

Depression & Anxiety Among Women in Northern Kenya: Sociodemographic Predictors

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This article documents socio-demographic predictors of anxiety and depression among Maasai women in resource poor settings in Northern Kenya. These findings emerged from the findings of a dissertation research that aimed to establish the treatment effectiveness of an eclectic model of psychoeducation (PE) in treating depressive and anxiety symptoms among the women. The study adopted a quasi-experimental research design which had an experimental group (EG) and control group (CG). The population for the study was 686 female members of Conservation Enterprise Groups (CEG) in Laikipia County, from which a sample of 200 were recruited for the study (EG, $n = 100$ and CG, $n = 100$), at 80% power and 30% effective size. The Beck's Depression Inventory (BDI) and Beck's Anxiety Inventory (BAI) tools were used to assess the symptoms of depression and anxiety, respectively. The PE was provided as an intervention treatment to the EG at the middle and end of the study, after which the respondents were tested for symptoms of depression. The study established the prevalence of depression as 26.7% and 31.3% for anxiety and disorders, among women in the region. Data was analyzed using SPSS Version 21.0.

Keywords: sociodemographic, anxiety, depression, predictors, Maasai women, Northern Kenya

Background & Introduction to the Study

Studies conducted in Kenya showed that the prevalence of common mental health disorders in resource poor settings is 10.8% (Jenkins et al., 2012). Anxiety and depressive disorders are prevalent in Kenya. Global data indicates that, since the COVID-19 pandemic, it is estimated that the prevalence for both disorders was significantly higher for women than they were for men. Further the prevalence of depression increased by 29.8% for women compared to 24% for men, while the prevalence for anxiety increased by 27.9% for women compared to 21.7% for men (Santomauro, Mantilla Herrera, Shadid, & Zheng, 2021).

A study conducted in primary health care settings to estimate the prevalence of common mental disorders established that major depression is a common mental health disorder with a prevalence of 26.3% while anxiety disorders had a prevalence of 31.3% (Allion et al., 2014). In South Africa, a study indicated lifetime prevalence for any mental disorder as 30.3% (Herman et al., 2009). This study established the prevalence of depressive and anxiety disorders among women in Northern Kenya as 26.7% (Mwangi, 2018) and 31.3% (Mwangi & Mwayo, 2020) respectively. These findings on the prevalence of moderate depression being (14%) for experimental group (EG) and for (26.7%) control group (CG) are like those established by another study done among groups in Kenya by Muriugi and Ndeti (2013) and Aillon et al. (2014), as well as by Kessler, Chiu, and Demler (2005) in the USA, respectively. Other recent studies have indicated that the prevalence of anxiety and depression is higher

among women and particularly after the COVID-19 pandemic (Wang, Kala, & Jafar, 2020).

Description of Socio-demographic Data

Socio-demographic data collected for the study included data on age, education level, marital status, polygamous marriage, whether the respondents had children and the number of children, hospital visits, and employment status. The study categorized respondents into the three age brackets, to enable collection and analysis of continuous data and so that regression analysis could be done in relation to the dependent variables (anxiety and depression) for the study. The descriptive analysis showed similarities in the age, marital status, and proportion of mothers (Mwangi, 2016).

Table 1

Socio-demographic Data

	Baseline			
	n = 107		n = 101	
	EG		CG	
Age category	n	%	n	%
18-31 years	54	50.5	47	46.5
32-45 years	32	29.9	30	29.7
46 years & above	21	19.6	24	23.8
Education level				
None	62	57.9	85	84.2
Primary school	31	29.0	11	10.9
Post primary education	14	13.1	5	5
Marital status				
Single	22	20.6	7	6.9
Married	58	54.2	81	80.2
Separated/divorced	18	16.8	4	4.0
Widowed	9	8.4	9	8.9
In polygamous marriage				
Yes	28	26.1	29	28.7
No	79	73.8	72	71.3
Has children				
Yes	105	98.1	95	94.1
No	2	1.9	6	5.9
Employment status				
Yes	33	30.8	20	19.8
No	74	69.2	81	80.2

Table 1 shows socio-demographic characteristics of respondents in the EG and CG. Chi square tests were conducted at baseline to establish variations in the two groups at a 95% confidence interval ($p = 0.05$). The study established that there were no significant variations in the demographic factors for the EG and CG sites.

Correlation Between Socio-demographic Factors Associated With Anxiety at Baseline

Chi square tests were conducted to establish the relationship's strength between the socio-demographic characteristics significantly associated with anxiety. A 95% confidence interval ($p = 0.05$) was adopted for the tests.

The study established that anxiety was significantly associated with age (p -value = 0.004), level of education

(p-value = 0.000), marital status (p-value = 0.049), and employment status (p-value = 0.021) for both the respondents in the EG and CG. This indicates that the predictors for mild and moderate anxiety are younger women between ages 18-31 years (46.7%), women who have no education (55.6%), women who are married (65.9%), and women who are unemployed (57%). These findings show that in Laikipia County, younger women are more likely to suffer from mild and moderate anxiety probably because of the pressures and demands of marriage and care giving responsibilities required of them. Further, lack of education limits the opportunities that these women must fulfill their expectations.

Table 2

Correlation Between Socio-demographic Factors and Anxiety (N = 198)

Variable	Minimal anxiety		Mild anxiety		Moderate anxiety		χ^2 value	df	p-value
	n	%	n	%	n	%			
Age category									
18-31 years	4	1.9	33	15.9	64	30.8	9.807	6	0.029
32-45 years	0	0	19	9.1	43	20.7			
46 years and above	0	0	11	5.3	34	16.4			
Education level									
None	33	16.7	56	28.3	54	27.3	19.648	6	0.000
Primary school	13	6.6	20	10.1	4	2.0			
Post primary education	10	5	7	3.5	1	0.5			
Marital status									
Single	1	0.5	6	2.9	22	10.6	6.642	6	0.297
Married	2	1.0	48	23.1	89	42.8			
Separated/divorced	1	0.5	3	1.4	18	8.7			
Widowed	0	0.0	6	2.9	12	5.8			
In polygamous marriage									
Yes	15	7.6	18	9.1	22	11.1	6.934	4	0.070
No	41	20.7	65	32.8	37	18.7			
Has children									
Yes	52	26.3	81	40.9	57	28.8	2.024 ^a	2	0.316
No	4	2.0	2	1.0	2	1.0			
Employment status									
Yes	21	10.6	18	9.1	11	5.6	6.374 ^a	1	0.021
No	35	17.7	65	32.8	48	24.2			
Number of hospital visits per month									
None	32	16.2	50	25.3	38	19.2	4.743 ^a	4	0.376
Once	14	7.1	15	7.6	12	6.1			
Twice	7	3.5	12	6.1	5	2.5			
More than twice	3	1.5	6	3	4	2			

Socio-demographic Predictors for Anxiety

Analysis of Variance (ANOVA) tests conducted established that strength of significance of the association between socio-demographic factors and anxiety as $p = 0.028$ ($< p = 0.05$). This shows that the model was statistically significant in predicting the influence of age, education level, and employment status on anxiety, at 5% level of significance ($F_c = 2.782 < F \text{ value} = 3.042$).

Table 3

ANOVA Tests for Socio-demographic Factors Associated With Anxiety

Model		Sum of squares	df	Mean square	F	p-value
1	Regression	12.211	3	4.070	3.042	0.028
	Residual	801.424	599	1.338		
	Total	813.635	602			

Predictors of Anxiety—Coefficients of Determination

The regression equation in Table 4 below established that anxiety increases with age, indicating that older women were more likely to have anxiety. However, the study indicated that women with higher education levels or who were earning an income had lower incidences of anxiety. These findings echo similar findings conducted in Ecuador that showed that women who are older and who have low levels of education and income have higher prevalence of anxiety (Wang, Kala, & Jafar, 2020). Narrative sessions from the Focus Group Discussion (FGDs) indicated a different socio-cultural perspective. Women said that if a girl were too educated, men did not want to marry her, because they perceived an educated woman as too independent and would not submit to a man's authority.

Table 4

Coefficients of Determination for Socio-demographic Factors Influencing Anxiety

Model		Unstandardized coefficients		Standardized coefficients	t	p-value
		B	Std. error	Beta		
1	(Constant)	2.379	0.253		9.386	0.000
	Age	0.041	0.052	0.033	0.796	0.426
	Education level	-0.172	0.065	-0.110	-2.660	0.008
	Employment status	-0.040	0.109	-0.015	-0.364	0.716

Socio-demographic Factors Associated With Depression at Baseline

Chi square tests were conducted to establish the strength of the relationship between the socio-demographic characteristics that were significantly associated with depression at a 95% confidence interval ($p = 0.05$).

For respondents in both the EG and CG ($n = 198$), the study established that depression was significantly associated with women with lower or no education levels ($p\text{-value} = 0.033$). This finding corroborates the findings of a recently concluded study in Cote D'Ivoire showed that depressive symptoms reduced with higher income and education levels (Kumar, Bertoli, Lichand, & Wolf, 2023). Further, depression was also significantly associated with marital status ($p\text{-value} = 0.004$) indicating that women who are married (27.9%) are more likely to have depressive symptoms.

A study conducted in Pakistan by Zainab, Fatmi, and Kazi (2012) also associated low levels of education with depression. Further findings of this study showed that depression was found more among married women ($p\text{-value} = 0.004$), which supports evidence from another study conducted in Canada, which showed that high rates of depression are evident among women who are living with their spouses (Danesh & Landeen, 2007). Again, the reason given for this in the narrative was domestic violence from spouses. This finding is like another study conducted by Lorrant et al. (2003) in the USA, which also indicated gender-based violence as a cause for depression among married women.

Table 5

Correlation Between Socio-demographic Factors and Depression (N = 198)

Variable	Minimal depression		Mild depression		Moderate depression		χ^2 value	df	p-value
	n	%	n	%	n	%			
Age category									
18-31 years	66	31.7	16	7.7	18	8.7	10.526	9	0.227
32-45 years	30	14.4	19	9.1	13	6.3			
46 years and above	24	11.5	10	4.8	11	5.3			
Education level									
None	101	51.0	19	9.6	23	11.6	8.709	6	0.033
Primary school	33	16.7	2	1.0	2	1.0			
Post primary education	16	8.1	0	0	2	1			
Marital status									
Single	20	9.6	4	1.9	5	2.4	9.711	9	0.441
Married	80	38.5	32	15.4	26	12.5			
Separated/divorced	13	6.3	6	2.9	3	1.4			
Widowed	7	3.4	3	1.4	8	3.8			
In polygamous marriage									
Yes	42	21.2	5	2.5	8	4.0	0.527	2	0.784
No	108	54.5	16	8.1	19	9.6			
Has children									
Yes	144	72.7	20	10.1	26	13.1	0.037	2	0.988
No	6	3.0	1	0.5	1	0.5			
Employment status									
Yes	41	20.7	3	1.5	6	3.0	1.813	2	0.367
No	109	55.1	18	9.1	21	10.6			
Number of hospital visits per month									
None	88	44.4	14	7.1	18	9.1	12.618	8	0.167
Once	36	18.2	2	1.0	3	1.5			
Twice	19	9.6	3	1.5	2	1.0			
More than twice	7	3.5	2	1	4	2			

Socio-demographic Predictors of Depression

ANOVA tests performed to establish the strength of significance for the association between socio-demographic factors and depression indicated $p = 0.021$ ($p < 0.05$). This shows that the model was statistically significant in predicting the influence of age, education level, and employment status on depression, at 5% level of significance ($F_c = 2.782 < F \text{ value} = 5.324$).

The model was found to be statistically significance in predicting the influence of education level on depression $p = 0.021$ ($p < 0.05$). The F critical at 5% level of significance $F_c = 2.782$, since F calculated is greater than the F critical value ($F = 5.324$), shows that the overall model was significant.

Table 6

ANOVA Tests and Depression.

Model		Sum of squares	df	Mean square	F	p-value
2	Regression	3.656	1	3.656	5.324	0.021 ^b
	Residual	413.343	602	0.687		
	Total	416.998	603			

Socio-demographic Predictors of Depression—Coefficients of Determination

Table 7 below on coefficients of determination indicates that, in Laikipia County depression rates are significantly lower among women who are more educated $p = 0.021$ value (< 0.05).

Table 7

Coefficients of Determination for Depression

Model		Unstandardized coefficients		Standardized coefficients	t	p-value
		B	Std. error	Beta		
2	(Constant)	1.649	0.072		22.886	0.000
	Education level	-0.105	0.045	-0.094	-2.307	0.021

Qualitative Data Findings

Narrative discussions from FGDs indicated that that substance abuse and sexual and gender-based violence (SGBV) were rampant in their community, which according to them were associated with anxiety and depression among women (Mwangi & Mbwayo, 2020; Mwangi, 2017). They also cited harsh environmental factors such as annual drought seasons as a major cause of anxiety and depression. During these seasons there is scarcity of water resources and women and children had to travel long distances to find water and many lost their lives. Anticipated drought seasons led to depressive and anxiety symptoms (Mwangi, 2022). However, women also cited some socio-cultural practices such as having co-wives (polygamy) and many children as positively mitigating depressive and anxiety symptoms (Mwangi, 2017).

Conclusion

The study found that depressive symptoms are prevalent among the Maasai women in resource poor settings in Laikipia. This creates a need to integrate mental health services in primary healthcare settings. There is need for these services to be linked to resource poor settings to address depression among women. The study also established a high prevalence of comorbid symptoms of depression and anxiety, which worsen if untreated, leading to an incremental worsening on Quality of Life (QoL). The study also established weak but significant negative relationships between depression and QoL. Further to this, the study established that the psycho-education treatment intervention significantly reduced anxiety and depressive symptoms (separately and in their comorbidity).

The study established that there are other socio-cultural factors such as being in a polygamous relationship, having more children, reduced human-wildlife conflict, and reduced gender-based violence, which were cited by the women as critical determinants of depressive symptoms, as well as QoL. The study also found that the psycho-education treatments (first and second interventions) reduced symptoms of depression amongst the women in EG, leading to significant improvements in their overall QoL.

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