

The “Jahai” and bush meat consumption: A snapshot of the situation among Indigenous in Belum Forest, Malaysia

Siti Fatimah KM¹, Abdul Rashid K¹, Rozita H², Lau SF³ and Tengku Rinalfi Putra TA³

RCSI & UCD Malaysia Campus¹, National University of Malaysia² and University Putra Malaysia³



Introduction

- Orang Asli is the Indigenous people living in Peninsular Malaysia.
- They are classified into three main groups, Negrito, Senoi and Proto-Malays; of which Jahai is one sub-ethnic group of Negrito.
- The Jahai living in the Belum forest are nomadic or semi-nomadic and most of them are hunters. They consumes bush meat as primary source of protein.
- Frequent contact with wildlife through bush meat hunting, eating raw contaminated meat and improper handling of contaminated meat or its carcasses increases the risk of contracting zoonotic diseases.
- Infections have been associated with hunting, butchering, and processing meat from infected animals.

Objectives

This community-based project aimed to:

- Assess the knowledge and practices on handling of bush meat and hand hygiene among the Jahai.
- Implement a health education program on the proper handling of bush meat and the importance of good hygiene practices.

Methodology

Study design and duration

- An analytical cross-sectional study was conducted among Jahai adults aged 18 years and above residing in Sg. Kejar, Belum Forest, Perak in Malaysia from 18-20 August 2017.

Study population

- The Jahai living in Belum Forest, Perak, Peninsular Malaysia.

Sampling method

- Due to the arrangement of the settlements of Jahai which is scattered and their nature of nomadic living, a convenience sampling was used to select the participants, who were approached at their homes.

Training of the trainees





Data collection

- First, several villages in Sg. Kejar in Belum Forest was identified.
- The community were approached at their respective houses with the assistance of a liaison person.
- The community were introduced and explained the reason for us being there. Good rapport was built and conversation on the bush meat was started.







Questionnaire

- The participants were interviewed on knowledge and practices in regards of bush meat and hand hygiene using a questionnaire.
- Questionnaire was used to assess the knowledge and practices on hunting, handling of carcasses, preparation of bush meat and hand hygiene.
 - Section 1: items on socio-demographic characteristics.
 - Section 2: items on knowledge (few items were adapted from Subramaniam M 2012).
 - Section 3: items on practice (few items were adapted from Friant S, Paige SB, Goldberg TL, 2015).

Health education program

- By using colourful illustration posters, health education was conducted.
- The health education program consist of:
 - a) Identification of healthy and sick animals
 - b) Types of diseases that they are at risk of contracting
 - c) Modes of transmission
 - d) Signs and symptoms of infection
 - e) Prevention methods, including hand hygiene

CEGAH PENYEBARAN PENYAKIT DARI PADA DAGING LIAR



01 KENALI HAIWAN SIHAT



02 KENALI HAIWAN SAKIT



03 CARA PENYEBARAN PENYAKIT



04 KESAN KEPADA MANUSIA

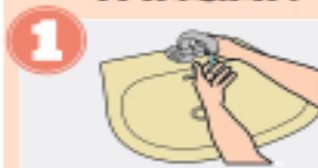


05 CARA PENCEGAHAN PENYAKIT



BASUH TANGAN DENGAN BETULI

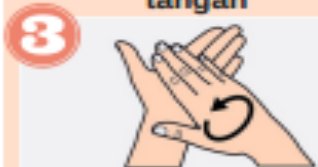
CARA CARA MEMBASUH TANGAN



Buka pili air dan basahkan tangan



Ambil sabun dan letakkan di atas tapak tangan



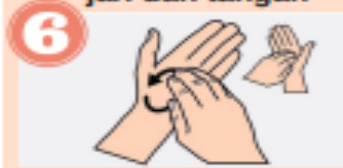
Gosokkan kedua-dua belah tapak tangan



Gosokkan setiap jari dan celah jari



Gosokkan belakang jari dan tangan



Bersihkan kuku pada tapak tangan



Basuh tangan dengan air yang bersih



Lap tangan sehingga kering

BILA ANDA PERLU BASUH TANGAN ?



Selepas bermain dengan binatang



Selepas membuang air kecil/besar



Selepas bersin atau batuk



Selepas berkebun/bermain benda kotor



SEBELUM MAKAN





Explanation on the poster to the participants



Ethical approval

Prior to the program, ethical approval was obtained from Joint Penang Ethics Committee (JPEC) and Department of Orang Asli Development (JAKOA).

Data analysis

- Data was analyzed using SPSS V21.0.
- Descriptive statistics was used to describe the participants and individual items.
- For numerical variable such as age, mean and standard deviation was displayed. Whereas for the categorical variable such as sex, frequency and percentage was displayed.
- The mean score of the total items of knowledge was used as the cut-off point to categorize into good and poor knowledge. Similarly, the mean was used to categorize into good and poor practice.
- Chi-square test was used to determine the association between the independent variables and the knowledge and practice status (good and poor).

Results

Response rate

A total of 102 out of 150 adults participated in the program, giving a response rate of 68%.

Socio-demographic characteristics

Majority of the participants were males (60%), married (82%), obtained informal education (73.3%) and were currently working (50%).

Table 1. Socio-demographic characteristics of study participants.

Characteristics	Frequency (n)	Percentage (%)
Sex		
Male	60	60
Female	40	40
Educational level		
Informal	74	73.3
Primary	20	19.8
Lower secondary	6	5.9
Upper secondary	1	1.0
Marital status		
Single	8	9
Married	73	82
Separated	1	1.1
Widowed	7	7.9
Employment status		
Unemployed	21	20.6
Employed	51	50.0
Housewife	29	28.4
Student	1	1.0

Descriptive of study variables

- Majority of the participants (81.4%, n=83) eats bush meat for living.
- The most common bush meats that they eat were monkeys (77.1%), porcupines (62.7%) and squirrels (46.9%).

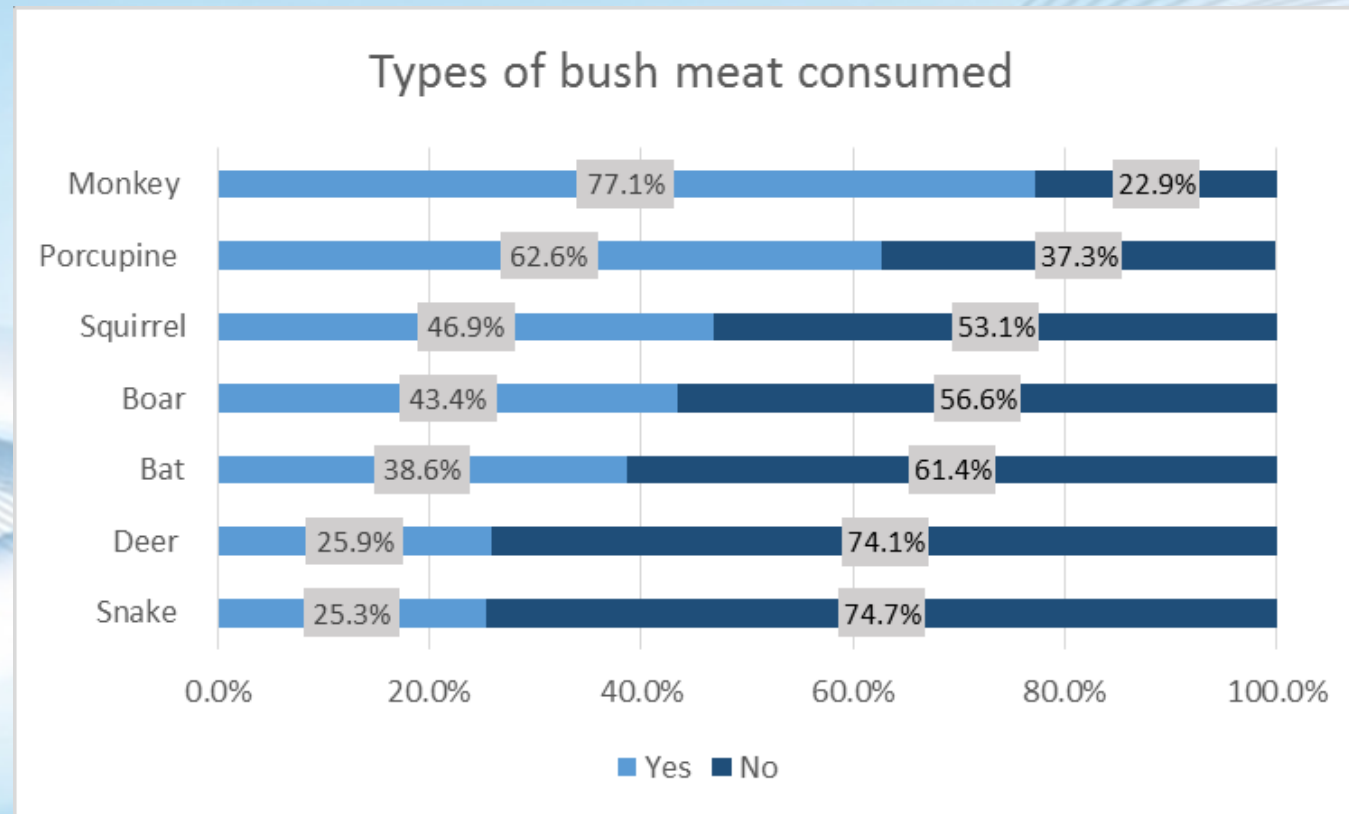


Figure 1. Types of bush meat consumed.

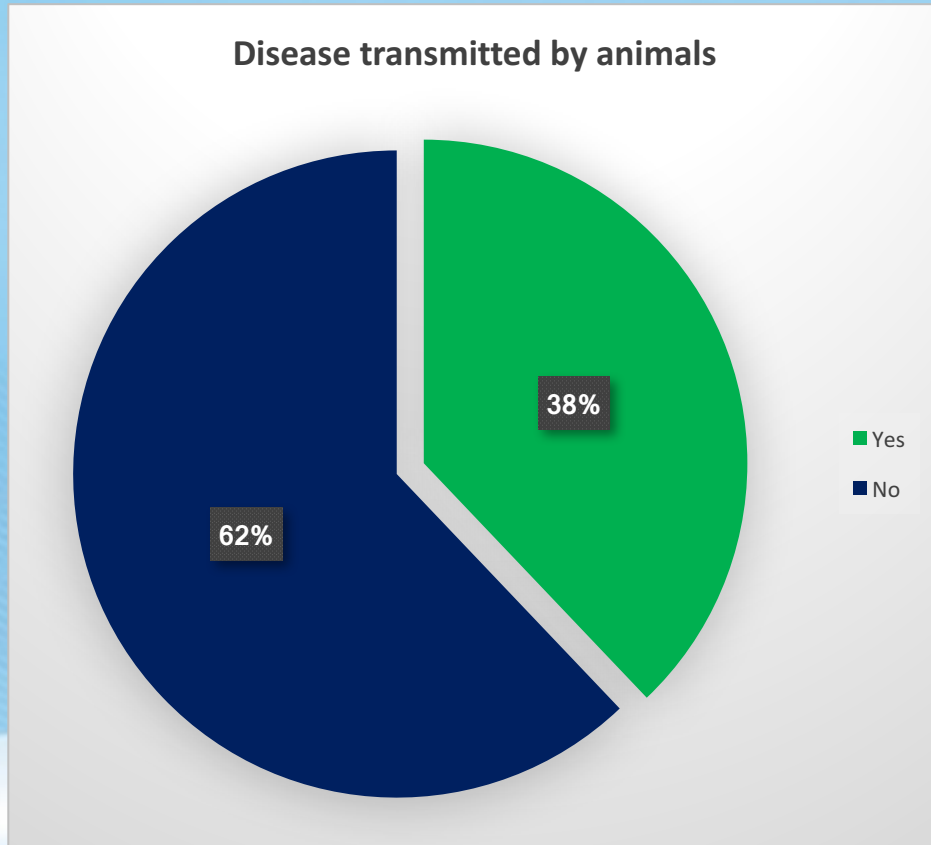


Figure 2. Transmission of diseases by animals

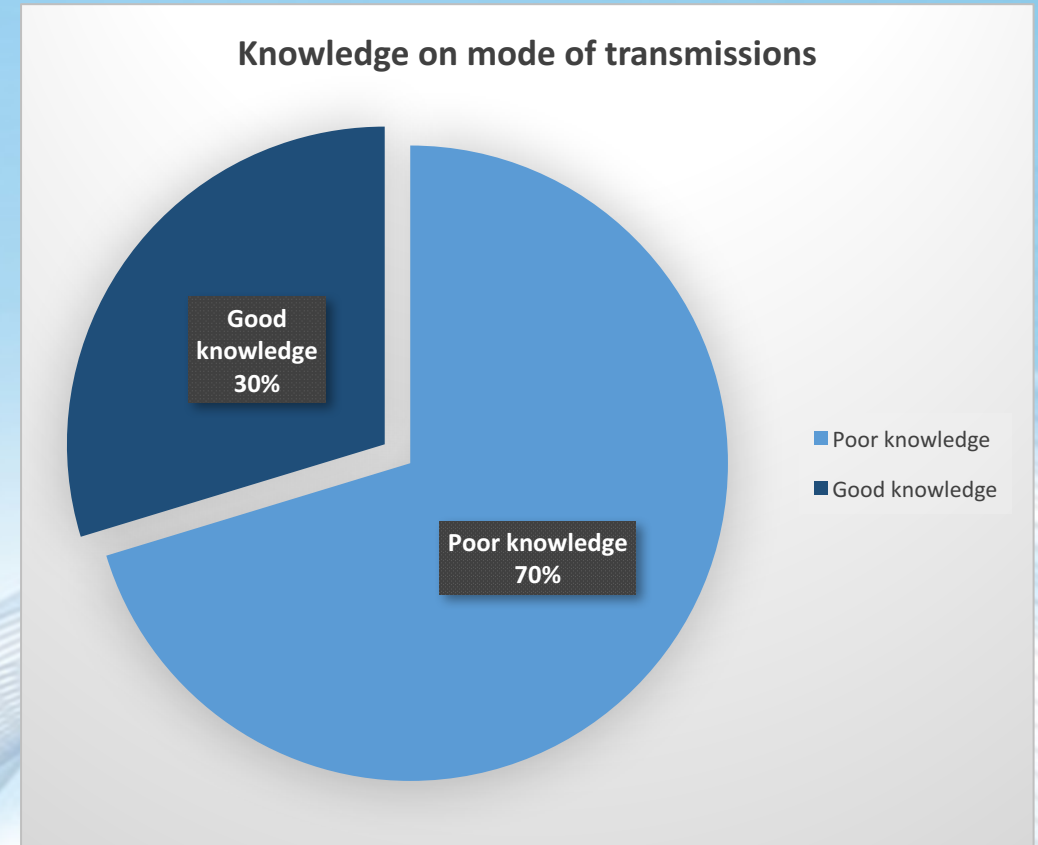


Figure 3. Knowledge on mode of transmissions

- Majority of the participants (62%) were unaware that animals are able to transmit diseases to humans.
- Most of them have poor knowledge (70.3%) on modes of transmission of the zoonotic diseases.

- Most of the participants were unaware on the body systems that were affected due to illness transmitted by the wild animals.

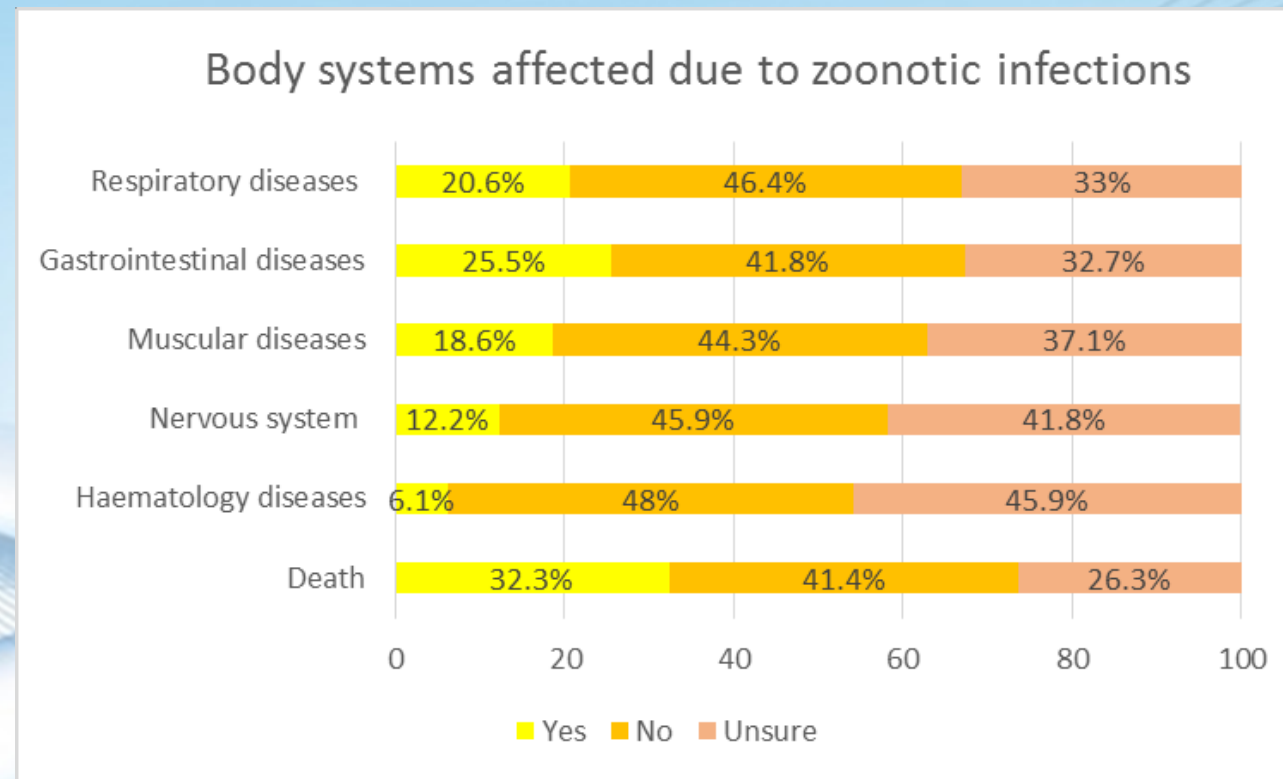


Figure 4. Body systems affected due to zoonotic diseases.

- Most of the participants had poor knowledge in regards of mode of zoonotic disease transmissions.

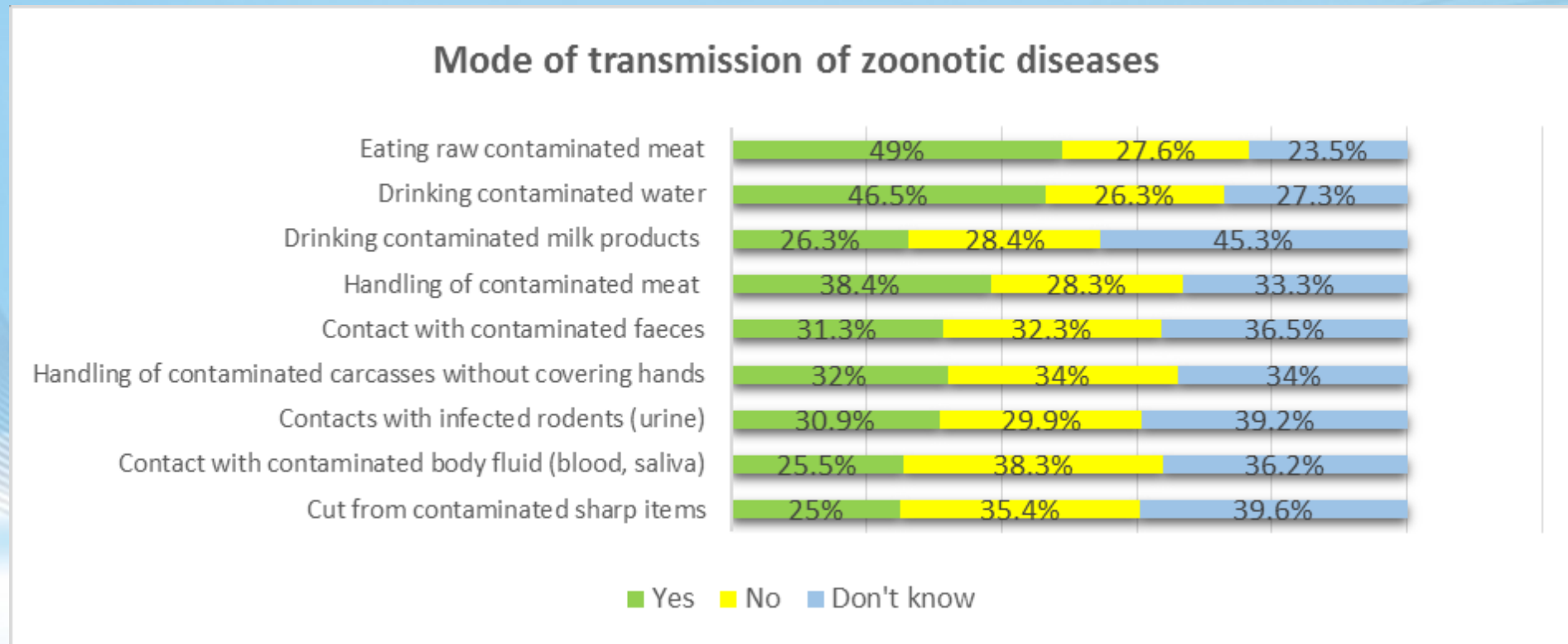


Figure 5. Mode of transmissions of zoonotic diseases.

- Besides that, majority of them do not use any protective equipment when hunting (87.0%) and handling carcasses (89.4%).

Association between study variables and consumption of bush meat

- There were significant associations between gender (OR: 2.41, 95% CI: 1.034-5.63, $p=0.039$) and employment status (OR: 3.13, 95% CI: 1.37-7.16, $p=0.006$) with knowledge on disease transmission.
- There was a significant association between knowledge on disease transmission and the consumption of bush meat (OR: 3.44, 95% CI: 1.23-9.67, $p=0.024$).
- No significant associations were observed between socio-demographic characteristics and practices on hunting, handling of carcasses, preparation of bush meat and hand hygiene.
- No significant associations were observed between practices on hunting, handling of carcasses, and hand hygiene with the consumption of bush meat.

Conclusion

- The study showed the baseline data on knowledge and practices regarding bush meat among Jahai aborigines in Belum forest, Perak, Malaysia.
- While majority of the Jahai eats bush meat for living, yet most of them were still lacking in knowledge on disease transmission and have poor practices regarding handling of bush meat and its carcasses, which might put them at risk of infection.
- Considering that bush meat is the main source of protein for these communities, it is imperative that they should be educated on the dangers of zoonotic infections and preventive measures to reduce the risk of contracting these infections.

Future directions

- To conduct a health promotion program on a periodically basis (if possible every six monthly) to reinforce their knowledge and improve their practices to reduce the risk of contracting the diseases.
- To incorporate the usage of audio visual in the program and hands-on sessions which will be beneficial to increase the participants understanding and engagement in the activity.

Acknowledgements

- Grant funder (My/Nco/Act/P001/Community Fund): MyOhun & USAID
- One Health trainers & trainees
- All the participants in the community

Thank
you



USAID
FROM THE AMERICAN PEOPLE

OneHealth
WORKFORCE



References

1. Hundal JS, Sodhi SS, Gupta A, Singh J, Chahal US (2016) Awareness, knowledge, and risks of zoonotic diseases among livestock farmers in Punjab, *Veterinary World* 9(2): 186-191.
2. Vliet NV, Moreno J, Gomez J, Zhou W, Fa JE, Golden C, Alve RRN and Nasi R (2017). Bushmeat and human health: Assessing the Evidence in tropical and sub-tropical forests. *Ethnobiology and Conservation*, 6(3). doi:10.15451/ec2017-04-6.3-1-45.
3. Friant S, Paige SB, Goldberg TL (2015). Drivers of Bushmeat Hunting and Perceptions of Zoonoses in Nigerian Hunting Communities. *PLoS Negl Trop Dis* 9(5): e0003792. doi:10.1371/journal.pntd.0003792.
4. McDonald E, Bailie R, Grace J and Brewster (2010). An ecological approach to health promotion in remote Australian Aboriginal communities. *Health Promotion International*, 25(1). doi:10.1093/heapro/daq004.
5. Subramanian, M (2012). Zoonotic Disease Risk and the Bushmeat Trade: Assessing Awareness Among Hunters and Traders in Sierra Leone. *EcoHealth* 9, 471–482. DOI: 10.1007/s10393-012-0807-1.