

The Impact of Psycho-education on Women with Anxiety Disorders in Resource Poor Settings in Laikipia County, Northern Kenya

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Abstract-This research determined if the eclectic psycho-education model developed for this study was effective in treating the symptoms of anxiety disorders among Maasai women living in resource poor settings in Laikipia County in Northern Kenya. The Quasi-experimental research design was employed for this study. The target population for this study were 484 female members of Conservation Enterprise Groups (CEG) operating in Laikipia North. A sample size of 200, each for the experimental group (EG) and control group (CG) was selected at 80% power and 30% effective size. The tool used to test for symptoms of anxiety was the Beck's Anxiety Inventory (BAI). Data was analysed using SPSS Version 21.0. The prevalence of anxiety was established as 79.4% amongst the women. Data from the control group (CG) showed that if these symptoms were not treated using the Psycho-education model developed for the study, they degenerated into severe symptoms. T-tests and Chi-square tests conducted at the end of the studies showed that the psycho-education treatment significantly improved anxiety symptoms ($P < 0.005$).

Keywords: Psycho-education treatment for anxiety disorders, among women in Laikipia County, Northern Kenya.

I. INTRODUCTION AND BACKGROUND

Globally, the prevalence of mental disorders is high, with reports of up to 30% in the general population (Kessler, Demler, & Frank, 2005). In Kenya, the prevalence of common mental health disorders in resource poor settings is 10.8% (Jenkins, Njenga, Okonji, Kigamwa, Baraza, Ayuyo, ... & Kiima, 2012). Previous research has shown that anxiety disorders have been linked with a number of adverse outcomes, including decreased work productivity (Kessler & Frank, 1997); impaired work, family, and social functioning, physical disability and even mortality (Brennes, Pennix, & Judd, 2007).

A study conducted in primary health care settings to estimate the prevalence, types and comorbidity of the most common mental disorders, established that anxiety is a common mental health disorder in Western Kenya (Allion, Ndeti, Khasakhala, Ngari, Achola, Akinyi, & Ribero, 2014). This study indicated a prevalence of 31.3% for anxiety and disorders (Allion et al., 2014), among adults in the region. This evidence points to the fact that common anxiety disorders are rampant in Kenya, which denotes the need for appropriate interventions to identify and treat anxiety

disorders while paying particular attention to those at risk of to identify and treat anxiety disorders while paying particular attention to those at risk of contracting the same.

Psycho-education could play a crucial role in rehabilitating, reinstating, and treating people with anxiety disorders, improving their overall well-being (Bartells, 2004). Psycho-education (PE) refers to the training offered to people with mental health conditions such as schizophrenia, depression, anxiety disorders, psychotic illnesses, eating disorders, and personality disorders, as well as in the context of the treatment of other physical illnesses that have an effect on mental health (Bartells, 2004). In this study, the same definition was used to define the eclectic model of psycho-education was developed and administered to women with anxiety and depressive symptoms.

Research has shown that most PE interventions are not based on psychological assessments and are not diagnosed in line with the previous DSM-4 criteria (Bartells, 2004). Further, they are and are mostly implemented based on assumptions of the symptoms that are observed (not tested) at initial presentation (Bartells, 2004). In this regard, it appears as though only a few of PE content that are implemented in resource poor settings meet the precise psychological needs of community because they are not preceded by proper screening or assessments of psychological issues among members of the community.

In the past there was a general belief that psycho-education interventions are ineffective and passive. However, a global meta-analysis of literature on psycho-education interventions showed that the ones for psychological distress (including anxiety) could significantly reduce their symptoms (Donker, Griffiths, Cuijpers, & Christensen, 2009). The authors further noted that the quality of psychoeducation is critical. However, it needs to be matched to the needs of individuals and groups in the community. Further psychological assessments need to form the basis of all PE programs.

This study aimed to investigate the effectiveness of an eclectic model of psycho-education (developed for this study) in treating anxiety symptoms amongst Maasai women living in resource poor settings in Laikipia County in Northern Kenya. The Beck's Anxiety Inventory (BAI) tool was used to test for

anxiety symptoms among the participants of the study. The PE treatment was provided to the participants in the EG (n=107) but was not provided to the CG (n=101), during the intervention.

However, due to ethical considerations, the intervention was provided to the CG after the data collection process was complete. Time series test conducted to assess the overall means of anxiety after the psycho-Education treatment indicated a significant reduction of anxiety symptoms in the EG.

Findings of this study could contribute to the mental health arena by providing a framework for assessing psychological disorders such as anxiety in resource poor settings in Kenya. Further, the minimum package for psycho-education developed for treating anxiety symptoms amongst women living in resource poor settings in Kenya could be replicated to other resource poor settings in the region and globally.

Further to this, the knowledge and evidence for treating anxiety disorders using psycho-education in resource poor settings that was generated by this study could be useful to policy makers and development practitioners, pursuing collection of indicators and data needed to inform SDG (3), which focuses on “ensuring healthy lives and promoting well-being for all...”. This study was also critical because it also provided evidence which would help to facilitate the integration of mental health into poverty intervention and development programs in future.

II. STUDY METHODS

The quasi-experimental research design was adopted for this study. The population for this study was 484 members of female CEG members in Laikipia North. A sample size of 200 for both the experimental (EG) and control group (CG) was selected at 80% power and 30% effective size. This sample size was determined by the formula below, which has been authenticated to produce reliable results in hypothesis testing, to ethically answer the research questions and derive a reliable conclusion (Chan, 2003).

A study conducted in Kenya showed that PE had a 30% effect on subjects with depression and a 29% effect on subjects with anxiety (Muriungi & Ndeti, 2013). In relation to this study, the PE intervention was anticipated to have a successful and clinical relevance of 30% (effect size) translating to 70% of the subjects participating in the study (Chan, 2003). In this regard, for a two-sided test of 5%, (significance) and a standard deviation of two units, the required sample size was determined by the following formula (Chan, 2003).

The Beck's Anxiety Inventory (BAI), which is a standardised tool was used to collect data for anxiety. The inclusion criteria for those selected to participate in the study included those who tested positive for mild to moderate scores for anxiety (10 to 29), as tested by the BAI. Those with minimal

and severe anxiety scores ($10 > x > 29$) were not eligible to participate in the study.

However, as part of the ethical requirement, the researcher referred all the respondents who presented with severe depression and anxiety symptoms to the Nanyuki Teaching and Referral Hospital for clinical treatment.

This inclusion and exclusion criteria was also used to identify participants for the control group as well and the ethical principle for those found with severe anxiety. A hundred and seven (107) female participants who met the criteria for minimal to moderate depressive and anxiety symptoms were recruited to participate in the treatment intervention for the experimental group (EG) and 101 women were recruited to participate in the control group (CG). These women either were active members of or were affiliated to CEGs.

The reason why more respondents were recruited to participate in the study beyond the specified sample size is because, after the announcement about the study was made, women turned up in large numbers because they felt that anxiety disorders were an issue for many of them. Further to this, some of the women had travelled long distances to participate in the study and the researcher felt obliged to include them in the study. The PE treatment was only administered to the EG. Data was analysed and significance tests conducted using SPSS Version 21.0 and presented in tables and graphs.

Findings of this study could contribute to the mental health arena by providing a framework for assessing psychological disorders such as anxiety in resource poor settings in Kenya. Further, the minimum package for psycho-education developed for treating anxiety symptoms amongst women living in resource poor settings in Kenya could be replicated to other resource poor settings in the region and globally.

A. Research Objective, Question and Hypothesis: One of the objectives of the study was to determine the effectiveness of psycho-education in improving anxiety disorders.

Other specific objectives related to this study were as follows:

-To establish the prevalence of anxiety disorders among women in the CEGs.

-To determine the effect of psycho education in treating anxiety disorders.

B. Research Question

Does psycho-education have the same impact on anxiety and depressive symptoms?

C. Null Hypothesis

Psychoeducation does not have the same impact on anxiety and depressive symptoms.

III. RESULTS

A. Prevalence of Mild Anxiety

The study established that 19.6% of individuals in the EG had mild anxiety compared to 41.6% in the CG, at baseline studies. After the first psycho-education intervention or treatment this figure increased to 39% in the EG. The prevalence also dropped to 33.7% in the CG. However, after the second and final psycho-education intervention, the prevalence in the EG substantively dropped to 1.9% in the EG and dropped to 24.8% in the CG.

The drop in prevalence in the CG after the first and second treatments was attributed to the fact that, anxiety symptoms among respondents in that group became worse and more of them tested positive for moderate or severe anxiety (See Table: 1.13). On the other hand the decrease in prevalence in the EG after the first psycho-education treatment could be attributed to increased awareness amongst group members that the symptoms associated with anxiety and depression were actually disorders and not a norm.

B. Prevalence of Moderate Anxiety Symptoms

At baseline, 79.4% respondents in the EG had moderate anxiety compared to 55.4% in the CG, however, the rate in the experimental group dropped to 2.9% after the first psycho-education treatment or intervention and to 0% after the second and final treatment. However, the prevalence for the CG rose to 60.4% at midline and slightly dropped to 57.4% at the endline data. The reason for the drop in prevalence could be due to more members of the group-testing positive for severe anxiety symptoms and hence lowering the prevalence there (See Table 1).

C. Prevalence of Severe Anxiety Symptoms

It is worthwhile to note that the number of respondents with severe symptoms in the CG was 5% at midline and this prevalence rose to 15.8% at endline studies. No case of severe anxiety was noted in the EG. This finding indicates that the psycho-education treatment reduced the prevalence of anxiety in the EG.

Table 1: Prevalence of Anxiety in EG and CG

	Baseline		Midline		Endline							
	N=107		N=101		N=105		N=105		N=105		N=101	
	EG		CG		EG		CG		EG		CG	
	n	%	n	%	n	%	n	%	n	%	n	%
Prevalence Mild Anxiety	21	19.6	42	41.6	41	39.0	34	33.7	2	1.9	25	24.8
Prevalence Moderate Anxiety	85	79.4	56	55.4	3	2.9	61	61	0	0	58	57.4
Prevalence of severe anxiety	0	0	0	0	0	0	5	5.0	0	0	16	15.8

Bi-variate analysis and time series tests conducted found that the overall mean scores for anxiety symptoms significantly reduced after the first and second psycho-education treatments or interventions. These findings were similar to those done by other scholars in Tanzania (Kaaya et al., 2013), countries in Sub-Saharan Africa (Wu & Li, 2013) and in Kenya (Muriungi & Ndeti, 2013), which found that psycho-education interventions significantly reduced symptoms of anxiety (P<0.05) and depression (P<0.05) among similar groups.

Table 2: Time Series Testing the Overall Means of Anxiety after Psycho-Education Treatment

	Baseline	Midline	Endline			
	EG	CG	EG	CG	EG	CG
Anxiety scores	2.79	2.52	1.48	2.69	1.02	3.07

D. Effects of Psycho-education on Anxiety Disorders.

T-tests and ANOVA tests conducted indicated that the psycho-education treatment led to a significant reduction in anxiety symptoms of women in the EG. These findings are similar to findings conducted by Kyobutungi et al. (2010) in Kenya, Xavier et al. (2010) in South Africa, Tara et al. (2009) in the USA, Dyck, et al. (2002) in Britain and (Muriungi & Ndeti, 2011) in Kenya, which indicated that psycho-education has a positive impact on improving anxiety symptoms.

Therefore based on this finding, the psycho-education treatment model adopted for this study was effective in treating the anxiety symptoms among women in the EG. This is in line with findings of another meta-analysis of psycho-education interventions, which showed that PE had a significant effect in reducing anxiety (Tara, Kathleen, Griffiths, Cuijpers, & Helen, 2009). However, these studies were conducted in educational or clinical settings whereas this study tested the effectiveness of an eclectic model of psycho-education in resource poor settings.

Table 3: T-test for Anxiety Symptoms after Psychoeducation Treatment /Intervention Two.

T-test for Equality of Means								
		t	df	P-Value	Mean Difference		Std. Error Difference	95% Confidence Interval of the Difference
					Upper	Lower		
Anxiety scores	Equal variances assumed	10.482	196	.000	2.049	.195	1.663	2.434
	Equal variances not assumed	10.695	101.153	.000	2.049	.192	1.669	2.429

To establish the impact of psycho-education intervention or treatment, data for baseline, midline and end line of both EG & CG were combined to achieve a continuous data in order to conduct independent sample T-test. The independent-samples t-test was used to compare the means between the experimental and control groups at each level of assessment, such as i) at baseline, ii) At treatment/ Intervention 1 (midline) and iii) At treatment/ Intervention 2 (endline).

Further, ANOVA tests were used to establish differences or otherwise of the CG and EG.

E. Independent Samples Test at Baseline

Findings of the Levene's Test for Equality of Variances indicated the following p-values: anxiety (P=0.000), which are all less than P= 0.05, which indicates that there is a

statistically significant difference in anxiety symptoms CG and EG at baseline (See Table 4 below). Further, T-tests to measure the equality of means, indicated P Values of (p=0.000), for anxiety symptoms, which indicates that there is a statistically significant difference in the means of anxiety symptoms in both EG and CG at baseline. (See Table 4 below).

Since there was no intervention at the baseline, the study concludes that there were no statistically significant differences in anxiety symptoms between in EG and CG at baseline. The differences between EG and CG means were more likely due to chance and not likely due to the differences in the characteristics between the two groups. In this regard, the study therefore performed t-test for Equality of Means; to test for further differences in the means of the EG and CG.

Table 4: Levene's and T-test at Baseline

Levene's Test for Equality of Variances				T-test for Equality of Means						
		F	P Value	t	df	P-Value	Mean Difference		Std. Error Difference	95% Confidence Interval of the Difference
							Upper	Lower		
Anxiety scores	Equal variances assumed	34.375	.000	-3.762	206	.000	-.260	.069	-.397	-.124
	Equal variances not assumed			-3.735	188.887	.000	-.260	.070	-.398	-.123

F. Independent Samples Test at Psycho-education Treatment/Intervention One (Midline).

At the midline study, tests indicated anxiety scores of (P< 0.05), which, made the study conclude that there was a statistically significant difference between the means of

anxiety scores for both the EG and CG after the first psycho-education treatments. This finding ascertains that psycho-education had an impact of effectively reducing anxiety symptoms of the women participating in the EG, after the first treatment or intervention (See Table 5).

Table 5: T-test after Psychoeducation Treatment/ Intervention One t-test for Equality of Means

t-test for Equality of Means								
		t	df	P-Value	Mean Difference		Std. Error Difference	95% Confidence Interval of the Difference
					Upper	Lower		
Anxiety scores	Equal variances assumed	14.910	196	.000	1.209	.081	1.049	1.368
	Equal variances not assumed	195.981	188.887	.000	1.209	.081	1.049	1.368

Independent Samples Test at Treatment/Intervention Two (Endline).

At the endline studies or psycho-education treatment intervention two, the P-values for anxiety symptoms were (P=0.000), which led the study concludes that there was a statistically significant difference between the overall means

of anxiety for the EG and CG after the second and final psycho-education treatment intervention.

This finding indicated that psycho-education significantly reduced anxiety symptoms of the women in the EG (See Table 6).

Table 6: T-test after Psychoeducation Treatment /Intervention Two T-test for Equality of Means

t-test for Equality of Means								
		t	df	P-Value	Mean Difference		Std. Error Difference	95% Confidence Interval of the Difference
					Upper	Lower		
Anxiety scores	Equal variances assumed	10.482	196	.000	2.049	.195	1.663	2.434
	Equal variances not assumed	10.695	101.153	.000	2.049	.192	1.669	2.429

G. ANOVA Tests for Control Group.

For the test of homogeneity of variances, anxiety scores were established at (P>0.05) which indicated that there was no statistically significant difference in anxiety symptoms for the CG across the three timelines of the study. This finding indicated that due to the absence of the psycho-education treatment in the CG, the anxiety symptoms became worse among the women in the same group.

Table 7: ANOVA Tests to Measure Depressive and Anxiety Symptoms in the Absence of the Psycho-Education Treatment for the Control Group

	Levene Statistic	df1	df2	P-Value
Anxiety scores	573	2	300	.564

H. ANOVA Scores for Experimental Group.

For the experimental group, ANOVA tests showed the following P- Values of (P=0.000) for anxiety symptoms.

This finding indicated that the psycho-education treatment led to a significant reduction of anxiety symptoms.

Table 8: ANOVA Tests to Measure Depressive and Anxiety symptoms after the Psycho-Education Treatment in the Experimental Group.

	Levene Statistic	df1	df2	P-Value
Anxiety scores	141.970	2	298	.000
Depression scores	260.901	2	298	.000
Quality of life scores	10.078	2	297	.000

IV. SUMMARY OF KEY FINDINGS

The study established that symptoms of anxiety are rampant among Maasai women in Northern During the narrative discussions conducted during the first and second psycho-education interventions, the women identified with and defined symptoms of anxiety as a condition they called in their local language as 'Uraureushio'. This made it possible for them to narrate how they experienced its symptoms and how it affected their livelihoods. The study established that other socio-cultural and environmental factors such as being in polygamous relationships influenced anxiety levels. This was specifically emphasized by the older women in the narrative sessions, implying that the older women in the Masaai community view polygamy as a positive cultural practice, which helped to reduce anxiety levels.

V. CONCLUSIONS

The study established that the PE treatment that was provided during the intervention, significantly reduced anxiety symptoms amongst the women in EG. Further, the study established that other socio-cultural factors such as being in a polygamous relationship, having more children, reduced human-wildlife conflict and lack domestic violence, contributed to low anxiety in women.

The study found that anxiety symptoms are prevalent among the Masaai women in resource poor settings in Laikipia, which creates a need to integrate mental health services in primary healthcare settings and to further link them to resource poor settings. This would help to address anxiety among women living in resource poor settings.

VI. RECOMMENDATIONS

There few studies which exist on psycho-education programs that address the mental health needs of women including young women with anxiety symptoms in resource poor settings. In this regard the study therefore recommended that global and regional organizations, as well as academic institutions could in future adopt and improve on the psycho-education model that was used in this study, to improve mental health outcomes of women (and especially younger ones), in resource poor settings to improve their socio-economic and political livelihoods.

Due to the high prevalence of anxiety symptoms among young women in resource poor settings in Laikipia, the study recommended that international and national strategies on mental health need to integrate psychological measures to help assess mental health issues amongst women living in resource poor settings. This would help to effectively administer appropriate cost effective treatment methods and psychoeducation interventions. However, to ensure support within the homes, it is critical to involve the women's spouses to enhance the women's social, economic and political decision-making and bargaining power in their (women's) homes.

VII. RECOMMENDATIONS FOR FURTHER RESEARCH

This study recommended the following for further research:

The study recognized the need to further investigate other socio-economic and cultural factors that could cause anxiety disorders among women in resource poor settings. Further, there is need for further research on traditional and cultural approaches for treating anxiety, which could be integrated in PE interventions in resource poor settings. Such Research in these could also help to mitigate and prevent incidences and the spread of anxiety.

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