Factors Associated With Increased Cases Of Brucelosis Among Patients Aged 18 Years And Above At Kampala International University Teaching Hospital, Bushenyi, District

ABSTRACT

Background: The government has employed numerous strategies ranging from animal vaccination, quarantines, free tests and diagnosis.

The purpose of this study was to factors associated with increased cases of brucellosis among patients aged 18 years and above at Kampala International University Teaching Hospital.

This was a quantitative cross-sectional study which employed simple random sampling to select 36patients aged 18 years and above attending at Kampala International University Teaching Hospital who consentedto take part.

Results:majority 14 (38.9%) respondents belonged to the age group of 26-30years, followed by 12 (33.3%) respondents belonged to the age group of 31 and above while only 10 (27.8%) belonged to the age group of 18-25 years. Majority of the respondents, 15 (41.7%) respondents revealed that they were Christian-catholic. Most of the respondents 19(52.8%) revealed that they studied only secondary education, 10(27.8%) were primary leavers. The majority 19(52.8%) respondents belonged to Banyankole/Bakiga tribe. More so, majority of the respondents, 28 (77.8%) were Married. The study findings on income level showed that majority 13(36.1%) respondents belonged to 100,000 – 150,000 Uganda shillings. Majority that 14 (38.9%) respondents said that the distance to the nearest health facility was 1 – 2 kilometers followed by 10 (27.8%) respondents who said it was 5 and above kilometers. Majority 21(58.4%) respondents agreed that there is presence of diagnostic facilities of brucellosis and majority 23(63.9 %) respondents agreed that they adhere to treatment of brucellosis.

In conclusion, the study showed that there are many factors associated with increase in brucellosis cases among patients at Kampala International University Teaching Hospital which are significantly important and they include age, level of education, tribe, household income, property ownership, cost of treatment, distance from the health facility and poor service

utilization. Brucellosis places significant burdens on human healthcare systems and limits the economic potential of individuals, communities, and nations where such development is especially important to diminish the prevalence of poverty.

Introduction

The global burden of human brucellosis accounts for more than 500,000 new infections, with 12% deaths annually (WHO, 2019) and it occurs through direct contact with infected products of raw or half cooked meat, blood or ingestion of unpasteurized milk (Ellis, 2016). Brucellosis has been a challenge among those aged above 18 years with symptoms of increased fever, constant headache, joint pains, loss of appetite, as well as night sweats among others (Godfroid, et al., 2017).

Brucellosis in Africa is high in pastoral corridors and communities who largely come into contact with fluids from infected animals by several routes such as direct inoculation, inhalation of infectious sprays and ingestion of contaminated milk and meat products (Corbel, 2016). WHO (2018) reported that in the horn of Africa, human brucellosis is increasing at an annual rate of 4.3%. Findings carried out by Huber and Sanders in 2017 indicated that by 2015, human brucellosis was 24.5% in Africa countries and it is currently at a rate of 26.5% (WHO 2018). In Sub Saharan Africa, human Brucellosis prevalence range from 5 to 45% (Huber & Sanders, 2017).

In Uganda, the prevalence of human brucellosis stood at a rate of 15.8% in 2014 to a current rate of 27% in 2019 with in Northern, Eastern and Western cattle corridor areas as reported in 3 districts in east, central and western Uganda. However, a human brucellosis prevalence of 13.3% has been reported in urban settings of Uganda, and the prevalence of 7% in 2017 and 12% in 2019 among the butchers in Mbarara and Kampala districts respectively.

However the government of Uganda under Ministry of Health has worked hard to reduce the prevalence of brucellosis for example provision of mass sensitization on how to prevent it like avoiding consuming raw meat or unpasteurized milk, cheese, and ice cream, wearing gloves and protective glasses when handling animals or animal tissues and prescription of antibiotics like doxycycline, streptomycin and tetracycline in most governmental health facilities (MOH, 2019).

The government has employed numerous strategies ranging from animal vaccination, quarantines, free tests and diagnosis (MOH, 2019).

Despite the above interventions by the government, there has been an annual reported increase rate of human brucellosis at 3.5% since 2000 from the affected communities (MOH, 2019). For example according to the HMIS report (2019) of Kampala International University Teaching Hospital, 6.3% cases of human brucellosis among patients age 18 years and above were diagnosed in 2015, 2.5% in 2016 and it increased again to 3.9% and 4.2 in 2018 and 2019 respectively.

The increase in human brucellosis leads to complications arthritis, inflammation and infection of the testicles, central nervous system infections, endocarditis, challenges of liver malfunction and death in cases of poor medical intention (Magona and Etoori, 2017, MOH, 2018). Therefore this has prompted the researcher to explore factors responsible for the increased cases of brucellosis among patients aged 18 years attending at Kampala International University Teaching Hospital.

Materials and Methods

Study design, duration, and site

The study was a cross-sectional descriptive study conducted atKampala International University Teaching Hospital Bushenyi-Ishaka Municipality, Bushenyi District. along Mbarara-Kasese Road in western Uganda with seasonal climate Bushenyi district is about 360 km from Kampala city. It is bordered by Mitooma and Ntungamo districts in the south, Sheema in the east, Buhweju in the north and Rubirizi in the west. The collection of data was quantitative to establish the opinions of the respondents about the study problem under investigation.

Inclusion criteria

The study included patients aged 18 years and above attending at Kampala International University Teaching Hospital who were found at the Hospital during the study. Only people willing to participate and who consented were included in the study.

Exclusion criteria

- All people who were unwilling to participate and those who did not consent, those that were mentally and physically incapable to stand the interview were excluded.

Data collection procedure

The researcher got an introductory letter from the school which she presented to the hospital administrators who gave permission for data collection. The researcher introduced herself to the participants and explain to them the purpose of the research. Questionnaires were given to respondents to fill and those who were not able to read and write were guided by the researcher. Then the researcher checked through the filled questionnaires before leaving the data collection area to ensure their completeness.

Data management

Editing: This involved checking the questionnaire for completeness and improperly filled questionnaires will be sorted. Complete filled questionnaires were kept in the cupboard for safety and confidentiality and were later taken for analysis.

Coding: All questions in the questionnaire were coded for easy analysis and help in reducing data into manageable proportions.

Data analysis

The data collected and results was presented in tables, bar graphs and pie charts, analysed data and explanation on its significance followed each method of result represented. Data analysis software was backed up on a flash disk and CDs for safety.

Ethical consideration

RESULTS

Table 1: Demographic characteristics of respondents

n=36

Demographic characteristics		**Frequency**	**Percentage (%)**
Age	18-25	10	27.8
	26-30	14	38.9

	31 and above	12	33.3
Religion	Christian-protestant	14	38.9
	Christian-catholic	15	41.7
	Moslem	1	2.7
	Adventist	6	16.7
Level of education	None	2	5.6
	Primary	10	27.8
	secondary	19	52.8
	Tertiary	5	13.9
Tribe	Banyankole/Bakiga	19	52.8
	Baganda/Basoga	5	13.9
	Bakonjo	4	11.1
	Batoro/Banyoro	8	22.2
Marital status	Married	28	77.8
	Single	4	11.1
	Divorced	4	11.1

In response to age brackets of the respondents, majority 14 (38.9%) respondents belonged to the age group of 26-30years, followed by 12 (33.3%) respondents belonged to the age group of 31 and above while only 10 (27.8%) belonged to the age group of 18-25 years.

Majority of the respondents, 15 (41.7%) respondents revealed that they were Christian-catholic, 14(38.9%) respondents were Christian-protestant, and 6 (16.7%) respondents were Adventists while the least 1 (2.7%) respondents was a Muslim.

Respondents were also asked about their educational levels. Most of the respondents 19(52.8%) revealed that they studied only secondary education, 10(27.8%) were primary leavers while the least number of respondents 5 (13.9%) had tertiary level of education.

On the other hand, respondents tribe was also considered and the majority 19(52.8%) respondents belonged to Banyankole/Bakigatribe while the least 4(11.1%) respondents belonged to Bakonjo.

More so, majority of the respondents, 28 (77.8%) were Married while only 4(11.1%) respondents were single and divorced.

Socio-economic factors associated with brucellosis

Household income

Respondents were asked about their household income and responses are shown in table 2 below

Table 2 showing household income of the respondents

Variable		**Frequency (f)**	**Percentage (%)**
Income level	100,000 – 150,000	13	36.1
	160,000 – 200,000	6	16.7
	210,000 – 250,000	8	22.2
	260,000 – 300,000	5	13.9
	310,000 and above	4	11.1

The study findings on income level showed that majority 13(36.1%) respondents belonged to 100,000 – 150,000 Uganda shillings while the least 4(11.1%) respondents belonged to 310,000 Uganda shillings and above. The above findings therefore showed that majority of the respondents belonged to the humble background status.

Table 3 showing responses on property ownership

Variable		**Frequency (n)**	**Percentage (%)**
Property ownership	Ownership of a car	4	11.1
	Ownership of land for food production for sale	9	25.0

	Ownership of many domestic animals like cows and goats	13	36.1
	Ownership of a business	10	27.8

From the study findings, majority 13(36.1%) respondents revealed that they owned many domestic animals like cows and goats followed by 10(27.8%) respondents who revealed that they owned businesses while the least 4(11.1%) respondents revealed that owned cars as shown in the figure below.

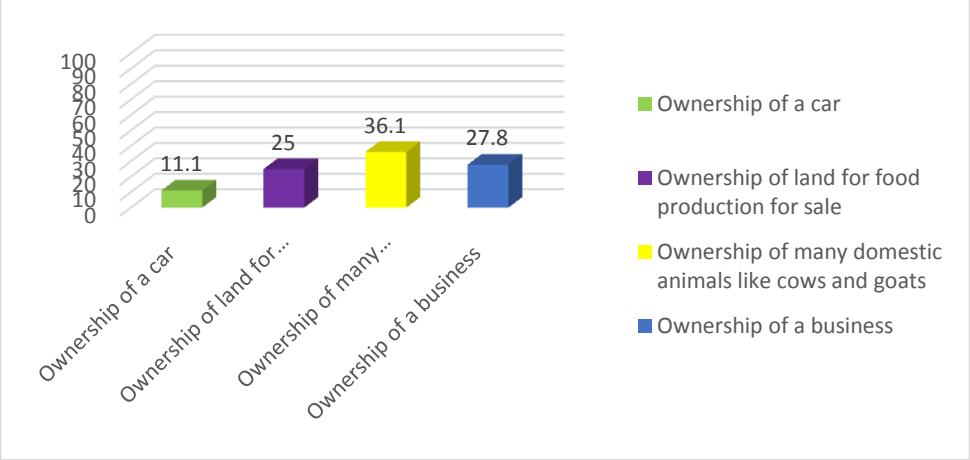

Figure 1 showing property ownership

Table 4 showing responses about cost of treatment

Variable		Frequency (f)	Percentage (%)
Cost of treatment	30,000 – 50,000	11	30.6
	60,000 – 100,000	10	27.8
	110,000 – 150,000	13	36.1
	160,000 and above	2	5.5

Results from table 3 above showed that, majority 13(36.1%) respondents revealed that they belonged to health facility with treatment costs ranging between 110,000 – 150,000 Uganda shillings followed by 11 (30.6%) respondents who belonged to the cost treatment of 30,000 –

50,000 Uganda shillings. The least 2(5.5%) respondents belonged to health facility ranging to 160,000 and above Uganda shillings.

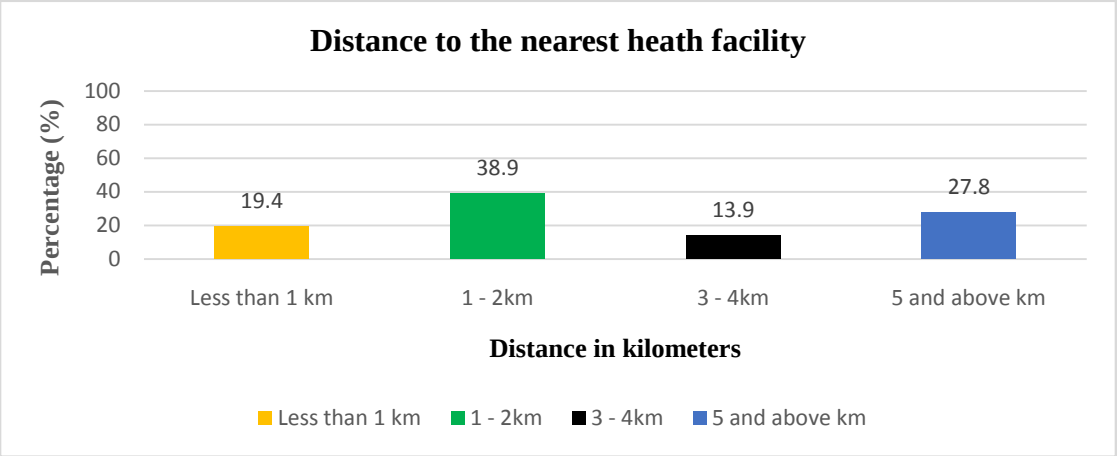

Figure 2 showing distance to nearest health facility

According to the study findings in figure 3 above, results revealed that majority that 14 (38.9%) respondents said that the distance to the nearest health facility was 1 – 2 kilometers followed by 10 (27.8%) respondents who said it was 5 and above kilometers.

7 (19.4%) respondents revealed that the distance to the nearest health facility was less than 1 kilometer while 5 (13.9%) respondents said that the distance was 3 – 4 km.

Table 5: Showing service utilization factors

Variable			**Frequency (f)**	**Percentage (%)**
Service utilization factors	Presence of diagnostic facilities	Yes	21	58.4
		No	15	41.6
	Medication supply	Regular	14	38.9
		Irregular	13	36.1
		Sometimes	11	30.6
	Adherence to treatment	Yes	23	63.9
		No	13	36.1

Source: **Field data, August, 2020**

According to presence of diagnostic facilities in table 5 above, results revealed that majority 21(58.4%) respondents agreed that there is presence of diagnostic facilities of brucellosis while the least 15 (41.6%) respondents said that there is no diagnostic facilities for brucellosis.

Majority 14(38.9%) respondents supported that there is regular medication supply while the least 11(30.6%) respondents said that they receive medications sometimes. On the other hand, majority 23(63.9 %) respondents agreed that they adhere to treatment of brucellosis while they least 13(36.1%) respondents revealed that they do not adhere to treatment of brucellosis.

DISCUSSION

In response to age brackets of the respondents, majority 14 (38.9%) respondents belonged to the age group of 26-30years, followed by 12 (33.3%) respondents belonged to the age group of 31 and above while only 10 (27.8%) belonged to the age group of 18-25 years.

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Conclusion

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Brucellosis places significant burdens on human healthcare systems and limits the economic potential of individuals, communities, and nations where such development is especially important to diminish the prevalence of poverty.

Recommendations

The implementation of public policy focused on mitigating the socioeconomic effects of brucellosis in human and animal populations is desperately needed.

The interdisciplinary "One Health" nature of the effects that brucellosis has indicate that collaboration of veterinary, medical, public health, cultural, economic and social experts is needed to effect a change in disease burden.

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