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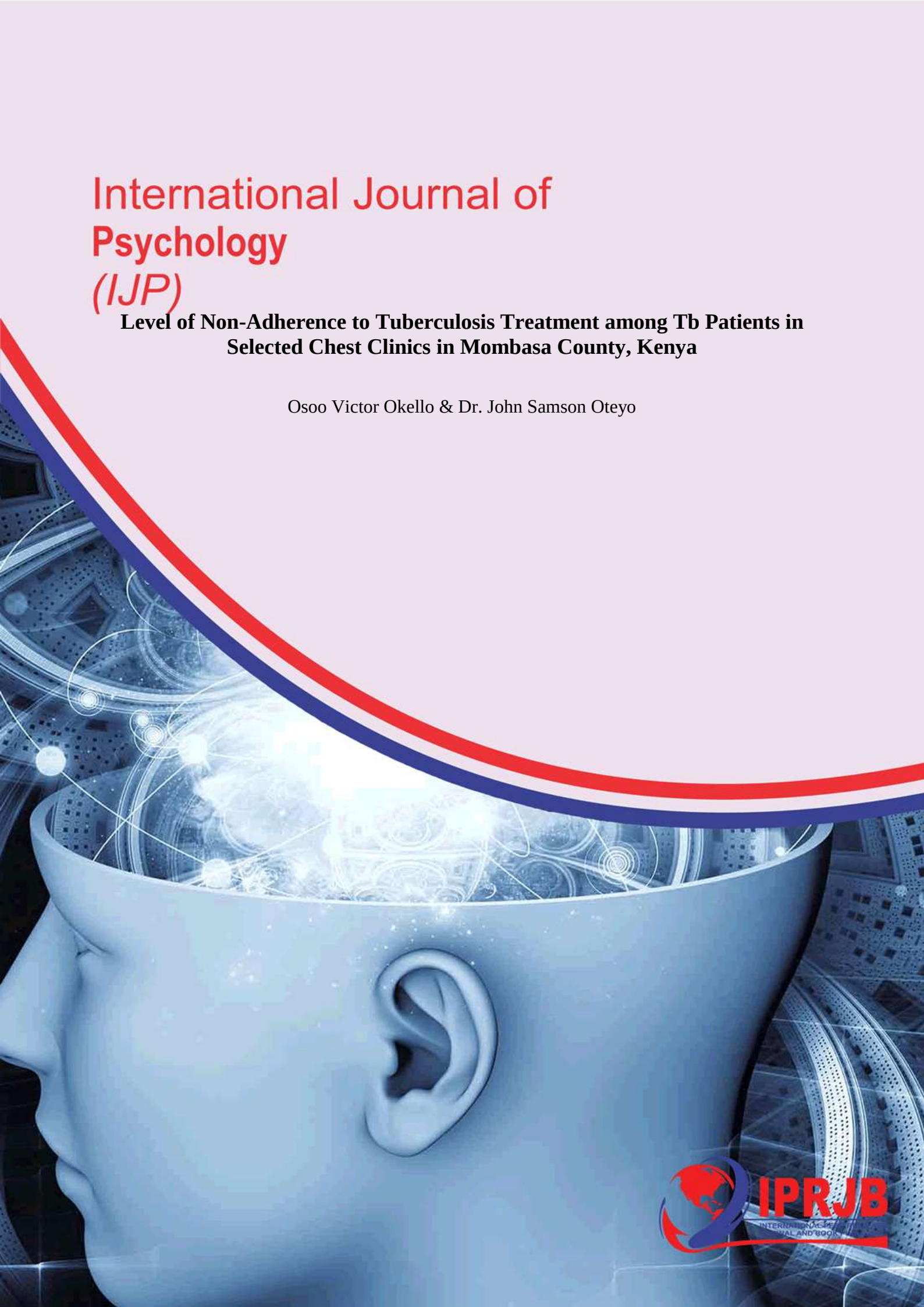

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Level of Non-Adherence to Tuberculosis Treatment among TB Patients in Selected Chest Clinics in Mombasa County, Kenya

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Abstract

Purpose: The aim of this study was to explore the levels of non- adherence to tuberculosis treatment among TB patients in selected chest clinics in Mombasa County, Kenya.

Methodology: The research adopted correlational design. The study was conducted in selected three chest clinics in Mombasa County. All tuberculosis patients diagnosed with active tuberculosis disease who are registered and collect their medicines from selected chest clinics in Mombasa County was the targeted population. Convenience sampling and simple random sampling was used. The sample size involved 200 TB patients. The research adopted questionnaire which consisted of both open ended and closed ended questions. The study adopted a questionnaire in collection of data. The questionnaire contained both open ended and close ended questionnaire. The researcher used descriptive statistics to help in organizing of data and it would also be helpful in summarizing of data for ease of making interpretations. Statistical Package for Social Science version 25 aided in data analysis. Frequency, percentages and moment was used in data analysis.

Findings: Data analysis from this study that was summed and transformed into categories revealed 83% of the respondent's experienced moderate non-adherence, 12.2% low non-adherence while 4.8% had high incidences of non-adherence.

Unique Contribution to Theory, Practice and Policy: Rational Emotive Theory may be used to anchor future studies relating to levels of non-adherence to TB treatment among TB patients. In this study, anxiety over the Tb diagnosis would be the activating agent, patient belief about treatment and treatment course and Non-adherence the consequence of the irrational belief. The study recommended that there is need for patients to be empowered with information on the importance of adherence to TB treatment to mitigate incidences of treatment failure and multidrug resistant tuberculosis through health education using health practitioners.

Keywords: *Tuberculosis, Level of Non-Adherence, TB patients, Selected Chest Clinics*

INTRODUCTION

Mycobacterium Tuberculosis is the leading cause of death globally and the fourth largest cause of mortality in Kenya (MOH, 2017). Non-adherence to treatment which refers to Tb patients not following treatment regimen as advised by their health provider has been listed as among the cause of poor treatment outcomes resulting to an increase in treatment failure, which results to development of resistant strains that are more expensive to manage, increased cost of treatment, increased prevalence, morbidity and mortality (WHO, 2016).The report noted that some of the reasons behind Non-adherence to therapy in general included drug related factors like number of tablets to be swallowed, the size and color of the tablets, health care factors like the attitude of the health personnel and distance of the chest clinic and patient related factors like anxiety and stress over fear of stigma, duration of therapy and cultural beliefs.

According to MOH (2017) Tb incidence and prevalence continues to increase gradually. Over ten million people got infected with Tb globally and 1.8 million mortality rates from Tb were recorded in 2016 (WHO, 2016). New infections were 28,500 reported daily with 4,600 mortalities and 11,100 missed cases. The National Tuberculosis Prevalence Survey of 2016 ranked Tb as the fourth leading cause of death in Kenya. According to MOH (2017) the prevalence rate was at 558/100,000, an increment from 233/100,000 in 2016 with high incidence among youths, urban dwellers and women above 65 years. Mombasa had the leading incidence rate at 535/100,000 followed by Nairobi 490/100,000, Homabay 426/100,000 with the North eastern counties of Wajir and Garissa having lowest incidence. It also showed that Mombasa County had a significant upsurge in cases of Multi-drug resistant tuberculosis. According to MOH (2017) new Tb infections stood at 5,000 in Mombasa County. The reported statistics formed the basis in choosing Mombasa as the study area with an aim of finding out the relationship between anxiety and Non-adherence to Tb therapy.

Non-adherence which refers to failure to follow treatment regimen as advised by a healthcare provider has been noted to be a leading cause of treatment failure in management of most long-term diseases. According to Kyngas (1999) an individual's clinical and psychosocial characteristics influenced non-adherence. Non-adherence can be classified into intentional and unintentional. He further suggested that some factors that promote Non-adherence included disease and treatment duration, scheduled follow-up, age, patient status, number of pills taken, cultural beliefs, fear of stigma, anxiety among others. Globally, Kosovo had a Non-adherence rate of 14.5% according to a cohort study of 324 respondents (WHO, 2015). In Nepal, an estimated 45% of the total population was infected with Tb of which 44,000 of the active Tb patients died yearly. Iran, India and Ethiopia had Non-adherence rates of 30%, 40.5% and 25% respectively. Fox (2015) stated that Non-adherence to tuberculosis treatment in developing countries stood at 60% hence the reason behind treatment failure. In Ethiopia the Non-adherence rate were at 25% with the side effects of the Tb medicines being the lead deterrent, distance from the treatment center and prolonged waiting time exacerbating the situation. Kenya was ranked position 13/22 with high Tb burden; an upsurge had been noted from the early 1990's (Kochi, 1991). The defaulter rates in Kenya were at 35% in the late nineties and Non-adherence resulted from patient related factors, service related and facility related. From the available literature, specific data on Non-adherence rate by region within Kenya could not be clearly distinguished hence the need to have an objective on the prevalence rate of Non-adherence to Tb therapy in Mombasa County, Kenya.

Obwoge, Sang & Wakube (2016) in their study on factors influencing Non-adherence to tuberculosis in Baringo County, Kenya discovered that the level of Non-adherence at intensive phase was 46% whereas during continuation phase Non-adherence was 54%. The sample population was 46 respondents, 72% being male while 28% were female. The study brought out aspects of social-economic influence to Tuberculosis management but it was not clear on the psychological influencers on Non-adherence to treatment. The study was also conducted in a sparsely populated environment in a semi-arid environment and relatively few respondents, the current study will be done in a coastal town, which is densely populated and the population will be close to tenfold.

A study on psychotic patients conducted in the US, noted that psychosocial support and monitoring of patient taking medication reduced Non-adherence (Kane, Kishimato & Cornell, 2013). According to the same study Non-adherence to chronic therapy stood at 50% globally with a cost of more than a quarter a trillion per annum in the US. Patient self-report, pill count and drug concentration in blood were some of the methods used to determine adherence and Non-adherence. It has also been observed that for hypertensive patients, Non-adherence is highest among newly diagnosed patients at 28.4% and hyperlipidemia at 28.2%. Diabetes mellitus still has the highest Non-adherence rate at 31.4%. Highest adherence has been noted to be in pediatric patients in medication intake than adults in a study conducted in the U.S by (Fisher, Mullan, Arean, Glasgow, Hessler &Masharani, 2010).

Tuberculosis has not been left behind in studies to determine adherence and Non-adherence. According to WHO (2015) Iran, India and Ethiopia had a non-adherent rate of 30%, 40.5% and 21% respectively. Fox (2015) stated that Non-adherence to anti-Tb medication in developing countries was the reason behind treatment failure. In Ethiopia the Non-adherence rate stood at 24.7% with side effects of the medication being the lead deterrent, distance from the treatment Centre and prolonged waiting time exacerbating the situation.

Non-adherence has been noted to be high in Mombasa thus increasing relapse rate, hospitalization and emergence of MDR-Tb. This study therefore seeks to find out the recent prevalence rate of Tb in Mombasa County as at 2019-2020 and a comparison might be necessary to establish whether there has been an increase or a decrease in Non-adherence within the year. The study will also compare the geographical and population size to Non-adherence and determine the level of Non-adherence of Mombasa County in comparison to the national Non-adherence levels in Kenya.

Statement of the Problem

It has been shown that non-adherence is prevalent in Mombasa, which contributes to an increase in the relapse rate, the number of hospitalizations, and the development of MDR-TB. In order to enhance the outcomes of TB therapy, it is necessary to have a better understanding of the factors that influence non-adherence to TB treatment. Research that were carried out in many regions of the world indicated a number of factors that are connected with non-adherence to anti-TB medication. These factors include factors related to health systems, patient characteristics, and socio-economic factors (Herrero et al., 2015). Because non-adherence to tuberculosis treatment is "an inescapable by-product of collisions between the clinical world and the other competing worlds of job, play, friendships, and family life," the factors that contribute to it can shift over the course of therapy.

Non-adherence to tuberculosis treatment is a problem worldwide and in Kenya, and this is one of the key reasons that the disease is still the leading cause of mortality among HIV/AIDS

patients worldwide and the country's fourth greatest cause of death overall (Obwoge *et al*., 2016). Non-adherence to treatment is blamed for a dramatic increase in tuberculosis cases in Mombasa, as reported by the 2017 Kenya National TB Survey. This paper therefore seeks to explore the levels of non-adherence to TB treatment among TB patients in Mombasa County.

Rational Emotive Theory

Rational Emotive theory by Albert Ellis would also be informative for it assumes that it is not an event that causes a discomfort but rather an individual's perception of that event (Velten, 2010). In this study, anxiety over the Tb diagnosis would be the activating agent, patient belief about treatment and treatment course and Non-adherence the consequence of the irrational belief. During the interview process it would be important to assess how the patient cognition affects their adherence levels and recommends measures necessary in helping the patient improve on adherence. Some clients also stop taking medicine after the first two weeks because they believe they are well because they have stopped experiencing the signs and symptoms of Tb (Ellis, 1962).

METHODOLOGY

The research adopted correlational design to establish the levels of non- adherence to TB treatment among TB patients in Mombasa County. The study was conducted in selected three chest clinics in Mombasa County. The target population involved all TB patients diagnosed with active TB disease who are registered and collect their medicines from selected chest clinics in Mombasa County. Convenience sampling was applied because only patients on TB treatment within the period of study were interviewed. Simple random sampling was used to select participants from each stratum to be involved in the study. The questionnaires consisted of both open ended and closed ended questions to collect data. Descriptive statistics was used in organizing and summarizing the data. Statistical Package for Social Science version 25 aided in data analysis. Frequency, percentages and moment was used in data analysis. Presentation of results was done using tables.

RESULTS

Level of Non-adherence to Tuberculosis Treatment among Tb Patients in Selected Chest Clinics in Mombasa County, Kenya

The study sought to establish levels of non-adherence to TB treatment among patients attending chest clinics in Mombasa County. Thompson medication adherence tool (Thomson, 2000) (items 8-17 in questionnaire) was adapted to measure non-adherence to the TB treatment. For questions 8, 14, 15, 16 and 17; a response NO (2) is indicative of non-adherence whereas YES (1) is indicative of adherence. For items 9-13 a response of YES (2) is indicative of non-adherence whereas NO (1) indicative of adherence. To achieve this objective all ten scores of items were summed up and then transformed to categories to indicate the levels of non-adherence. The highest score was 20 and lowest score was 10. Three levels were as follows: Low (10-13), Moderate (14-17) and high (18-20). From the Table 1, majority of participants were at moderate level of non-adherence (83%). Those who had high level of non-adherence were 4.8%.

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Table 1: Levels of Non-adherence to TB Medication

Levels of Non-adherence	Frequency	Percent
Low (10-13)	38	12.2
Moderate (14-17)	259	83
High (18-20)	15	4.8
Total	**312**	**100**

	Yes		No	
	Freq.	%	Freq.	%
Understand TB Treatment	284	91	28	9
Whether the Respondents forget to take TB Medication	103	33	209	67
Whether the Respondents have been careless Taking TB Medication	12	3.8	300	96.2
Whether feeling better sometimes make you not to take TB medication	24	7.7	288	92.3
Whether Respondents Stop Taking TB Medication when they feel better	9	2.9	303	97.1
Whether Respondents only take TB Medication when they feel worse.	3	1	309	99
Whether TB Medication alters the Body/Mind	310	99.4	2	16
Whether Respondents know the TB Medication they take	14	4.5	298	95.5
Whether Respondents know the outcome of not taking TB Medication	44	14.1	268	85.5
Whether the TB Medication gives you Drowsiness and Feel Weird	24	7.7	288	92.3

From responses on individual items, participants indicated lack of knowledge on TB medication they are taking (95.5%), outcome of not taking TB medication (85.5%) and side effects of TB medication (92.3%). Some participants indicated that forget to take TB medication (33%).

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

Data analysis from this study that was summed and transformed into categories revealed 83% of the respondent's experienced moderate non-adherence, 12.2% low non-adherence while 4.8% had high incidences of non-adherence. In the study by Tola (2017) they noted non-adherence rate to be 19.5 %. From their findings it was difficult to tell whether their respondents had mild, moderate of high non-adherence rate. Sahile *et al* (2018) noted a non-adherence rate of 20% in their study that aimed at finding out the impact DOT had on non-adherence in Ethiopia. Krasniqis (2017) noted non-adherence at 14.5%. From all the above studies it would be important to note that most of them did not cluster their level of non-adherence hence making it a bit difficult to compare these studies the current study. Krasniqis noted that low incidences of non-adherence had been reported in Tanzania at 5%, Uganda reported 8% while

Iran, Ethiopia and India had high non-adherence rate to tuberculosis treatment at 30%, 21% and 40% respectively. Cognizance to fact that Kenya falls in the category of the 16 countries with Tb burden and Mombasa being one of the Counties with high tuberculosis burden it would be of interest to appreciate that a mean of the categories would suggest that the non-adherence rate stood at 33%. Therefore the findings of current study are consistent and support the findings with past studies that there is non-adherence of TB treatment. Nonadherence to TB treatment contributes not only drug resistance but also increase disease morbidity and mortality that adversely affect the treatment success rate. Any level of non-adherence is health of concern that need to be addressed by identification of intervention points. Hence the rationale for the current study.

In Mombasa County chest clinics, the vast majority of TB patients exhibited some degree of non-adherence to TB therapy. In order to lessen the occurrences of treatment failure and multidrug-resistant tuberculosis, it would be important to lessen this difficulty. The tuberculosis burden, treatment costs, and time spent managing relapses and multidrug-resistant cases could all be reduced if non-adherence were less common.

Patients should be educated by health practitioners on the significance of TB medication adherence to reduce the occurrence of treatment failure and multidrug-resistant tuberculosis, as suggested by the study. TB patients need social support to seek and complete treatment, and the community needs to be educated about the disease to remove the mystery surrounding its diagnosis and care. The effectiveness of the treatment alliance and the promotion of adherence within can greatly benefit from the distribution and dissemination of information. In order to lower rates of non-adherence, treatment failure, MDR, and XDR Tb, regular and thorough client follow-up is essential. The patient should be closely monitored for adverse effects in order to reassure them for moderate adverse effects and provide necessary support if they experience severe adverse effects.

Conclusions

The study concluded that all TB patients indicated some level of non-adherence to TB treatment. Non adherence to TB treatment contributes not only drug resistance but also increase disease morbidity and mortality that adversely affect the treatment success rate. Any level of non-adherence is health of concern that need to be addressed by identification of intervention points.

Recommendations

The study recommends that there is need for patients to be empowered with information on the importance of adherence to TB treatment to mitigate incidences of treatment failure and multidrug resistant tuberculosis through health education using Tuberculosis ambassadors and Tb champions. There is need for community awareness to demystify diagnosis and treatment of TB and also promoting adherence to treatment thus reduce incidence of non-adherence, relapse and resistance. Information empowerment and dissemination is very integral in the success of the treatment alliance and in promoting adherence their by reducing non-adherence

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