"The Influence of Lifestyle on Adoption of Breast Cancer Prevention Modalities among Women." A Case Study of Kyaddondo County in Uganda

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Abstract

Background: In Uganda, breast cancer is the third most frequent cancer of women that is preventable through change in life style habits such as reduction in alcohol uptake, obesity, none use of tobacco products, use of hormonal pills and increase in physical activities thereby reducing the risk of women acquiring breast cancer. The objectives of this study are to establish the influence of lifestyle on the adoption of breast cancer prevention modalities among women in Kyaddondo County. **Methodology:** A household survey of women in Kyaddondo County using a self-administered questionnaire was undertaken to establish the influence of lifestyle on breast cancer prevention modalities. A sample of 414 females with at least 1 female per household was randomly selected. **Results:** The results using chi-square to establish an association to adoption of breast cancer prevention modalities showed that the significant determinants of the adoption of breast cancer prevention modalities were: taking alcohol, a woman gives birth, children ever born, breast feeding, frequency of breast feeding and a woman doing exercises. There was no significant relationship between frequency of alcohol intake, tobacco usage, frequency use of tobacco, use of family planning, type of family planning method used(orals pills and injectables), length of use of family planning, type of work done for a living and frequency of exercises in relation to adoption of breast cancer prevention modalities. Logistic regression analysis revealed that the lifestyle key determinants of adoption of breast cancer prevention modalities are limiting alcohol consumption (OR 2.084 95% CI: 1.260-3.449), family planning uptake (OR 3.479 95% CI: 1.331-9.095) and exercising (OR 2.524 95% CI: 1.613-3.949). **Conclusions:** This study inculcates participation of women and their communities' evidence based lifestyle educational programs to help improve the health of women but also their level of knowledge so as to increase the adoption of breast cancer prevention modalities

Introduction: Merriman (2010) avowed that breast cancer is the third commonest cancer in women after cervical cancer and Kaposi sarcoma in Uganda with an incidence that has more than doubled. Currently approximated to be 40/100,000 from 11.7/100,000 in 1960s with diagnosis mainly done in stage 4 making effective treatment and prompt management impossible. Galukande (2013) revealed breast cancer in Uganda is projected at a 4.5% per annual as per the age standardized incidence rate but is curable if promptly diagnosed through breast-self exam and clinical diagnosis then treated early. According to Semarya (2013) breast cancer accounts for 16% of cancer deaths in adult women and is a major life threatening public health problem of great concern.

The Ugandan government established the Uganda cancer institute to treatment all types of cancer but it is overwhelmed as the only cancer referral Centre in the country serving patients from Djibouti, Eritrea, Somalia, western Kenya, Rwanda, Burundi, South Sudan and the eastern Democratic Republic of Congo. This situation has been aggravated by the surge of cancer patients from 1800 in 2011 to 2,800 in 2012 with only 6 oncologists in the country (1:40 patients) who are struggling to keep up.

Grady (2013) cites that breast cancer is preventable through the adoption of prevention modalities that do not have any effective primary prevention which necessitates the need of a nationwide breast cancer awareness program involving clinics in remote areas and a referral system that would improve detection and treatment in-turn reducing breast cancer related mortality. Ahamedin (2011) concurs that breast cancer, remains the most frequently diagnosed cancer and the leading cause of cancer death among females, accounting for 23% of the total cancer cases and 14% of the cancer deaths and with a 3% annual incidence and 1.8% death rate.

This means that the burden of cancer is increasing continuously due to infectious diseases and alongside an increasing adoption of cancer-causing behaviour, particularly smoking, obesity, physical inactivity, and reproductive behaviours, alcohol consumption in Uganda. Musoke (2013) attributes this, to the overwhelming contribution from HIV epidemic and low breast cancer literacy especially among patients as young as 18 years. Most of the patients at Uganda cancer institute go with complaints, the majority report having felt discomfort in the last six months (44%); three-six months are 34% with only 22% going for check-up after feeling uncomfortable in less than three months.

This is a hindrance to prompt management as far as cancer management is concerned because if the risk

of breast cancer is discovered early, it can be taken out and cured. This has prompted the study to investigate the influence of lifestyle on adoption of breast cancer prevention modalities among women in Kyaddondo County. Thus would contribute to designing evidence based behavioural change programs hence increase early diagnosis, increase awareness of lifestyle as a contributory factor that will avert morbidity and mortality associated with breast cancer in women.

Methods: A household survey of women in Kyaddondo County, found between Kampala and Wakiso districts was adopted to establish the influence of lifestyle on breast cancer prevention modalities. The researcher believed that at household level it was easier to study in-depth the lifestyle factors influence of breast cancer prevention modalities of the respondents so as to provide more reliable account of the data obtained. The age of 18 years was chosen because younger women are acquiring breast cancer due to infectious diseases and the behaviour lifestyles they have adopted. Kyaddondo County is located in the central part of Uganda that is northern and eastern parts are in Wakiso district while its southern and western parts are in Kampala district. Therefore part of Kyaddondo is a part of Kampala city making it a proportion of the county urban. However the county also has peri-urban and rural areas.

Sampling Procedures: Cluster sampling method was used in the selection and Kyaddondo County was stratified into 20 parishes [clusters] as the primary stratification variable. At this stage, each parish was further clustered into villages. Each parish comprises of 10-20 villages and in each village 50-100 households and The 20 parishes were used as the large clusters from which 10 villages were selected and the others small clusters. At the household level, 40 households from each village and one respondent each household was selected randomly giving 400 respondents. Each house household has 1- 4 women who are aged 18 years of age and above.

Discussion: The lifestyle of Kyaddondo women are: alcohol consumption, tobacco usage, parity, breast feeding, uptake of family planning, occupation and physical activity were analyzed to assess their association with breast cancer prevention modalities using the chi-square test.

Table 1 reveals that the significant determinants of the adoption of breast cancer prevention modalities were: taking alcohol, a woman gives birth, children ever born, breast feeding, frequency of breast feeding and a woman doing exercises. There was no significant relationship between frequency of alcohol intake, tobacco usage, frequency use of tobacco, use of family planning, type of family planning method used, length of use of family planning, type of work done for a living and frequency of exercises in relation to adoption of breast cancer prevention modalities.

The analysis of alcohol intake indicated that a woman not taking any alcoholic drink had more chances of adopting breast cancer prevention modalities. 66.7% (100/150) of the women who did not drink alcohol adopted breast cancer prevention modalities compared to 33.3% who do (50/150). Thus, alcohol consumption was found to be significantly influence adoption of breast cancer prevention modalities among women in Kyaddondo County ($\chi 2$= 9.599 p-value = 0.002).

Analysis of a woman's giving birth in relation to adoption of breast cancer prevention modalities revealed a significant relationship. This implies that adoption of breast cancer prevention modalities is dependent on whether a woman gives birth. For example 70.7% (106/150) of the women who had given birth adopted breast cancer prevention modalities compared to 29.3% (44/150) who did not ($\chi 2$= 13.440 p-value = 0.000). The parity of a woman was found to significantly influence adoption of breast cancer prevention modalities ($\chi 2$= 15.061 p-value = 0.002). The study revealed that 53.3% of the women that had 2-6 children had higher chances of adopting breast cancer prevention modalities than their counterparts with no child (29.3%).

Furthermore, the analysis of the length of time spent breasting feeding a child in relation to adoption of breast cancer prevention modalities revealed a significant relationship. This implies that adoption of breast cancer prevention modalities is dependent on the length of time a woman spends breast feeding her child. For example 64.2% (68/106) of the women who spent 1-2 years breast feeding each child had higher chance of adopting breast cancer prevention modalities compared to 26.4% (28/106) who breast feed for 6months to a year ($\chi 2$= 9.435 p-value = 0.051).

Finally, the analysis of a woman exercising in relation to adoption of breast cancer prevention modalities revealed a significant relationship. This implies that adoption of breast cancer prevention modalities is dependent on whether or not a woman exercises. For example 50.7% (76/150) of the women who exercised had higher chance of adopting breast cancer prevention modalities compared to 49.3% (74/150) who did not ($\chi 2$= 9.435 p-value = 0.000).

Table 2 shows the multivariate analysis of lifestyle factors influencing the adoption of breast cancer prevention modalities. The analysis of alcohol intake in relation to adoption of breast cancer prevention modalities found a significant relationship. The odds of adopting breast cancer prevention modalities among women who did not drink any alcohol in Kyaddondo County were 2.08 times higher than among their counterparts.

A woman's child status was analyzed in relation to adoption to breast cancer prevention modalities. It was established that a woman who had never given birth was 0.327 times less likely to adopt breast cancer

prevention modalities than their counterparts who had children. However no significant difference was established between parity of a woman and adoption of breast cancer prevention modalities among women in Kyaddondo County.

The odds of adopting breast cancer prevention modalities were 3.47 times higher if a woman was using family planning to control birth than if she was not. Although the length of use of injectables and oral pills showed no significance in the odds. The ratio of the odds of adopting breast cancer prevention modalities if a woman was exercising to the odds of not exercising was 2.54. Therefore by exercising, women are 2 times more likely to adopt breast cancer prevention modalities than if they were not.

Conclusion: Breast cancer-preventive modalities are critical for the health of women and their communities. The analysis of alcohol intake in relation to adoption of breast cancer prevention modalities tells us that odds of adopting preventive modalities is twice among women who do not take alcohol. This indicates that women who do not take alcohol have higher chances of adopting breast cancer prevention modalities than their counterparts who drink. Knight (2009) concurs with the results above when he compared drinkers to non-drinkers, found out that women who consumed no alcohol or 1 alcoholic drink a day were less at risk compared to those who have 2 to 5 drinks daily with 1½ times the risk of women who don't drink alcohol.

The study findings revealed a woman who had never given birth was 0.343 times less likely to adopt breast cancer prevention modalities than their counterparts who had children. This indicates a weak relationship between being a mother and adopting breast cancer prevention modalities. Maryam (2013) disagrees with this, when she argues that women who do not have children had a slightly higher risk of breast cancer overall because they are not aware of the effect of not giving birth. The odds of adopting breast cancer preventive modalities are twice for a woman who is exercising than for someone who is not. This indicates that the more a woman exercises the higher the chances that she is adopting breast cancer prevention modalities than if she were not. Knight, (2009) in a study of Women's Health Initiative proved that physical exercises reduce the risk of breast cancer in men and women by 18%. The significant determinants of the adoption of breast cancer prevention modalities were taking alcohol, a woman giving birth, frequency of breast feeding and a woman doing exercises.

Competing interests: None.

Authors' contributions
1. Christine Atuhairwe –the researcher
2. Dr. Dinah Amogin- Support supervisor of the research project
3. Steven Mugarura-Statistician and analysis advisor
4. Elly Agaba-advisor

Table1 : Bivariate analysis of Lifestyle factors and adoption of breast cancer prevention modalities

Variable	Breast cancer prevention modalities		Total	p-value
Alcohol intake				
Yes	50	52	102	0.002*
No	100	212	312	
Ever given birth				
Yes	106	224	330	0.000*
No	44	40	84	
Parity				
No child	44	38	82	0.002*
One child	20	46	66	
2-6children	86	160	246	
More than 7 children	6	22	28	
Children breast fed				
All	94	196	290	0.012*
Almost all	4	14	18	
Some of them	2	2	4	
Duration of breast feeding				
Less than 6months	4	16	20	0.51
6months-1 year	28	58	86	
1-2years	68	116	184	
More than 2 years	6	28	34	
Not certain	0	6	6	
Uptake of Family planning				
Yes	92	150	242	0.370
No	58	114	172	
Common methods used				
Pills	46	64	110	0.206
Injectable	34	78	112	
Length of use				
Less than 1 year	26	36	62	0.797
1-5 years	44	78	122	
More than 5 years	16	34	80	
Not sure	2	2	4	
Type of work done				
With little physical activity	64	122	186	0.486
With a lot of physical activity	86	142	228	
Exercises physically				
Yes	76	85	161	0.000*
No	74	179	253	
Frequency of the exercises				
Almost daily	26	43	69	0.002*
Thrice a week	14	14	28	
Less than 3 times a week	22	16	38	
Occasionally	14	15	39	

If p-value is less or equal 0.05, there is a significant relationship and if it is greater than 0.05, there is no significant relationship

Table 2 : Influence of lifestyle on the adoption of breast cancer prevention modalities.

Variable	95% Confidence Interval Odds Ratio
Alcohol intake	
Yes	2.085(1.260-3.449)
Ever given birth	
Yes	0.327(0.079-1.344)
Child ever born	
No child	1.024(0.629-1.666)
Other categories	
Children breast fed	
Breast fed	1.104(0.813-1.501)
Others	
Duration of breast feeding	
Less than 6months	1.099(0.825-11.465)
More than 6months	
Uptake of Family planning	
Yes	3.479(1.331-9.095)
Common methods used	
Pills	1.321(0.856-2.039)
Injectable	
Length of use	
Less than 1 year	1.212(0.852-1725)
More than 5 years	
Type of work done	
With little physical activity	0.709(0.455-1.107)
With a lot of physical activity	
Exercises physically	
Yes	2.524(1.613-3.947)
No	

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