Assessment of knowledge, practice and factors associated with Brucellosis prevention among residence in Bati district, Oromiya Zone, Amhara state, Ethiopia

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Abstract: This study was done on residents of Bati district farmers from April to May 2018 to assess the knowledge and practice to prevention of the disease in the area of study. Cross-sectional study design and multistage sampling procedures were employed to select households for this study. The data were collected from785 households, using pretested and structured questionnaire. Data entry was done by using Epi info version 7 statistical software and SPSS version20 soft ware were used for data analysis. Both Bivariable and multiple logistic regressions were fitted. P-value with 95%CI was used and p-value < 0.05 were declared the significant association between knowledge and practice on brucellosis prevention and its associated factors. A total of 806 respondents were participated with a response rate of 97.4% (785). Among those, 785 respondents 682(86.9%) of them were males. Moreover respondents those educated had 2.863 times more likely good knowledge of brucellosis prevention (AOR=2.863, 95%CI: 2.215-3.700) than those not educated. Respondents those that had shared homes with animals were 2.041 times less likely had good practice of brucellosis prevention (AOR=2.041, 95 %CI: 1.091-3.816).
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Table 1: Socio-demographic characteristics of respondents (n=785) in Bati district, Ethiopia, April 2018. Below

Socio demographic variables	Frequency (n)	Percentage (%)
Sex		
Male	682	86.9
Female	103	13.1
Age (category)		
18-29	152	19.4
30-44	420	53.5
45-59	192	24.5
6o≥	21	2.7
Marital status		
Maried	638	81.3
Divorced	62	7.9
Widoied	44	5.6
Single	41	5.2
Occupation		
Agro pastoral	661	84.2
Pastoral	82	10.4
Others (merchants, gov.worker and supported)	42	5.4
Education		
Un able to read and write	424	54
Secondary education (7 & above)	72	9.2
Primary education (1-6)	227	28.9
Adult education	62	7.9
Religion: Orthodox	39	5.0
Muslim	746	95.0

Knowledge's of respondents towards prevention of brucellosis

Our study findings about knowledge of respondents, towards prevention of brucellosis for majorities of them, had good overall level of knowledge530 (67.5%) with 95% confidence interval. Thus knowledge level's of respondents were about; brucellosis as of animals aborting diseases 717(91.3%) and those who had heard about brucellosis directly as 'brucellosis' and had information's to its 68(8.7%). Moreover for sources of brucellosis, 678(86.4%) mentioned as of wild animals contacts and also for causes majorities 609(77.6%) of the respondents had no ideas. Regarding symptoms in humans 600(76%) of them suggested as nothing knows, for animals, abortion 636(81.0%) at six to seven months were mentioned. Moreover for transmission; unpasteurized dairy products 77(9.8%) were mentioned in (Table 2).

Variables	Frequency (n)	Percentage (%)
Do you know brucellosis (animals aborts)		
Yes	717	91.3
No	68	8.7
Heard or any information about brucellosis		
Yes	68	8.7
No	717	91.3
Symptoms of brucella in human		
Lack of sleep at night	1	0.1
Fever and sweating	155	19.5
Fatigues and muscle pain	25	3.2
Head ache and back pain	6	0.8
Have nothing about it	600	76.0
Symptoms of brucella in animals		
Abortion	636	81.0
Prolonged calving interval	26	3.3
Sterility	110	14.0
Drop milk production	11	1.4
Retained fetal membranes	4	0.5
Transmission route brucellosis		
Raw or unboild milk	125	15.9
Uncooked meat	47	6.0
Blood of animals contacts	12	1.5
Cow dung contacts	1	0.1
Do not know about	600	76.4
Control measures brucellosis		
Drugs of moderns from health	567	72,2
Traditional healers locally	153	19.5
Separate and feed properly	18	2.3
Nothings for	47	6.0
Preventing ways for brucellosis		
Boiled milk used for consumption	106	13.5
Cooked meat consumed	173	22.0
No ideas about	506	64.5

Practice towards prevention of brucellosis among study respondent

Overall practices of participants towards prevention of brucellosis were poor, about 496 (62.4%) of them had poor practices. Majority of the study participants 708(90.2%) consumed un boiled milk and 403(51.3%) of them ate raw meat culturally as food sources. Assisting of animals for production had practiced 619(78.9%) for an abortion commonly faced 580(73.9%) without using protective gloves and unhygienic ally, aborted materials exposed to the areas, only few of participants 68(8.7%) were properly discard. Closely living even sharing homes with animals practiced 690(87.9%). Moreover milking without properly washed hands and animals teats were practiced 664(84.6%) by women's. (table3).

Table 3: Practice towards prevention of brucellosis among study respondents (n=785) of Bati district, Ethiopia April 2018

Variables	Frequency (n)	Percentage (%)
Un boiled milk consumption		
Yes	708	90.2
No	77	9.8
Raw meat consumption		
Yes	403	51.3
No	382	48.7
Assist animals of reproduction		
Yes	619	78.9
No	166	21.1
Assisted by wearing glove		
Yes	235	29.9
No	550	70.1
Measures for aborted materials		
Buried	207	26.4
Burn	68	8.7
Gave for predators	25	3.2
Simply dispose away	279	35.5
Living share homes with animals		
Yes	690	87.9
No	95	12.1
Separate sick animals from healthy		
Yes	508	53.0
No	277	47.0
Animals abortion practiced with in the herds		
Yes	580	73,9
No	205	26.1

Bivariable and multivariate logistic regression results of factors associated with practice status of the respondent's (785) of Bati district, Ethiopia April 2018.

Variables	Practice		COR with 95%CI	AOR with 95%CI	p-value
	Good	Poor			
Sex of respondents					
Male	257	425	1.034(0.241-2.091)	1.031(0.651-1.632)	0.898
Female	38	65	1	1	
Occupation of respondents					
Agro-pastoral	244	417	0.838(0.0462-1.540)	1.215(0.878-1.680)	0.239
Others	51	73	1	1	
Cat Age of respondents					
In between 30-44	164	256	1.431(0.784-2.604)	1.895(1.340-2.680)	0.000
In between 18-29	47	105	1	1	
Education of respondents					
Educated	234	127	2.808(1.976-5.206)	0.694(0.555-0.868)	0.001
Not educated	168	256		1	
Separate sick animals:- Yes	394	114	3.583(2.709-8.501)	1.438(1.043-1.982)	0.016
No	136	141	1	1	
Culturally unboiled milk consumed					
Yes	270	440	1.227(0.874-3.043)	1.188(0.657-2.147)	0.569
No	25	50	1	1	
Sudden animals abortion:-					
Yes	224	356	1.188(1.0486-2.860)	1.737(1.174-2.569)	0.006
No	71	134	1	1	
Assisting animals practiced					
Yes	375	245	2.077(1.509-5.301)	1.607(1.096-2.356)	0.015
No	70	95	1	1	
Used protective glove					
Yes	165	72	3.339(2.074-8.404)	0.591(0.421-0.829)	0.002
No	223	325	1	1	
Shared home with animals					
Yes	412	280	2.438(1.403-3.749)	2.041(1.091-3.816)	0.016
No	35	58	1	1	
Wild animals contacts					
Yes	394	284	2.233(1.284-3.043)	5.350(2.719-10.527)	0.000
No	41	66	1	1	

Discussion

The overall result of this study revealed that 530 (67.5%) of the respondent had good knowledge about prevention of brucellosis. Thus findings were in lined with previous studies had done in Uganda 69.2% [15], Egypt [17] 65.5% and Kenya [18] 68.8% had belonged to knowledge level of our findings. Regarding to symptoms, for humans, knew very few of participants 209 (26.5%) but for animals majorities 716 (91.2%) of them knew as of abortion, thus our findings in lined with a study done in Egypt [17] which found high knowledge 94.4% of clinical signs as of abortion in the animals. However it was higher when compared with reported proportion to studies, done in Tajistan where abortion as a sign in animals was mentioned by11% of the participants [14]. The reason behind this variation is due to reasons for my study result becomes: might be an indicative for endemic situation of brucellosis to the area and poor prevention to my study area but relatively a good prevention to those of low proportion of participants knew about brucellosis to the areas.

Moreover, only of 117(14.9%) respondents knew about transmissions of brucellosis. Similar findings seen in Southwestern Nigeria [16] 14.2% and in Kenya [18] where only 12.9% of the respondents knew the transmission from cattle raw milk to humans. Contrary to our findings, higher knowledge's for transmission of brucellosis seen in studies done Uganda 360(97.0%) of consumption of unpasteurized dairy products[15] and also in Egypt 99 (92.5%) as it through drinking contaminated milk [17]. Explanation to our result of poor knowledge about transmission, might be due to poor awareness of communities about brucellosis and also lack of information as of before since there was not studies done about it.

Regarding practices of our respondents towards prevention of brucellosis of majorities 496 (62.4%) of them had poor over all practices, among them 708 (90.2%) consumed unboild milk and 403 (51.3%) uncooked meat, assisting of animals parturition 620 (79 %) shared home with their animals 690(87.9%) were those of major practices. Thus our findings were in lined with previous studies done in Kenya [18] consumption of raw milk 96%, assisting animals 76% also in south western Nigeria [16] consumption of raw milk 95.1% moreover recent studies done in Ethiopia [19] consumption of raw milk 91.9%. Contrary to thus findings, regarding raw meat consumption a low proportion were seen in studies done south western Nigeria [16] about of 27.8% the livestock holder and 12.6% the livestock marketer of the two groups were consumed also in recently studies done in Ethiopia[19] raw meat consumption of only about of 0.2% of respondents. Explanation for our findings of a higher of poor practice might be due to poor knowledge to the risks of brucellosis transmission and also due to cultural influence and adaptation of such practice.

Conclusion

Our findings reveal that for majorities of respondents, 530 (67.5%) as had good overall knowledge on brucellosis about; symptoms, transmissions, treatment, and prevention. Moreover regarding practices of participants; overall practice of respondents towards prevention of brucellosis; were for majorities, poor 496 (62.4%). Knowledge on transmission of brucellosis very low 117 (14.9%). Factors associated with knowledge towards prevention of brucellosis, education, ages, knowledge of animal's signs for brucellosis, cultural un boiled milk and raw uncooked meat consumption. And also those factors associated with practice towards prevention of brucellosis closely contacts even sharing home with their animals and assisting their animals without wearing protective gloves were the majors.

Thus findings highlights that the needs for collaboration between the public health and veterinary sectors in the provision of brucellosis prevention education and information for awareness creation on the cause, symptoms, transmission and prevention of brucellosis for better management. Moreover there is a need for increased public health education and behavioral change with emphasis on various modes of transmission in order to better control of brucellosis in the areas.

Recommendations

Based on the above conclusion, the following points were recommended; To health extension workers. Need to work with collaboration to veterinary sector workers of the areas as of one health for better awareness' to the areas such as not to be used un boiled and uncooked meat for consumption, separate home for animals and peoples and not contact aborted animals fluid and fetus without wearing protective gloves to brucellosis transmission of prevention. Give to attention for prevention of information about transmit ion ways of brucellosis infection, (Avoiding contacts of aborted materials with bar hands, wild animals contacts, contacts of sick animals, un boiled milk and meat consumption) such and the like to control and prevention of brucellosis.

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