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A Study on Knowledge, Attitude and Practice of Dengue among Undergraduate Social Work Students from Tuljapur, Maharashtra, India

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Abstract

Zoonotic Diseases are a contemporary concern in public health because it has the animal-to-human transmission mode and influence the cause of infectious diseases. One Health identifies that health is interdependent and interrelated to concepts of environment, agriculture, animals (often act as agents), and the background of the relationship between the vector and the host. Dengue is one such disease which is a concern in South and Southeast Asia because it leads to preventable mortality. Thus, it is significant to understand the mode of KAP (Knowledge, Attitude, Practice) among youth; therefore, the enhancement of capacity based upon the existing framework may be implemented. The study was descriptive by nature and followed a convergent parallel mixed methods research design. The data were collected through a survey and semi-structured interviews, with the former providing quantitative components and the latter providing qualitative components. The sample design consisted of purposive sampling, and the sample size was calculated through Yamane's Formula and proportionately distributed among undergraduate students. The informed consent and anonymity of the respondents were ensured in accordance with ethical standards. 33 (58.9%) had heard about both Dengue and Zoonotic diseases. 44 respondents (78.6%) positively identified Zoonotic Diseases as animal-to-human transmission of infection and 38 (67.9%) respondents mentioned all regarding transmission of zoonotic diseases (vector, food, water-borne). The study found 47 (83.9%) possess adequate knowledge to identify Dengue as a zoonotic disease, and there was limited knowledge displayed about national programmes, as 26 respondents had not heard about both NVBDCP and NOHP-PCZ. 22 and 30 respondents were likely to access care through the Local Doctor and Private/Government Hospital respectively, which depicts that students were not keen on the public healthcare services system. **Conclusion:** It is necessary to create a collaborative multidisciplinary approach adopting social behavior change communication and the development of health seeking behavior and healthcare seeking behavior in the local context through community engagement.

Keywords

Zoonoses, Dengue, KAP, Social Work

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Introduction

Zoonotic diseases are caused by infections which can be transmitted through animal to human interface and sets up a difficult problem for public health. The Pandemic highlighted the preparedness of the public health mechanism were limited and it pushed the public healthcare system to maximum capacity. Most of the infectious diseases (60%) surprisingly most of the emerging and re-emerging human diseases (75%) are zoonotic by nature, and the incidence in low and middle income is high (Rai et al., 2025). The One Health paradigm displayed that there is an interdependence between the health of people, animals, and ecosystems and the necessity to rely on a multi-disciplinary, intersectoral approach at this interdependent interface (Rai et al., 2025).

The major share of the burden of zoonotic diseases is represented by the group of vector-borne diseases, which are contracted by blood-feeding arthropods such as mosquitoes, ticks, and sand flies (Guha et al., 2021). Dengue, caused by the *Aedes aegypti* and *Aedes albopictus* mosquito through a viral infection. The relation with disease and knowledge, attitude, and practice (KAP) must consider the population characteristics: well-educated, convenience, and barriers like information deficiency. This observation is further supported by another vector-borne disease, Visceral Leishmaniasis (Kala-azar), where a paradox in the case of a rural population was noted. 'Although, the bed net practice among this community was high (97.9%), the level of their awareness regarding the disease carrier was low since only 41.5% It indicates that practice came about as a learned and habitual practice in this community and may have been acquired through public health campaigns over time.' (Guha et al., 2021) There is a contrast between the two groups, one of which is educated but rather inconsistent in its actions and the other, which is obedient to a particular practice despite low levels of knowledge. This highlights the necessity of customized interventions.

One Health is an important practical response to these difficult realities, adopting a coordinated, multi-disciplinary, and cross-sectoral strategy to deal with the risks at the human-animal-environment interface (Rai et al., 2025). The study of KAP as a tool can estimate the endemic gap that impedes the effective management of zoonotic diseases. This a socioeconomic, cultural, and systemic predisposition that prevents implementation. The results of various studies in different populations, namely agricultural workers (Kulkarni & Reddi, 2018), dairy farmers (Kumar et al., 2024), and public health professionals (Rai et al., 2025) reveal this gap. An example is that in Andhra Pradesh, the general level of knowledge among agricultural workers was high, although what they knew about the transmission through contaminated milk and meat was low. Moreover, there is a significant gap in attitudes and practices; whereas 77% of agricultural workers had a positive attitude towards the use of protective measures, only 32% actually engaged in using the protective measures, which proves that positive intentions are frequently undermined by a lack of resources and cultural obstacles (Kulkarni & Reddi, 2018) Similarly, the percentage of moderate to high-risk behavior was moderate to high among dairy farmers, with 27.83% of the farmers sleeping in the barns with their dairy cows, which is a practice driven by economic necessity (Kumar et al., 2024). The Bhutan study provides an additional significant layer of evidence proving that the KAP gap is already at the systemic level. Although a national strategic plan of One Health existed, 60% of the professionals had no idea about it, and most of them had not received related training (Rai et al., 2025). This training, communication, funding, and collaboration institutional

failure is a direct influence on the ground activities, and it shows that a holistic approach to management would be necessary to close these gaps at all levels.

Methodology

The study was conducted through quantitative research methodology, and the research design was descriptive by nature. The tool for data collection was structured in the form of a questionnaire, which was administered online. The questionnaire had questions regarding the dimensions of Knowledge, Attitude, and Practice with the context of Zoonotic Diseases and Dengue. The responses were coded and analyzed through IBM-SPSS. The sample size was calculated mathematically through Yamane's Formula and was proportionately distributed among batches among students. The study was guided by ethical considerations of informed consent and anonymity. Informed consent was taken at the beginning of the questionnaire, and the variables of name or identification number were absent as items in the questionnaire, which helped maintain the anonymity of the respondents.

Results and Discussion

The respondents were all within the age range of 18 – 25 years. The respondent profile consisted of students who were aged between the above-mentioned age range.

Table 1. Crosstabulation

		Heard of Dengue	Total
		Yes	
Heard of Zoonotic Diseases	Yes	33	33
	No	23	23
Total		56	56

The analysis displayed that 33 respondents had heard of both Dengue and Zoonotic Diseases, whereas the remaining 23 respondents were aware of Dengue but had not heard about Zoonotic Diseases.

44 (78.6%) respondents concentrated on the response Zoonotic Diseases as Animal to Human transmission of infection. Also, the responses depict that 35 (62.5%) participants believed that all microorganisms, like bacteria, viruses, fungi, and protozoa could act as the causal factor for zoonotic diseases, 15 (26.8%) participants believed only bacteria and viruses were the casual factors, and the remaining were distributed between fungi and protozoa, and bacteria and fungi with 3 each. Moreover, 38 (67.9%) respondents mentioned all regarding transmission of zoonotic diseases (vector, food, water-borne), 10 (17.9%) respondents mentioned Vector Borne, and the remaining 2 and 6 responded with Food Borne and Water Borne, respectively.

The study found 47 (83.9%) possess adequate knowledge to identify Dengue as a zoonotic disease, and 53 respondents were able to identify mosquitoes as the agent of transmission. The

crosstabulation of the data displayed that 45 out of the 47 respondents could identify both Dengue as a Zoonotic Disease and that it is transmitted through mosquitoes, whereas the remaining 2 could identify Dengue as a Zoonotic Disease but mentioned both mosquitoes and sandflies could transmit the disease. Also, there were 8 respondents who could not identify Dengue as a Zoonotic Disease but were able to identify transmission through mosquitoes. Although there were 8 respondents who positively identified mosquitoes as the vector for dengue, they were unable to identify dengue as a zoonotic disease.

Table 2. Crosstabulation

		Heard of the National One Health Programme for Prevention and Control of Zoonoses		Total
		Yes	No	
Heard of the National Vector Borne Disease Control Programme	Yes	9	13	22
	No	8	26	34
Total		17	39	56

The responses displayed that 9 respondents had heard of both the National Vector Borne Disease Control Programme (NVBDCP) and the National One Health Programme for Prevention and Control of Zoonotic (NOHP-PCZ), 13 respondents had heard about NVBDCP but were not aware of NOHP-PCZ. 8 respondents had not heard of NVBDCP but had heard of NOHP-PCZ, and the remaining 26 had not heard of either NVBDCP or NOHP-PCZ.

The analysis displays that 39 (69.6%) respondents were able to identify that the type of infection in Dengue is Viral, and 29 (51.8%) respondents were able to identify that the vector was Aedes Aegypti and Aedes Albopictus. 23 out of the 39 responded with viral infection and were able to identify the vector correctly.

The analysis depicts that 44 respondents were able to identify all the listed symptoms of dengue, 1 was able to identify 2 or 3 symptoms from the listed symptoms, and 11 respondents were able to identify 1 symptom of dengue.

The results regarding the attitude display that 22 respondents were likely to access care through the Local Doctor, 30 respondents were likely to access care through the Private/Government Hospital, and the remaining respondents were through Sub-Centre (SC)/Primary Health Centre (PHC) or other components of the Public Health Services System. Also, 46 responded Most Likely to Test, and the remaining 10 responded Less Likely.

The data depicts that 12 respondents were likely to practice the use of both bed net, indoor residual spray, and cream under preventive skincare products, 4 respondents were likely to practice the use of both bed net, indoor residual spray, and gel under preventive skincare products, 28 respondents were likely to practice the use of both bed net, indoor residual spray and all preventive skincare products like cream, spray, gel.

The data for the variable of Bed Net Practice displayed that 26 (46%) mentioned Regularly, 8 mentioned Sometimes, and the remaining 22 (39%) mentioned did not practice. Also, for the variable of Indoor Residual Spray Practice, it was found that 17 (30.4%) mentioned Regularly and Sometimes respectively, and the remaining 22 (39.2%) mentioned did not practice. Finally, 16 respondents mentioned regularly practicing the use of repellent cream, 15 mentioned sometimes practicing repellent cream, and the remaining 25 did not practice.
Although the study was descriptive, certain correlations between variables have been flagged. The variables of Understanding of Zoonotic Diseases and Identification of Dengue as a Zoonotic Disease displayed a correlation coefficient of .591 with a p-value of .000, significant at the 0.01level (2-tailed). Also, the variables of Identification of Symptoms and Likelihood to Test have displayed a correlation coefficient of .345 with significance of .009 at the 0.01 level (2-tailed).

This study was conducted among the student's pursuing graduation in social work, with a range of ages 18-25 years. The results bring forth strengths and areas for improvement for the students who would engage with the community.

The result of the study shows that although students are aware of dengue as a disease and show a good understanding of the zoonotic diseases, they lack in identifying the agents of transmission of the zoonotic diseases. Moreover, the respondents show a good attitude towards preventive practices for dengue. Conversely, the respondents lack knowledge about the various national health programs aimed at addressing the persistent problem of vector-borne diseases and zoonotic diseases. The lack of awareness can be corrected by informing the students about the national health programs for reducing the prevalence of diseases and promoting preventive methods.

The level of knowledge and positive attitude towards preventive measures for dengue fever is high among the respondents, and the results align with a study conducted by Shylaja & John, who found that in Bangalore, university students show strong knowledge (30.6%) and preventive measures (75%) about dengue fever. (Shylaja & John, 2025) While drawing a comparison between a few developing Asian countries, it was found that a study conducted by Bhandari et.al. in 2025 highlighted a poor KAP score in Nepal for dengue fever. Amanah et al. (2018) found that undergraduate students in Malaysia had a moderate level of KAP regarding dengue fever. This comparative study highlights the requirement of increasing awareness among undergraduate students regarding dengue.

The study shows that less than half of the respondents, 23 (41.07%), were able to identify the vector correctly. This aligns with a study conducted by Pandey et al. in 2025, where only 24% accurately recognized Aedes mosquitoes as the primary carriers of dengue, though a troubling 18.4% were unsure of this information. Similarly, it was found that a high number of respondents (78.5%) correctly identified the symptoms of dengue; this conforms with the results from South Delhi, where 74% of the respondents were aware of the symptoms. (Pandey et.al, 2025)

Moreover, the study highlights the respondents' positive attitude towards seeking medical care, as 82.1% prefer getting a medical test and 53.6% show reliance upon private/government hospitals to avail treatment. This aligns with the study by Shylaja, B. S., & John, D. (2025), where a vast majority of respondents would seek medical tests and treatment from hospitals.

Similarly, majority of the respondents (78.5%) were able to identify the symptoms correctly, and regularly practice preventive measures such as; using indoor residual spray, repellent creams and bed net practices, although there are differences in popular preferences, such as indoor residual spray is more popular than bed net practices, this aligns with a study by Shylaja, & John in 2025, where it was found that application of preventive creams and residual sprays are preferred over bed net practices. This exhibits a positive and responsible attitude among the respondents, also highlighting the nuanced choice.

The study emphasizes the requirement of dissemination of information regarding dengue fever and national health programs aimed at addressing the persistent issue of zoonotic diseases. Creating awareness about the preventive measures will ensure the reduction of the prevalence of the disease in the respective communities and instill a positive attitude among the masses towards healthcare measures. In contemporary times, social media can be leveraged for raising information (Amanah, M.A. et al, 2018). Awareness at the community level is imperative to promote holistic care and prevention of zoonotic diseases, because of which, reluctance would have spillover effects on economic and social life. The past spread of dengue fever in countries of South Asia, owing to high population density, lack of public healthcare measures, poor sanitation, and climatic conditions, among other factors, has proven detrimental impacts (Urmi et al, 2023); therefore, following preventive measures at the community level would minimize the outbreak of the disease and reduce the prevalence.

Conclusion

The study found that there is a need to intervene in the model of Knowledge, Attitude, Practice. The transition from the development of Attitude to conversion into Practice must be rigorously implemented. This would require the context of the Ottawa Charter for Health Promotion. The implementation of environmental modification to prevent risk factors of social behavior change communication. The enabling of individuals to continue the practice of health-seeking behaviors, which would in turn help in tackling the interface of the epidemiological triad. The preventive practices of use of bed nets, indoor residual spray and diffuser must be encouraged and monitored regularly. The collective enhancement of capacity among communities will also be encouraged if the capacity of social behavior change communication in health-seeking and healthcare seeking is enhanced among youth, which this study has dealt with. The implication for social sciences and business is the impact of positive health, health seeking behavior, healthcare seeking behavior on individual productivity and efficiency for the management and developmental perspective.

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