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Domestic Violence and Chronic Malnutrition among Women in Tanzania 2016

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Abstract

Chronic malnutrition is one of the leading causes of death and illness among women in developing economies. These women also face challenges resulting from domestic violence. It is therefore, important to study the influence of domestic violence on womens' nutrition. Secondary data was collected on Tanzanian female population demographics for the year 2016. Some sample of 1564 women are obtained for the study. Univariate and multivariate logistic regression models are developed to determine the crude odds ratio and the adjusted odds ratio for the factors.

The study found that the prevalence for anemia was higher among women aged between 15 and 19 years. Marital status was not a significant factor for chronic malnutrition. Lack of education led to increased prevalence of chronic malnutrition. Wealth index and place of residence are not significant factors for chronic malnutrition. Less severe violence and severe violence are the only significant factors of domestic violence. It is important to evaluate the significant factors of chronic malnutrition. First it would be important to formulate policies that increase the literacy level. In addition, it would also be important for policy stakeholders to address the problems of chronic malnutrition that is facing young women aged between 15 and 19 years.

1. Introduction

The welfare and living standards of the society are determined by several factors. Most of these factors are socially, economically, culturally and politically motivated.

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Food and nutrition is one of the basic human needs. However, according to the UN Food and Agriculture organization (FAO), 795 million people were starving in the world between 2014 and 2016[1]. In this number, approximately 233 million people were from Sub-Saharan Africa while 512 million people were from Asia. Even though Asia has the largest population of starving people, Africa relative population of starving people is higher. This is because Africa has a relatively lower population size than Asia. When hunger and famine strike most regions, the most vulnerable proportion of the population are the children and women. The suffer most from the effects of the hunger and in most cases, die from the hunger [2]. In addition, women are susceptible to domestic abuse when they face these hunger challenges. In this study, we shall investigate the relationship between domestic violence and chronic malnutrition in Tanzania. Tanzania is an African country located on the east coast bordering the Indian Ocean. The country has a population of about 47.9 million people and land are of 945,087 square kilometers. The main religions in Tanzania are Christianity, Islam and other indigenous religions [3]. According to WHO (2011), Tanzania's life expectancy was 59 years in 2011. 77% of the population is literate [4]. The country has 6.8% child mortality rate. 16.2% of the country's children under 5 years are underweight.

The high level of poverty and poor nutrition in the country, women in Tanzania face domestic violence and abuse. This form of violence and abuse worsens the effects of hunger and poverty in the country. Chronic malnutrition is usually associated with high levels of poverty [5]. Extreme poverty in most areas deprives the people the power to purchase food items. When the people are unable to afford their nutritional requirements, they are likely to suffer from chronic malnutrition. Hence, eradication of extreme poverty may help in reducing chronic malnutrition in most areas. The other factor that contributes to chronic malnutrition is the lack of adequate investment in agriculture [6]. Tanzania has large arable land that is suitable for agriculture. However, a small proportion of the arable land is used for productive agriculture. This leads to low food production in the country. The low food production consequently results in famine and malnutrition. Climate and weather sometimes contribute to food shortage in the affected areas. Adverse weather and climatic conditions may result in poor agricultural yields. In some cases, the weather and climate may inhibit agricultural activities [7]. For example, the leading cause of food shortage in Tanzania is drought. Poor weather conditions resulting from hot and dry conditions results to crop failure and death of livestock.

This results in chronic malnutrition among the people. War and displacement of people also causes chronic malnutrition. For example, the massive emigration from Syria to the neighboring countries has led to increased incidences of chronic malnutrition. The people affected during war lose their livelihoods and income and hence do not have sufficient funds and resources to access daily nutritional requirements. This consequently lead to chronic malnutrition among those affected by war and displacement [8]. Finally, chronic malnutrition may be caused by general food shortage. Reduction of food and agricultural production may cause hunger and famine to the consumers. This may in turn lead to chronic malnutrition to the affected population. This is usually the case with food importing countries that rely on food produced from other countries. Domestic violence is a pattern of abuse that involves parties in a relationship usually a domestic or family setting. Domestic violence influences the social lives of the victims. In other times, domestic violence may adversely affect the health of the victims [9]. Also, domestic violence may adversely affect the social and economic aspects of the lives of the affected people. There are various forms of domestic violence. The first form of domestic violence is physical abuse.

This involves physical harm to one's body. The victim of physical abuse suffers body injuries, fear pain and other forms of physical suffering. The extend and practice of physical abuse to women is sometimes supported by cultural believes. This leads to concealing of cases of physical abuse within the society. Another form of domestic violence is sexual abuse. According to WHO sexual abuse involves "any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person's sexuality using coercion" [4].

Forced inspection for virginity and female genital mutilation are also considered forms of sexual abuse. Rape is one of the leading cases of sexual abuse. However, it is underreported in some communities due to their beliefs or protection of the perpetrators[10]. Emotional abuse is also classified as a form of domestic violence. It is a pattern of behavior that is meant to belittle, dehumanize or undermine one's self worth. Emotional abuse is rarely reported and not recognized by many legal systems in the world [11]. Lastly, economic abuse is also another form of domestic violence. Domestic abuse occurs when one partner has domineering control over the use and consumption of economic resources. Deprivation from the use of the economic resources and assets amounts to economic abuse [12]. In this study, we shall investigate the relationship between chronic malnutrition and domestic violence. It is assumed that domestic violence is highly associated with chronic malnutrition. Families and other individuals faced with hunger and famine are more likely to engage in antisocial behaviors like domestic violence. Therefore, this study will help in evaluating and identifying the linkage between domestic violence and chronic malnutrition using a case study of Tanzania.

2. Methods

The analysis of the study data will use both descriptive and inferential statistics to obtain insights into the chronic malnutrition and domestic violence among women in Tanzania. The data is obtained from demographic characteristics of Tanzania female population in 2016. Some sample of 1564 women is obtained to collect data on the study variables required. Demographic characteristics of the sampled women collected include, age, marital status, education level, economic status, health status and violence. Inferential statistics will be used to determine the association between chronic malnutrition and the demographic characteristics of the respondents including the reported forms of domestic violence. A multivariate model is used to determine the factors that are associated with anemia.

The multivariate model provides a point estimate value for each of the factors and a 95% confidence interval for the factors. The multivariate model used will provide odd ratios for the demographic characteristics of the sample data. An odd ratio of 1 implies that the factor is not significant to anemia or chronic malnutrition. An odd ratio that is greater than 1 implies that the factor has higher prevalence for anemia than the control factor. On the other hand, an odds ratio that is lower than 1 implies that the factor has lower prevalence of anemia than the control factor.

Since sample data is used in the study, point estimates may not be reliable because of the probability of sampling errors. It therefore important to provide a measure for the odd ratios with a measurement of the expected level of error in the population of Tanzanian women. Hence, the confidence intervals for the odd ratios

are used. Although, the point estimate for an odd ratio may be lower or higher than 1, the ratio may be insignificant based on the margin of error and confidence interval. If the confidence interval spans 1, then the odds ratio is not significant.

3. Results

Different age groups are likely to experience domestic violence and chronic malnutrition differently. The sample for the study has considered Tanzania women between 15 years of age and 49 years. The largest proportion of the sample is between the age of 20 and 29. This represents 44.7% of the sample size. 8.6% of the sample women are aged between 15 years and 19 years. 34.3% of the women are aged between 30 years and 39 years. 12.4% of the sample is n=between the ages of 40 years and 49 years. Marital status is expected to have an influence in domestic violence. Most of the reported cases of domestic violence involve married partners. However, it not clear what effect marital status has chronic malnutrition. On one hand, married couples have more earning power from their combined income to provide for food and nutrition for their families. On the other hand, married individuals are likely to have many dependents who may drain most of their income and resources and thereby result in food shortage. 1157 of the sampled women were married while the remaining 407 were living with partners. This represents 74% of married women and 26% living with their partners. Education increases the level of awareness among individuals. In addition, education improves the social economic status of people.

Highly educated people have higher likelihood of earning higher incomes. Therefore, chronic malnutrition is expected to be low or absent in highly educated people. Although there is no conclusive research on the prevalence of domestic violence based on educational level, it is expected that higher levels of education increase the chances of reported domestic violence. 16.6% of the sampled respondents are illiterate, 66.7% have acquired at least primary level of education. 15.9% of the sample has attained at least secondary level of education while 0.8% have higher education or tertiary education qualifications. In this study, health is used to represent chronic malnutrition. Therefore, the variable for health is measured using test for anemia. The variable is either recorded as yes for those with anemia and no for those without anemia. 55.7% of the respondents tested positive for anemia while 44.3% tested negative. This shows that a larger proportion of the sample has experienced chronic malnutrition. In this study, we measure and consider domestic violence as reported by the respondents.

Domestic violence is measured on different levels and classes. The study sought to determine incidences of domestic violence. The forms of domestic violence that were measures are emotional violence, less severe violence, severe violence and sexual violence. 30.6% of the respondents have experienced some form of emotional violence while 69.4% did not. 34.1% of the respondents experienced less severe violence while 65.9% did not. 14.4% of the respondents experienced severe violence while 85.6% did not. Finally, 12.2% of the respondents experienced sexual violence while 87.8% did not. Generally, a majority of the respondents did not experience any of the form of domestic violence.

Table 1: Demographics Characteristics of Tanzania Female Population, 2016

	Females
Background Characteristics	**n (%)**
Age	
15 - 19	134 (8.6)
20 - 29	699 (44.7)
30 - 39	537 (34.3)
40 - 49	194 (12.4)
Gender	
Female	1564 (100.0)
Marital Status	
Married	1157 (74.0)
Living with partner	407 (26.0)
Education Level	
No Education	260 (16.6)
Primary	1043 (66.7)
Secondary	248 (15.9)
Higher	13 (0.8)
Wealth Index	
Poorest	337 (21.5)
Poorer	287 (18.4)
Middle	298 (19.1)
Richer	348 (22.3)
Richest	294 (18.8)
Anemia test result	
Yes	55.7
No	44.3
Experienced any emotional violence	
No	887 (69.4)
Yes	391 (30.6)
Experienced any less severe violence	
No	842 (65.9)
Yes	436 (34.1)
Experienced any severe violence	
No	1094 (85.6)
Yes	184 (14.4)
Experienced any sexual violence	
No	1122 (87.8)
Yes	156 (12.2)

The reference age group for the sample ages is 40-49. Respondents aged 30 – 39 years are 6% less likely to have anemia than those ages 40-49 years (95% CI [0.67 – 1.31]). However, the prevalence is not significant. Hence, the odds ratio for age groups 30–39 and 40–49 are not significantly different. Respondents ages 20-29 years are 3% less likely to have anemia that the respondents ages 40-49 years ((95% CI [0.70 – 1.34]). The prevalence for the age group is not significant. Respondents aged 15-19 years are 67% more likely to have anemia than those aged 40-49 years (95% CI [1.07 – 2.62]). The prevalence is significant. Hence, anemia is highly prevalent between the young ages of between 15 to 19 years. A univariate analysis shows that married women are 20% less likely to have anemia than those living with a partner (95% CI [0.64 – 1.01]). This may imply that married couples are more likely to provide nutritional requirements to their families than those cohabiting or living with

their partners. However, the odds ratio is not significant because the 95% confidence interval includes 1. Thus, there is no significant difference between the prevalence of anemia among married women and those living with partners. Higher education level is used as the reference group for the evaluation of education level as factor association to anemia. Respondents with secondary level of education are 206% more likely to have anemia than those with higher education (95% CI [0.64 – 14.46]). However, the odd ratio for secondary level of education is not significant. Hence, there is not significant difference between the prevalence of anemia among those with higher level of education and those with secondary level of education. Respondents with primary level of education are 255% more likely to have anemia than those with higher education (95% CI [0.76 – 16.54]). However, the odd ratio for primary level of education is not significant. Hence, there is not significant difference between the prevalence of anemia among those with higher level of education and those with secondary level of education. Respondents without education are 343% more likely to have anemia than those with higher level of education (95% CI [0.93 – 20.90]). However, the odd ratio for no education is not significant. Hence, there is not significant difference between the prevalence of anemia among those with higher level of education and those with without education attainment. The richest group is used as the reference point in determining the odds ratio for the wealth index. The richer are 8% more likely to have anemia than the richest (95% CI [0.78 – 1.48]). However, the odds ratio is not significant. Thus, there is no difference in the prevalence of anemia among the richest and the richer. The middle class are 24% more likely to have anemia than the richest (95% CI [0.89 – 1.72]). However, the odds ratio is not significant. There is no difference in the prevalence of anemia among the richest and the middle class. The poorer are 10% more likely to have anemia than the richest (95% CI [0.79 – 1.53]). However, the odds ratio is not significant. There is no difference in the prevalence of anemia among the richest and the poorer. The richer are 8% more likely to have anemia than the richest (95% CI [0.98 – 1.85]). However, the odds ratio is not significant. There is no difference in the prevalence of anemia among the richest and the poorest. The respondents living in rural residence are considered as the reference group for evaluating place of residence as a factor for anemia prevalence. Those living in urban residence are 6% more likely to have anemia than those living in rural residence. However, the odds ratio for urban residence is not significant. Hence, there is no significant difference in the prevalence of anemia between urban and rural residents. Univariate logistic regression is used to evaluate the prevalence of anemia based on the various forms of domestic violence. The forms of domestic violence considered are emotional violence, severe violence, less severe violence and sexual violence. The respondents who have experienced some form of emotional violence are 2% more likely to have anemia than those who did not experience the violence (95% CI [0.80 – 1.30]). However, the odds ratio is not significant. Thus, there is no significant difference in the prevalence of anemia among the women who have experienced emotional violence and those who did not. The respondents who have experienced less severe violence are 23% less likely to have anemia than those who did not experience the violence (95% CI [0.61 – 0.98]). The odds ratio is significant. Thus, there is a significant difference in the prevalence of anemia among the women who have experienced less severe violence and those who did not. The respondents who have experienced severe violence are 22% less likely to have anemia than those who did not experience the violence (95% CI [0.57 – 0.99]). The odds ratio is significant. Thus, there is a significant difference in the prevalence of anemia among the women who have experienced severe violence and those who did not. The respondents who have experienced sexual violence are 10% less likely to have anemia than those who did not experience the violence (95% CI [0.64 – 1.26]). The odds

ratio is not significant. Thus, there is no significant difference in the prevalence of anemia among the women who have experienced sexual violence and those who did not.

Table 2: Estimates of the Factors Associated with Anemia Among Female in Tanzania, 2016 from Univariate Model

Background Characteristics	**OR (95% CI)**
Age	
15 - 19	*1.67 (1.07 - 2.62)
20 - 29	0.97 (0.70 - 1.34)
30 - 39	0.94 (0.67 - 1.31)
40 - 49	1
Marital Status	
Married	0.80 (0.64 - 1.01)
Living with partner	1
Education Level	
No Education	*4.43 (0.93 - 20.90)
Primary	3.55 (0.76 - 16.54)
Secondary	3.06 (0.64 – 14.46)
Higher	1
Wealth Index	
Poorest	1.34 (0.98 – 1.85)
Poorer	1.10 (0.79 – 1.53)
Middle	1.24 (0.89 – 1.72)
Richer	1.08 (0.78 – 1.48)
Richest	1
Place of residence	
Urban	1.06 (0.84 - 1.33)
Rural	1
Experienced any emotional violence	
Yes	1.02 (0.80 – 1.30)
No	1
Experienced any less severe violence	

Yes	*0.77 (0.61 – 0.98)
No	1
Experienced any severe violence	
Yes	*0.78 (0.57 - 0.99)
No	1
Experienced any sexual violence	
Yes	0.90 (0.64 – 1.26)
No	1

A multivariate model is developed using a multiple logistic regression analysis of the factors. The objective of the multivariate analysis is to determine the association between violence and anemia prevalence using the adjusted odds ratio (AOR) instead of the odds ratio (OR).

The model is first controlled for the effect of age, marital status, education level, wealth index and place of residence. After controlling for the fixed factors, the adjusted odds ratios for each of the four forms of domestic violence is estimated.

The adjusted odds ratio for the respondents who experienced emotional violence is 0.99 (95% CI [0.79 – 1.27]). The adjusted odds ratio is not significant. Hence there is no significant difference in the prevalence of anemia between those who experienced emotional violence and those who did not. The adjusted odds ratio for the respondents who experienced less severe is 0.74 (95% CI [0.58 – 0.94]). The adjusted odds ratio is significant. Hence, there is a significant difference in the prevalence of anemia between those who experienced less severe violence and those who did not.

The prevalence of anemia among those who experienced less severe violence is 26% less than those who did not. The adjusted odds ratio for the respondents who experienced less severe is 0.77 (95% CI [0.56 – 0.97]). The adjusted odds ratio is significant. Hence, there is a significant difference in the prevalence of anemia between those who experienced severe violence and those who did not.

The prevalence of anemia among those who experienced severe violence is 23% less than those who did not. The adjusted odds ratio for the respondents who experienced sexual violence is 0.85 (95% CI [0.60 – 1.20]). The adjusted odds ratio is not significant.

Hence there is no significant difference in the prevalence of anemia between those who experienced emotional violence and those who did not.

Table 3: Estimates of the Factors Associated with Anemia Among Female in Tanzania, 2016 from Multivariate Model

Background Characteristics	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)	AOR (95% CI)
Age	0.88 (0.76 - 1.02)	0.88 (0.76 - 1.02)	0.88 (0.76 - 1.03)	0.88 (0.76 - 1.02)
Marital Status	*0.74 (0.57 - 0.95)	*0.75 (0.57 - 0.97)	*0.75 (0.58 - 0.97)	*0.73 (0.57 - 0.95)
Education Level	*0.77 (0.62 - 0.95)	*0.75 (0.61 - 0.93)	*0.76 (0.61 - 0.94)	*0.76 (0.62 - 0.94)
Wealth Index	0.97 (0.87 - 1.08)	0.96 (0.86 - 1.06)	0.97 (0.87 - 1.07)	0.97 (0.87 - 1.07)
Place of residence	0.89 (0.65 - 1.20)	0.88 (0.64 - 1.19)	0.89 (0.66 - 1.21)	0.89 (0.65 - 1.20)
Experienced any emotional violence	0.99 (0.79 - 1.27)	-	-	-
Experienced any less severe violence	-	*0.74 (0.58 - 0.94)	-	-
Experienced any severe violence	-	-	*0.77 (0.56 - 0.97)	-
Experienced any sexual violence	-	-	-	0.85 (0.60 - 1.20)

4. Conclusion

Only one age group for the sampled women was significant in the prevalence of anemia. Only age group 15 – 19 has a significant difference in the prevalence of anemia. The other age groups – 20-29 and 30-39 – do not have a significant difference between the age group 40-49. This implies that young adults ages between 15 and 19 years are more likely to suffer from chronic malnutrition than older women. This may also explain the exposure of early marriage to chronic malnutrition.

Marital status does not have a significant difference between the married women and those living with partners. Although the crude odds ratio implies that married women are 25% less likely to have anemia, the ratio is not significant. Hence, marital status would not have a significant effect on chronic malnutrition. This may be attributed to the likelihood of more dependents for married women with more providers for married women while those living with partners are more likely to have less children and less providers.

Illiteracy plays a key role in increasing the likelihood of chronic malnutrition. On average, illiterate women are

343% more likely to have chronic malnutrition than those with higher level of education. Those with primary and secondary education did not differ with those with higher level of education. Hence, some form of education reduces the likelihood of anemia among the women [13].

Wealth index does not have a significant prevalence of anemia. Chronic malnutrition is associated with the low income. However, the findings of the research do not show significant differences in prevalence of chronic malnutrition. In addition, place of residence does not have a significant impact on the likelihood of chronic malnutrition. Hence, chronic malnutrition is relatively uniform in rural and urban residence. The uniformity in chronic malnutrition would be associated with the unique food security and pricing in each of the two places of residence.

Finally, emotional violence and sexual violence are not significant factors for chronic malnutrition. However, less severe violence and severe violence. Surprisingly, the prevalence of anemia for those experiencing severe violence and less severe violence is lower than those who do not experience. This would be contrary to the expectations of positive correlation between experienced violence and chronic malnutrition. Insignificance of emotional violence and sexual violence would be attributed to lack of reporting for such forms of violence by women.

Knowledge of the factors influencing chronic malnutrition in Tanzania is crucial to policy makers in reducing the effects of acute hunger. Knowledge of these factors with their risk levels would be instrumental to the policy makers in determining the best course of action for preventing chronic malnutrition. For example, it important for policy holders to develop appropriate measures to curb the higher rate of chronic malnutrition in younger women than older women who are either married or living with partners. In addition, it is important for the stakeholders to ensure higher literacy rates to reduce the prevalence of chronic malnutrition.

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