The Efficacy of Cognitive Behavioural Therapy on Depression Among Family Caregivers of End Stage Kidney Disease Patients in Nairobi County, Kenya

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Abstract

The incidence of depression is high among family caregivers (FCGs) of End Stage Kidney Disease (ESKD). Little has been done to find a model of therapy that will alleviate its symptoms in this population. This study aimed at testing a model of Cognitive Behavioural Therapy that would assist FCGs. With a diagnosis of ESKD the lifestyle of the patient's family is drastically complicated and is surrounded by the demands of dialysis, the FCG undergoes a lot of stressors, referred to as the caregiver burden. According to the Kenya Renal Association, chronic kidney disease, which results in ESKD is on the rise with one million Kenyans already having the disease. This is said to be increasing with ten thousand new cases per year. Among other things, this implies a corresponding increase in caregivers' burden and specifically depression. Thus, studies have called for effective psychological interventions as available interventions have mainly constituted education on renal disease and very little on psychotherapeutic treatments for the FCGs. This study therefore tested a model of psychotherapy referred to as Cognitive Behavioural Therapy (CBT) specifically on depression in this population. It used a convenience sample of 96 participants in various private hospitals in Nairobi. The sample was divided into experimental (n=49) and control groups (n=47). A quasi-experiment was done to determine the efficacy of CBT in reducing the symptoms of depression in the participants by applying the treatment to the experimental group. Data was analysed using inferential statistics. The results revealed that FCGs had moderate depression, among other mental disorders. CBT was found to be effective in reducing the symptoms of depression from moderate to mild and normal. Hence, CBT was recommended as part of the treatment protocols for ESKD.

Key Words: ESKD, depression, efficacy, family caregivers, CBT

Introduction and background

End Stage Renal Disease (ESKD) is a debilitating disease and a major global problem (Bayoumi et al., 2013). It is the terminal stage of kidney disease, a progression from Chronic

Kidney Disease (CKD) whose prognosis is like that of cancer (Eneanya et al., 2015). CKD is usually an irreversible and progressive disease and if left untreated, could lead to (and in most cases, will progress to ESKD) (Wong et al., 2014). It signifies that the kidneys have stopped working and there is need for dialysis to help the body purify itself of toxins (Finnegan-John & Thomas, 2013). Without this blood purification process, life cannot continue and eventually the person will die (Akala, 2011).

To know whether the kidney is functioning well, a measure called the Glomerulus Filtration Rate (GFR) is used. When it is low, it predicts cardiovascular disease, ESKD or death (Clase, 2006). This is when the GFR rate is less than 15, which translates to kidney function of just 5%. At this level of kidney dysfunction, an artificial method referred to as dialysis to clear the nitrogenous waste must be used.

Once the diagnosis of ESKD is made, drastic lifestyle changes are introduced in the patient's family. The renal diet is introduced with its attendant restrictions and risk of malnutrition (Chuung, Koh, Shin, & Park, 2012). Ideally, dialysis should be undertaken three times a week and there is an array of tests and medications that the patient must undertake regularly. There is stricter monitoring of blood pressure and diabetes, which are the leading causes of kidney disease (Kausz & Levey, 2002). Much of life now is lived around dialysis days and intense adjustments in the family to accommodate all these changes. Treatment is usually multi-disciplinary, and it includes a team containing, among others, nephrologists, nutritionists, cardiologists, endocrinologists, the family and counsellors (Levy, Chambers, & Brown, 2004). This study focused on the family.

With time, the patient becomes more and more dependent on one or two family members who become primarily responsible for his or her care. This person is referred to in this study as the FCG. It has been established that giving care to a chronically ill family member, ESKD included, can have negative effects on the caregivers' life (Feinberg, Reinherd, Houser, & Choula, 2011). The FCG is negatively affected in terms of finances, retirement, career, physical and emotional health, and social networks. Usually, the patient with ESKD has a comorbidity of mental and physical disorders making the impact particularly severe on the FCGs. This has been found to predispose them to development of mental disorders (Auer, 2002; Belassco & Sesso, 2002; Belasco, Barbosa, Bettencourt, Diccini, & Sesso, 2006).

Consequently, they present with difficulties such as depression, anxiety-related symptoms and a commodity-you meant comorbidity? of these two. This study confined itself to depression as it has been specifically studied among FCGs of ESKD-sentence not clear. Studies have found that this population is prone to depression whose severity ranges from moderate to extremely severe (Shakya, Tuladhar, & Poudel, 2017; Waiyaki, Khasakhala, & Oladipo, 2017, Elmadi et al., 2011; Saeed et al., 2012).

Caregiving literature refers to FCGs as the “hidden patients” (Kristjanson, 2004) or as "secondary patients" (Reinherd, Given, Petlick, & Bremis, 2008). Like any other terminal illness, from diagnosis to the process of treatment, the family experiences financial and lifestyle changes. It is also the family that withstands the worst of the illness as it seeks to facilitate, accommodate and effect requisite changes (Auer, 2002). Certainly, most of the patient's life is spent at home under the care of (most probably) a family member who is unpaid for the diverse roles he or she plays. These roles are burdensome and have traditionally not been addressed during the patient's treatment.

FCGs can be identified as the individuals who during the patient’s treatment are most closely involved in caring for the patients and helping them cope with and manage their chronic illness. Auer (2002) pointed out that the renal medical team takes great care of the patient after diagnosis. This is however not true for the caregivers whom the medical team lends little support, whether psychologically or otherwise. This support to FCGs is crucial because there are complex medical tasks that FCGs undertake. They often feel unprepared to provide care, have inadequate knowledge to deliver proper care, and receive little guidance from the formal health care providers (Scherbring, 2002). The literature refers to this complicated role as the caregiver burden which is eminently being felt in Kenya given that there are 1 million Kenyans with kidney disease (Kenya Renal Association, 2015). The situation is bound to get worse with an estimated ten thousand new cases of ESKD yearly (Kenyatta National Hospital, 2016).

Due to their inadequate knowledge and skill in medical procedures, FCGs may be unfamiliar with the type of care they must provide or the amount of care needed. For instance, they are tasked with observing their patients for early signs of problems such as medication side effects, and high or low blood pressure. These are serious responsibilities and FCGs are often

unable to interpret their patients' symptoms, including the ability to discern emergency situations. With the scanty help from health care professionals in managing these tasks and the emotional demands of caregiving, the FCGs often neglect their own health care needs, which may cause deterioration in their health and well-being (Gayomali, 2008). This is one factor that could lead to depression among them (Ndanyi, 2013).

Despite this reality, little has been done by way of testing interventions that are effective in alleviating depression among FCGs. Calls for a working model of therapy for the study population have been variously made (Belassco & Sesso, 2002; DiMatteo, Lepper, & Croghan, 2000). CBT is well established as the first line of treatment for depression (Tolin, 2010). As a treatment, it was discovered from the experiments of Aron Beck in the early 1960s when he noticed that depressed people had exaggerated negative self-evaluations and beliefs based on distortions and errors in the patient's interpretation of experiences and events. He realised that when he helped the patient correct these distortions in about 10-12 sessions, the depression would lift.

Cognitive therapy is thus aimed at identifying thoughts; attitudes and assumptions that create exacerbate or maintain depression. Some of these thinking patterns may be obvious and conscious whilst others may be unconscious. However, they are easily elicited and identifiable with the correct interviewing techniques; particularly Socratic questioning which CBT applies routinely (Cully & Teten, 2008). Once identified, these maladaptive thoughts are assessed or challenged by asking whether they follow logical reasoning, whether they are based on any objective evidence and whether they are helpful or self-defeating and anxiety-provoking. They are then ultimately replaced by healthier, more evidence-based, logical cognitions or way of thinking. The healthier thinking styles are then practiced repeatedly and with different methods that enable people to develop a stronger level of conviction for the healthier ways of thinking (Adeusi, 2013; Clark, 2014; Hoffmann et al., 2012).

In this study, diagnosis of ESKD and the attendant lifestyle changes activated the schemas of the FCGs. As a result, the FCGs gave these experiences of caregiving a negative and distorted interpretation which, unfortunately, was the caregivers' new reality. FCGs who were depressed, for instance, might have taken it as a personal failure when the patient got frequent illnesses, yet that is a regular feature of ESKD. Others might have felt crushed when

the patients did not adhere to certain requirements such as exercising, yet the patients were personally responsible.

Since Beck's discovery, numerous researches have been done to establish the efficacy of CBT not only for depression but also for other mental disorders. Moreover, according to Beck and colleagues, the above-said findings were that CBT was somewhat superior to anti-depressants in the treatment of adult depression (Beck, Steer, & Brown, 1998). In addition, CBT was equally effective as behaviour therapy in the treatment of adult depression and obsessive-compulsive disorder. It has also been found to be significantly effective as a group therapy. In a study in which longitudinal data was taken from 2003 to 2013 for all patients treated with group CBT, the mean depression score dropped from 28.5 to 18.5, a drop of 10 BDI points (Thimm & Antonsen, 2014). The post-treatment score remained stable after three months of follow-up according to these scholars. At post-treatment, 44% of the patients showed a significant improvement in depression, including 30% who recovered; at follow-up, the proportions increased to 57% and 40%, respectively. However, CBT is not indicated for severe depression and thus its exclusion from this study (Driessen & Hollon, 2011).

That notwithstanding, the researcher did not find a study that had applied the modality to the population of this study. By testing the efficacy of CBT in symptom reduction of depression among FCGs of patients with ESKD, this study hoped to establish an empirically-proved intervention that would be used in the future to assist different stakeholders in the renal arena and thus fill the gap in this field. In addition, the results of this study would also contribute to the knowledge base essential for the practice of psychotherapy.

Methodology

Ethical approval was obtained from the Nairobi Hospital Ethics Board. The Government of Kenya gave approval through the National Council for Science, Technology and Innovation (NACOSTI). This study was a quasi-experimental design which is the most used experimental design in social sciences particularly where the aim, as was in this study, is to assess the outcome of an intervention (Mugenda, 2008).

Study participants were interviewed to join the study from four dialysis units, all in the private sector in the County city of Nairobi. Following the baseline recruitment, a total of 96

participants were enrolled in the study using convenience sampling. Only family members of the patient who had mild and moderate depression were included in the study. Selection of the sample in this study was challenging in that there was no sampling frame from which to calculate the sample size. The only indication of the numbers of the population of FCGs was that they were pegged to the available patients. The formula that was used to calculate the minimum required sample size is known as the Lameshow model (Lameshow, Hosmer, Klar, & Lwanga, 1990). All the particpants entered the study upon attaining the inclusion criteria.

A researcher-generated questionnaire capturing the socio-demographic data of the FCGs and patients was used. The data included age, gender, marital status, cost of dialysis per week, who paid for dialysis, and challenges with costs of treatment; in addition, data on educational level, religion, and occupation of the FCGs and patients was included. The Hospital Anxiety and Depression Scale, a 14- item tool was used to screen participants; those who scored 8 and above were included in the study. The Beck's Depression Inventory (BDI) was used to measure depression. For over 35 years, this instrument has been used to measure depression all over the world (Farinde, 2013; Saeed et al., 2012; Wang & Gaonstein, 2013). It is used to identify and assess depressive symptoms and their severity with reported high reliability regardless of the population (Beck, Epstein, Steer, & Brown, 2014). This means that it was relevant for the Kenyan participants in this study. Scores ranging from 0 to 9 represent minimal depressive symptoms, scores of 10 to 16 indicate mild depression, scores of 17 to 29 indicate moderate depression, and scores of 30 to 63 indicate severe depression. This study excluded those with minimal and severe depression. In Kenya, the BDI has been widely used in research and has been found to have sound psychometric properties (Muriungi & Ndetei, 2013). Its Swahili version was used in a study to determine the risk of depression in caregivers of children with intellectual disability at the Gachie Catholic Parish, Archdiocese of Nairobi, by Mbugua, Kuria, and Ndetei in 2011.

Upon inclusion, the sample was randomly divided into the experimental and control groups. It was the experimental group that received the intervention. The group was further divided into 12 groups which went through therapy sessions in a structure created by Group Therapy Manual for Cognitive Behavioural Treatment of Depression (Munoz & Miranda, 2000) and A Therapist's Guide to Brief Cognitive Behavioural Therapy (Cully & Teten, 2008). The sample was assessed for depression at baseline (upon inclusion), midline (after application of

the intervention) and at endline (three months after the intervention). The endline measure sought to affirm whether CBT was efficacious three months post treatment.

Data was analyzed using various tools. Descriptive methods such as mean, standard deviation (SD), 95% confidence interval of mean, minimum and maximum were used to summarize continuous variables while categorical variables were summarized using frequencies and proportions. Inferential statistics, namely T-test and one-way analysis of variance (ANOVA) were used to test for mean differences in Beck Depression Inventory (BDI) score within and in-between the experimental and control groups.

Results

A total of 96 participant FCGs were enrolled in to the study. Table 1 presents the socio-demographic characteristics of the participants. The proportion of women was relatively high (56.3%), with a high number of participants aged 36–55 years (49.0%). Most of the participants were married (51.0%) while 33.3% were single. A relatively high proportion (68.8%) had attained tertiary education. The majority of the participants reported to be Christians (78.1%). Most, (68.8%) reported that they resided with the patients; a relatively high proportion (66.7%) indicated that the patients they were taking care of had been on treatment for at least 1 year. In addition, 71.9% of the participants were engaged in informal employment.

Table 1: Socio-Demographic Characteristics of the Participants (FCG)

Variables	n=96	%
Gender		
Male	42	43.8%
Female	54	56.3%
Age in years		
<36 years	29	30.2%
36 - 55 years	47	49.0%
>55 years	20	20.8%
Marital status		
Married	49	51.0%
Single	32	33.3%
Divorced/ Separated/ Co-habiting/ Widowed	15	15.6%
Education level		
Secondary and below	30	31.3%
Tertiary	66	68.8%

Religion		
Christianity	75	78.1%
Other	21	21.9%
Resides with patient		
Yes	66	68.8%
No	30	31.3%
Duration of treatment		
<1 year	32	33.3%
1 year and above	64	66.7%
other work done by the participant apart from taking care of the patient		
Employed	27	28.1%
Business	35	36.5%
Others	34	35.4%

Table 2 presents the distribution of the BDI results. Analysis of the BDI score revealed that overall, mean BDI score was 18.7 (± 6.5 SD) ranging between 3 and 32. This indicated that the FCGs had moderate depression which necessitated the study to find a model of therapy that would alleviate the symptoms.

Table 2: Distribution of BDI Scores

				95% CI				
Variables	n	Mean	SD	Lower	Upper	Median	Min.	Max.
Beck Depression Inventory (BDI)	96	18.7	6.5	17.4	20.1	19.0	3	32

Analysis of Severity of Depression

The analysis of severity of depression using BDI scores by study group at baseline was done as presented in Table 3. Moderate/severe depression score was seen in 33.3% of the sample

Table 3: Severity of Depression among FCGs by Study Group at Baseline

	Total (n=96)		Experimental (n=47)		Control (n=49)		χ^2		p
Variables	n	%	N	%	n	%	value	df	value
Beck Depression Inventory (BDI)									
Normal	7	7.3%	4	8.5%	3	6.1%	6.682	3	0.083
Mild	29	30.2%	16	34.0%	13	26.5%			
Borderline	28	29.2%	8	17.0%	20	40.8%			
Moderate	32	33.3%	19	40.4%	13	26.5%			

Efficacy of the Intervention on BDI Scores

Mean BDI Score between Groups at Baseline, Midline and Endline

Table 4 presents the analysis of mean BDI score between and within the study groups at baseline, midline, and endline. Between group comparison revealed that the mean BDI score at baseline was slightly high in the experimental (19.4±7.2) compared to the control (18.1±5.7) arms (p=0.297). The mean BDI score was significantly low in the experimental group (12.4±5.6) compared to the control (18.5±5.6) group at midline (p<0.001). Similarly, the mean BDI score was significantly low in the experimental group (10.5±5.2) compared to the control (17.5±6.3) group at endline (p<0.001).

Within group comparison results revealed that the mean BDI score in the experimental group was significantly high at baseline (19.4±7.2) compared to midline (12.4±5.6; p<0.001) and endline (10.5±5.2; p<0.001). However, in the control group, the mean BDI score at baseline (18.1±5.7) was comparable to midline (18.5±5.6; p=0.158) and endline (17.5±6.3; p=0.330).

The analysis of the mean of changes in the BDI scores between baseline and midline revealed that there were significant changes in the experimental group (7.0±7.2) compared to the control group (-0.4±2.2; p<0.001). Similarly, the mean of changes in the BDI scores between baseline and endline revealed that there were significant changes in the experimental group (8.9±7.2) compared to the control group (0.6±4.1; p<0.001).

The Table shows that reduction of depressive symptoms was noted at two main points in the study, at midline and endline. The results show that the bigger change occurred at midline, with a significant change of a mean by 7.0 BDI score points, and a standard deviation of 6.4. Ten weeks of no intervention produced a minimal insignificant change (1.9 BDI score points). Nevertheless, there was not a relapse or increase in the mean score, showing that the effects of the intervention were persistent beyond the intervention period.

Table 4: Mean BDI Score between Groups at Baseline, Midline, and Endline

	Experimental			Control			
Time point	n	Mean	SD	n	Mean	SD	p value
Baseline	47	19.4	7.2	49	18.1	5.7	0.297
Midline	47	12.4	5.6	49	18.5	5.6	<0.001

p value: Baseline vs. Midline		<0.001			0.158		
Endline	47	10.5	5.2	48	17.5	6.3	<0.001
p value: Baseline vs. Endline		<0.001			0.330		
Difference of Difference							
Baseline – Midline	47	7.0	7.2	49	-0.4	2.2	<0.001
Baseline – Endline	47	8.9	7.2	48	0.6	4.1	<0.001

Discussion

The objective of this research was to determine the efficacy of CBT in reduction depressive symptoms among FCGs of ESKD patients. The therapy was applied to the experimental group only. Assessment of symptom reduction was done after twelve group therapy sessions, ten weeks after the application of the therapy at midline and then again after another ten weeks at endline.

Symptom reduction of depressive symptoms in the experimental group was significantly different as compared to the control group. The BDI mean score decreased from 19.4 to 10.5 in the former, while in the latter the BDI score ended at 17.5. Thus, CBT proved to be effective in reducing these symptoms among FCGs of ESKD patients studied. The experiment involved training the FCGs to learn to identify, evaluate and modify maladaptive thoughts that led to their depressed and anxious symptoms (Adeusi, 2013; Clark, 2014; Hoffman et al., 2012).

These findings are comparable with studies done in the West (Butler at al., 2006; Hollon et al., 2005; Tolin, 2010) and particularly in group therapy (Thimm & Antonsen, 2014). In this latter study, the BDI score decreased from 28.5 at baseline to 18.5 at endline and therefore affirms this study. In Africa, the modality has been significantly associated with reduction of depression symptoms: in South Africa (Lena et al., 2016), in Ethiopia (Hassanzade, 2012) and in Kenya (Papas et al., 2011).

The model has been said to be efficacious beyond the treatment period and in relapse prevention (Hoffmann, 2012; Thimm & Antonsen, 2014). In this current study, 10 weeks beyond the intervention period, the FCGs had maintained their improved state. CBT was found similarly effective and calls made for it to be considered as the first line of treatment for depression (Hoffman, 2012;Tolin, 2010). This apparent universal efficacy of CBT

demonstrates the need to recognise the reality that FCGs are secondary patients, and consequently, they need assessment and treatment.

The CBT treatment was applied to 98% of the sample in the experimental group. The study therefore enjoyed an outstanding retention of participants. The reasons for this can be conjectured. In the first place, the participants had never received so much attention from the team taking care of their patients. They were pleased to be "noticed" and engaged in a therapeutic manner. Their interest was therefore piqued from the onset as they understood their mental states and how the intervention was aimed at helping them. Secondly, as they began to practise the techniques taught in therapy, they found the intervention useful in helping them cope with their caregiving burden and in symptom reduction. Thirdly, they benefitted from the group dynamics since in the group they shared how they were experiencing the therapy and how it was helping them. Finally, the therapy was administered near the dialysis room and this gave them the comfort of being near their patients. Hence, they could relax and concentrate during the group sessions. Of significance to them was that the counselling was free which did not add to their already difficult financial burden and this encouraged them to make the most of the opportunity.

Results from the control group were as expected. Since no intervention was applied, the mean scores for depression did not significantly change across the three timelines. The depressive symptoms indicated a slight and insignificant drop in mean scores. However, this negligible drop may be attributed to some action to alleviate their symptoms by some of the participants. They reportedly took up exercising and relaxation as a self-help measure once they became aware of their condition.

The results presented here should be interpreted in the light of several limitations. Firstly, the data used was collected in private hospitals and therefore more needs to be done to establish whether the same results can be obtained from public hospitals. In addition, the sample in the study was small due to the protectiveness over patients and FCGs by private hospitals. However, statistical methods were used to ensure the study was sound.

Conclusion

This study provided some insight into the burdened and complicated lives of FCGs of patients with renal failure. The role that is fit for a medical person had been taken on by lay people who have had to learn so many new skills to help keep their patients alive. The study filled the gap that scholars and practitioners had been calling for, that of an effective strategy to help this population cope with the consequences of their unavoidable role. Particularly since FCGs take care of their loved ones, they experience conflicting emotions of feeling responsible over their patients and at the same time finding the role burdensome. These conflicts may translate into symptoms of moderate depression. Coupled with this, according to cognitive theory, is the fact that FCGs may adopt a distorted view of reality in the context of having seriously sick loved ones that impose the demanding responsibilities of caregiving. Learning how to challenge these thoughts and replace them with adaptive ones however helped the caregivers develop a non-defeatist outlook and come substantively out of the gloom. At the end of the study, a significant reduction in the depression scores indicated an improvement from moderate to mild and normal, meaning FCGs have been significantly supported in their difficult situation.

References

Akala, N. (2011, March 9). *Afyakenya Foundation*. Retrieved from http://afyakenyafoundation.org/: http://afyakenyafoundation.org/2011/03/all-you-need-to-know-about-kidney-health/

Auer, J. (2002). Dialysis a family matter: A personal tribute to the relatives of kidney patients. *Journal of Renal Care, 28*(3), 141-144.

Bayoumi, M., Al Harbi, A., Al Suwaida, A., Al Ghonaim, M., Al Wakeel, J., & Mishkiry, A. (2013). Predictors of quality of life in hemodialysis patients. *Saudi Journal of Kidney Transplantation, 24*, 254-259.

Beck, A.T. (1967). *Depression: Clinical, experimental and theoretical aspects.* New York: Harper & Row.

Clase, C. (2006). Glomerular filtration rate: Screening cannot be recommended on the basis of current knowledge. *British Medical Journal, 333*, 1030-1031.

Beck, A.T., Epstein, N., Steer, R., & Brown, G. (1988). (2014, October 31). *MUSC.* Retrieved from Medical University of South Carolina: http://academicdepartments.musc.edu/family_medicine/rcmar/beck.htm

Belasco, A., Barbosa, D., Bettencourt, A., Diccini, S., & Sesso, R. (2006). Quality of life of family caregivers of elderly patients on hemodialysis and peritoneal dialysis. *American Journal of Kidney Diseases, 48*(6), 955-963.

Belassco, A., & Sesso, R. (2002). Burden and quality of life of caregivers for hemodialysis patients. *American Journal of Kidney Disease, 39*(4), 805-812.

Butler, A., Chapman, J., Forman, E., & Beck, A. (2006). The empirical status of cognitive behavioural therapy. *Clinical Psychology Review, 36*, 17-31.

Chuung, S., Koh, E., Shin, S., & Park, C. (2012). Malnutrition in patients with chronic kidney disease. *Open Journal of Internal Medicine, 2*, 88-89.

Clark, D. (2014). Cognitive restructuring. In S. G. Hoffman (Ed.), *The Wiley handbook of cognitive behavioral therapy* (pp. 23-45). Hoboken: John Wiley & Sons, Ltd.

Cully, J., & Teten, A. (2008). *A therapist's guide to brief cognitive behavioural therapy.* Houston: Department of Veterans Affairs South Central MIRECC.

Chuung, S., Koh, E., Shin, S., & Park, C. (2012). Malnutrition in patients with chronic kidney disease. *Open Journal of Internal Medicine, 2*, 88-89.

Kenyatta National Hospital. (2016, March 5). *Kidney health in Kenya*. Retrieved from Kenyatta National Hospital Website: https://cog.go.ke/index.php/best-practices/county-developments/62-best-practices/137-kidney-dialysis-statistics-from-kenyatta-national-hospital

Lena, S., Magidson, J., O'cleirigh, C. R., Kagee, A., Leaver, M., Stein, J., . . . Joska, J. (2016). A pilot study of a nurse-delivered cognitive behavioral therapy intervention (Ziphamandla) for adherence and depression in HIV in South Africa. *Journal of Health Psychology*, 1-6. doi:10.1177/1359105316643375

Shakya, D., Tuladhar, J., & Poudel, S. (2017). Burden and depression among caregivers of hemodialysis patients. *Palliative Med Care, 4*(1), 1-6.

Waiyaki, W., Khasakhala, L., & Oladipo, R. (2017). Factors associated with elevated depression in family caregivers of End Stage Kidney Disease patients in Nairobi County, Kenya. *African Journal of Clinical Psychology, 1*(1), 118-134.