients (28, 38.4%), compared to depressed patients from extended families (25, 73.5%) reported more saddening life events [OR of 4.46 (95% CI: 1.82-10.94); p = 0.001]. There were no significant differences between the two patient groups from either extended or nuclear families in reporting loss-related, worrisome and finance-related life events. However, compared to

the non-depressed group (11, 15.1%), the depressed group, (13, 38.2%) from extended families reported more bereavement-related life events [OR of 3.49 (95% CI: 1.36-8.96); p = 0.015]. Lastly, compared to the non-depressed group (4, 4.1%), the depressed (10, 19.6%) from nuclear families reported more sexual health problems [OR of 5.68 (95% CI: 1.68-19.14); p = 0.006], implying a possibility that the interaction of belonging to a nuclear family and having a sexual health problem was a risk factor for depression.

We also tested for effect modification between exposure to life events and family structure by analysing whether ORs differed significantly (at $p < 0.05$) by either extended or nuclear family stratum, which would be an indication of interaction. The null hypothesis (H_0) for interaction testing was that ORs never differed by stratum. Table 7 shows crude ORs and p-values for differences between different life events' variables and type of patient (depressed and not depressed) across strata of extended and nuclear families.

There was significant interaction between life events that were saddening, bereavement-related and sexual health problems and family structure. Such variables were taken as interaction terms in the multivariate logistic regression.

Multivariate Analysis

This was to assess the association between different covariates and depression. Sex, primary school attainment, post primary education, having never married (single), being separated/divorced or widowed, regularity of income , nuclear family, extended family, parenthood, ($p \leq 0.10$ in bivariate analysis), components of life events and interaction terms were entered in the in the logistic regression. Table 8 shows the results of the regression analysis.

Table 8. Risk Factors For A MDE Derived By A Binary Logistic Regression

Risk factors	B	S.E.	Wald	Sig.	Exp(B)	95.0% C.I. for EXP(B)
Once married but separated/divorced/widowed	0.878	0.329	7.128	0.008	2.41	(1.26-4.59)
Loss-related life events	0.781	0.313	6.219	0.013	2.19	(1.18-4.04)
Sexual health problems /difficulties	1.937	0.564	11.820	0.001	6.94	(2.30-20.95)
Extended family by saddening events*	1.105	0.499	4.912	0.027	3.02	(1.14-8.02)
Bereavement events by extended family*	1.231	0.558	4.870	0.027	3.43	(1.15-10.23)
Regular income earner	-0.808	0.330	6.002	0.014	0.45	(0.23-0.85)
Extended family	-0.861	0.454	3.590	0.058	0.42	(0.17-1.03)
Primary school	0.365	0.303	1.452	0.228	1.44	(0.79-2.61)

Notes
*Interaction between variables
Exp(B) is the equivalent of an Odds Ratio, CI = Confidence Interval
LL = 278.558
Number of Observations = 255
Omnibus Test of Model Coefficients [$\chi^2 = 46.064$, df = 8, $p < 0.001$]
Percentage of depression predicted by the risk factors = 36.5%
Cox & Snell $R^2 = 0.165$; Negelkerke $R^2 = 0.230$

As indicated in Table 8, the final step in the model revealed that being separated/divorced or widowed, experiencing saddening life events in an extended family context, loss-related life events, bereavement-related life events in an extended family context and sexual health problems significantly predicted presence of a current MDE. Loss-related life events were not significant

predictors of a current MDE in stratified analysis but after entering them alongside other covariates, they became important. A protective factor against depression was being a regular income earner.

DISCUSSION We set out to compare depressed and non-depressed patients seen at PHC centres in Uganda in terms of their demographics, family structure and life events as related to major depressive illness. Categorizing people into different family structures is an often debated and controversial issue in research. Part of the confusion arises from varying and diverse attempts to define a 'family', which is often dictated by the purpose of the definition. In this study, a family was taken as two or more persons related by blood, marriage, or adoption, and living in the same residence (Fields et al., 2001).

At the design of data collection tools and during fieldwork, we took the view that the modern family has undergone significant structural transformations giving rise to single parent families, polygamous families, divorced/separated/widowed families, blended families, fragile families, child-headed families, childless families and other family configurations, and quasi-family units based on non-marital cohabitation, sometimes called 'visiting unions' (Case et al., 2001; Macionis, 2001; Mclanahan & Sandefeur, 1994; Mincy & Oliver, 2003; Mukiza-Gapere & Ntozi, 1995b; Nam, 2004). Some of these categories captured very few respondents and they were reduced into the two main categories of extended and nuclear families. A nuclear family was taken to refer to a household consisting of a parent or parents (father and mother) and their children (siblings) while an extended family was taken to as parents and their children but also to embrace the grandparents, aunts, uncles, cousins, and sometimes more distant relatives staying in the same homestead

Past research had found that most people's risk for illness is best understood within a family context (Bor et al., 1993). Our findings are in keeping with this general observation and give a picture of how the difference in family structure within central Uganda's current cultural context interacts with life events to predict current MDEs among patients as seen at PHC centres. Our findings also show that non-depressed patients from extended families tended to encounter more positive and exciting life events, though the difference just fell short of statistical significance. Among the Ganda where this study took place, exciting events included partying and celebration of special days, notably religious festivities (Christmas, Easter and Idd), marriages and child naming ceremonies and other social activities shared by the wider extended family and friends. These provided an opportunity for merry-making and happiness, attributes likely to relieve stress and promote mental well being and support for the individual. Modern life, with its associated tendency to break up families negates this positive attribute to family life.

According to past studies, family members in the African extended family setting, whether related by birth, adoption, marriage or declared commitment shared deep and personal connections and were mutually entitled to receive, and in turn obligated to provide support of various kinds to other family members, especially in times of need (Ankrah, 1993). Our study showed that depressed patients from extended families significantly encountered more negative life events related to loss, bereavement and sadness. In a logistic regression, 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 predicted depression among patients from extended families. The African extended family was traditionally supposed to be a shock absorber against adversity and an economic refuge that provided both social support and socialization of new members (Kayongo-Male & Onyango, 1984). However, in this study, it was not able to protect those at risk individuals from developing depression.

The main gist of our findings is that the extended family has become weak and is now unable to cushion life event shocks. This is consistent with a view that modern pressures of economic stress, urbanization, and education, Christianity and neo-colonial cultural influences have weakened the African extended family (Kawachi & Berkman, 2001). While the expectation would be to find less depression in spite of existing negative life events among patients from extended families, our study shows a different scenario. This was especially more true in our study area, with enclaves of urban patterns of living. A few people have to support many members of their extended families. The extended family had become a heavy burden on a few people. The high costs of health care, education and housing in urban areas rendered the extended family in Uganda more burdensome. It was no wonder therefore that when confronted with negative life events, patients from extended families suffered from more depression.

Secondly, from the study, it looked plausible that the level of education was related to current MDEs at PHC level in Uganda. Non-depressed patients had significantly higher education with more respondents having had with post primary education compared to depressed patients. This however calls for more research. Similarly, our findings agree with a past finding from Zimbabwe about the relationship between income and depression (Broadhead et al., 2001). With a rising high cost of living in Uganda, patients with irregular incomes when confronted with negative life events are unable to cope and are likely to be more stressed and depressed as shown in this study.

Furthermore, the study showed the importance of children in most patients' lives. Having many children with little support was associated with depression. In Uganda, having many children is associated with high costs of education and healthcare. In fact, having more children for most people is economically burdensome. Failure to adequately provide for children's needs is associated with worries, helplessness, shame and betrayal. Such parents lack the much-needed support and are more distressed. Having no children (being single) was protective against depression since there were likely to be fewer stressors in their lives. Most people who are single are also younger in age and dependants on extended family members. Separated/divorced/widowed patients had significantly more depression probably because of the reduced social support mechanisms to buffer effects of the negative life events.

The finding that most depressed patients with sexual health problems came from nuclear families was not very surprising. The numbers of social ties within such a family are few. The implication of experiencing a sexually-related life event in such a setting is most likely an outcome of depression due to fewer people in whom one can confide, seek counsel or access resources to facilitate seeking help (Broadhead et al., 2001). This is in agreement with the observation that problematic social ties including smaller social networks, fewer close relationships and perceived inadequacy in social relationships are associated with symptoms of major depression (Kawachi & Berkman, 2001).

Study Limitations

The validity of case-control studies depends on accuracy in definition of cases versus controls and the extent to which the design and analysis controls for biases; namely selection biases, information biases, confounding and interaction (Breslow & Day, 1980). In this study, we made an attempt to give clear a definition of depression based on DSM IV criteria to minimise misclassification. The strength in the study was the use of face-to-face interviews with an instrument designed to follow that format in a context where most respondents were either semi-literate or illiterate. The act of asking respondents similar questions by research assistants who were unaware of the underlying study questions minimised information bias.

Retrospective measurement of life events using a semi-structured questionnaire is recommended to be better in obtaining reliable and valid data (Christensen et al., 2003). However, the inherent recall bias in such a design is well known. We required respondents to remember life events they had experienced up to six months before the interview. To manage the bias, we also used a reliable and well-developed instrument.

Some of the study instruments we used were developed in different cultures and are yet to be validated in Uganda's multi-cultural setting. However, a consistent approach including pre-testing for face validation was used to adapt them taking into account cultural differences. This included translation of all instruments into Luganda and blind back-translated to English in a way that ensured conceptual equivalence, cultural sensitivity, and validity. Trained Luganda speakers carried out interviews and ratings.

CONCLUSION In conclusion, some patients seen at PHC centres in Uganda were prone to have experienced negative life events. These patients were more likely to develop depression. The cushioning effect of their extended families against distresses associated with negative events like deaths, losses, separation, raising children, illness or famine appeared to be disappearing. These depressed patients from extended families reported more loss-related, bereavement-related and saddening life events. This has implications for family therapy interventions in modern Uganda and calls for more cultural studies of the current modern Ugandan family.
Our findings identified the weaknesses of the extended family in modern times as a buffer against stressors. In its absence, a support gap develops which needs to be addressed. This calls for training of more mental health workers and planning more support and therapeutic services in modern Uganda in particular and Africa in general. It calls for identification and training of informal helpers (traditional healers, village elders, teachers, community health workers, and faith healers (the clergy) to augment both the few mental health workers available and the disappearing extended family networks in managing depression in the community. Research from Uganda has suggested that informal helpers can be trained to be effective counsellors in a shorter period of one week (Kabura et al., 2005).

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