

Original Research

Knowledge, Attitudes, and Practices Regarding Disease Prevention among Patients Attending the Emergency Department of a Tertiary Care Hospital in Nepal

Hari Narayan Purbey^{1*}, Anil Kumar Shah², Mala Rijal³, Hemant Kumar sah⁴

¹Associate Professor, Department of General Practice and Emergency Medicine, Janaki Medical College, Janakpur, Nepal

²Assistant Professor, Department of Pediatrics, Janaki Medical College, Janakpur, Nepal

³Assistant Professor, Department of Nursing, Janaki Medical College, Janakpur, Nepal

⁴Assistant Professor, Department of Neurosurgery, Janaki Medical College, Janakpur, Nepal

Correspondence to:

Dr Hari Narayan Purbey

Department of General Practice and Emergency Medicine, Janaki Medical college, Tribhuvan University Nepal

Email: drhnpemgp@gmail.com

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ABSTRACT:

Background and Objectives: Knowledge, attitudes, and practices (KAP) related to health and disease influence community health, disease burden, and healthcare utilization. Assessing KAP, disease patterns, and sociodemographic characteristics helps to identify health-related behaviors and guide public health interventions. Thus, this study assessed these factors among patients attending the Emergency Department (ED) of Janaki Medical College Teaching Hospital.

Materials and Methods: A hospital-based cross-sectional study using convenience sampling was conducted in the (Emergency Department (ED) of Janaki Medical College Teaching Hospital from 15th April 2023 to 18th July 2023. Written or verbally informed consent was obtained from all participants. A pretested structured questionnaire was used to assess knowledge, attitudes, practices and prevention of diseases. Data were entered in Microsoft Excel 2010 and analyzed using SPSS version 20.

Results: A total of 400 ED patients were included. Most participants were from Dhanusha district (80.5%), belonged to the Yellow Triage category (61.25%), followed Hinduism (94.5%), and were from the Terai Madheshi Other Castes (62.5%). Tobacco use was reported by 25.5%, alcohol consumption by 11.75%, and 53.25% were literate. The most common clinical presentations were acute abdominal pain (18.75%), hypertension (10.0%), COPD (9.25%), and pneumonia (9.0%). Adequate knowledge, positive attitude, and appropriate health practices were observed in 95.8%, 60%, and 99.25% of participants, respectively. Disease occurrence and healthcare-seeking behavior were associated with tobacco use, alcohol consumption, belief in traditional healers, educational status, health-related ignorance, and culturally influenced accidental incidents. Most patients were admitted to the Observation Ward (53.0%).

Conclusion: Most ED patients demonstrated adequate knowledge and satisfactory health practices; however, positive attitudes were comparatively lower, highlighting the need for targeted health education and behavioural interventions.

Keywords: Knowledge; Attitude; Practice; Health; Disease; Positive Attitude; Negative Attitude.

INTRODUCTION

Disease is a condition in which normal body functions are impaired due to interactions among the host, agent, and environment, resulting in altered structure or function of the body [1,2]. Knowledge refers to the understanding and information acquired through education or experience, while attitude reflects an individual's beliefs, feelings, and predispositions toward health-related issues [2,3]. Together with behavioural practices, these components influence health-related decision-making and healthcare-seeking behaviour.

Communicable diseases remain a major public health challenge, particularly in low- and middle-income countries, where preventable infections such as malaria, HIV/AIDS, and dengue continue to contribute substantially to morbidity and mortality [2]. In Nepal, changing climatic conditions, rapid urbanization, and demographic transitions have altered the distribution of disease vectors, increasing the burden of vector-borne diseases, especially dengue fever [4,9]. Although progress has been made in dengue vaccine development, vaccines remain unavailable in Nepal and do not provide protection against all dengue virus serotypes [10,11]. Consequently, community participation, health education, and behaviour change communication remain essential strategies for disease prevention and control [12-14].

Knowledge, attitudes, and practices (KAP) play a crucial role in preventing disease transmission and improving health outcomes. Individuals with adequate knowledge are more likely to adopt positive attitudes and healthy practices, whereas poor awareness may contribute to unfavourable health behaviours [15]. KAP surveys have been widely used in public health since the 1950s to assess community awareness, beliefs, and practices, providing valuable evidence for planning, implementing, and evaluating health programs [16]. Previous studies in Nepal have demonstrated varying levels of knowledge, attitudes, and practices regarding communicable diseases, highlighting the need for continued assessment of community health behaviours [20-22].

The Global Burden of Disease (GBD) study emphasizes the importance of understanding disease patterns and their determinants for evidence-based public health planning.

Assessing disease patterns alongside the knowledge, attitudes, and practices (KAP) of the population provides a comprehensive understanding of community health and healthcare utilization. As part of a previously published study [23], this study further aimed to assess the disease patterns, sociodemographic characteristics, and KAP regarding health and disease among the study population.

MATERIALS AND METHODS

Study Area

The study was conducted in the ED of Janaki Medical College Teaching Hospital (JMCTH), Ramdaiya, Dhanusha, Nepal.

Study Design

A hospital-based descriptive cross-sectional observational study was conducted.

Study Population

The study population comprised patients presenting to the Emergency Department of Janaki Medical College Teaching Hospital during the study period.

Study Period

The study was conducted over four months from 15th April 2023 to 18th July 2023.

Sample Size

All eligible patients attending the Emergency Department during the study period were included in the study.

Sampling Technique

Participants were selected using a random sampling technique.

Data Collection Procedure

A hospital-based cross-sectional survey was conducted among patients presenting to the Emergency Department of JMCTH. Sociodemographic and clinical characteristics of all participants were recorded at presentation. Patients were diagnosed and managed according to standard treatment protocols. Those who achieved clinical stability after initial management were admitted to the appropriate inpatient departments for further treatment when indicated.

Before data collection, the objectives and purpose of the study were explained to all eligible participants. A structured, pretested questionnaire was used to assess participants' knowledge, attitudes, and practices (KAP) regarding health and disease. The questionnaire was pretested in a control-matched group to ensure its clarity, validity, reliability, and comprehensibility. Written and/or verbally informed consent was obtained before enrolment. Completed questionnaires were reviewed for completeness, coded, entered into Microsoft Excel 2010, and analyzed using SPSS version 20.

Inclusion Criteria

Patients presenting to the Emergency Department during the study period who were selected through random sampling and provided written and/or verbally informed consent were included.

Exclusion Criteria

Patients who declined to participate or did not provide written and/or verbal informed consent were excluded.

Ethical Considerations

Ethical approval was obtained from the Ethical Review Committee of Janaki Medical College, Ramdaiya, Dhanusha, Nepal, before commencement of the study (Ref. 40/079/080).

Informed Consent

Written and verbal informed consent was obtained from all eligible participants before enrolment. Participation was voluntary, and the confidentiality of participants' information was maintained throughout the study.

Operational Definitions

Knowledge

Knowledge was defined as the level of awareness and understanding regarding health and disease acquired through education, experience, observation, or learning. It was assessed using a structured questionnaire comprising 15 items related to disease concepts, prevention, and control. Each correct response was awarded one point, while incorrect responses received zero points, giving a maximum score of 15.

Knowledge was categorized according to Bloom's cut-off criteria[18]:

- Good knowledge: 80–100%
- Moderate knowledge: 60–79%
- Poor knowledge: <60%

Attitude

Attitude was assessed using a five-point Likert scale with the responses: Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. Responses were scored from 5 to 1, with higher scores indicating a more favourable attitude towards health and

disease prevention. The total attitude score was calculated by summing the scores of all questionnaire items.

Practices

Health-related behavioural practices were assessed using a structured scoring system and graded as follows:

- A+ (90–100%) – Outstanding
- A (80–89%) – Excellent
- B+ (70–79%) – Very Good
- B (60–69%) – Good
- C (40–59%) – Average
- D/E (<40%) – Needs Improvement/Poor

Statistical Analysis

The collected data were coded, entered into Microsoft Excel 2010, and analyzed using SPSS version 20.

RESULTS

A total of 400 participants were included in the study. The majority were from Dhanusha district (80.5%), followed by Mahottari (13.75%), while only a few were from Sarlahi (3.0%), Siraha (1.5%), and other districts (1.25%). Males accounted for 56.25% of the participants, and 94.5% were Hindus. Most participants belonged to a good socioeconomic status (95.25%), 53.25% were literate, and 2.0% reported a positive family history of disease. Terai Madheshi Other Caste (62.5%) constituted the largest caste group, followed by Janjati (15.5%).

According to triage classification, Yellow (61.25%) was the most frequent category, followed by Red (30.5%), Green (7.75%), and

Table 1: General Characteristics of Patients

Characteristics	No	%	Particulars	No	%
Geographical areas			Triages		
Dhanusha	322	80.5	Yellow	245	61.25
Mahottari	55	13.75	Red	122	30.5
Siraha	6	1.5	Green	31	7.75
Sarlahi	12	3.0	Black	2	0.5
Others	5	1.25	Occupation		
Gender			Housewife	95	23.25
Male	225	56.25	Retired	73	18.25
Female	175	43.75	Student	61	15.25
Religion			Farmer	57	14.25
Hindu	378	94.5	Business	48	12.0
Muslim	21	5.25	Household worker	24	6.0
Christian	1	0.25	Play group	14	3.5
Socioeconomic status			Baby	8	2.0
Good	381	95.25	Others	25	6.25
Poor	19	4.75	Marital status		
Caste-wise distribution			Married	291	72.75
Terai Madeshi Other Caste	250	62.5	Unmarried	109	27.25
Janjati	62	15.5	Comorbidity		
Brahmin	30	7.5		37	9.25
Dalit	28	7.0	Tobacco concerning		
Muslim	18	4.5	Tobacco consumer	102	25.5
Chhetri	10	2.5	Tobacco non-consumer	282	70.5
Newar	2	0.5	Ex- tobacco consumer	16	4.0
Literate Patients			Traditional healer without use of Ayurvedic drugs	126	31.5
Family Positive history disease			Alcohol consumer	47	11.75

Black (0.5%), indicating that most patients presented with conditions requiring urgent but not immediate life-saving interventions. Regarding occupation, housewives (23.25%) were the largest group, followed by retired individuals (18.2%), students (15.25%), farmers (14.25%), and businesspersons (12.0%). Nearly three-fourths of the participants were married (72.75%), while 9.25% were of comorbidity. In terms of lifestyle characteristics, 25.5% were current tobacco consumers, 4.0% were former tobacco users, 11.75% consumed alcohol, and 31.5% reported seeking care from traditional healers without the use of Ayurvedic drugs as shown in table 1. This indicates that traditional healthcare practices remain a substantial proportion of the study population.

Table 2 depicts the spectrum of diseases among patients presenting to the emergency department. Among the 400 participants, acute abdominal pain was the most common diagnosis, affecting 75 patients (18.75%). This was followed by hypertension in 40 patients (10.0%), COPD in 37 patients (9.25%), and both pneumonia and acid pepsin disorder (APD) in 36 patients (9.0%). Other frequently encountered conditions included enteric fever in 19 patients (4.75%), acute gastroenteritis (AGE) in 15 patients (3.75%), and psychosis, cerebrovascular accident (CVA), and myocardial infarction (MI), each affecting 11 patients (2.75%). Diabetes mellitus was observed in 10 patients (2.5%), while poisoning was reported in 8 patients (2.0%).

Table 2: Spectrum of Diseases Among Patients Presenting to the Emergency Department (n=400)

Diseases	No	%	Diseases	No	%
Acute pain abdomen	75	18.75	Conversion disorder	4	1.0
Hypertension	40	10.0	Bronchiectasis	4	1.0
COPD	37	9.25	IHD	3	0.75
Pneumonia	36	9.0	UTI	3	0.75
APD	36	9.0	CLD	3	0.75
Enteric fever	19	4.75	PID	3	0.75
AGE	15	3.75	RA	3	0.75
Psychosis	11	2.75	Panic disorder	2	0.5
CVA	11	2.75	Pancreatitis	2	0.5
MI	11	2.75	Substance abuse	2	0.5
DM	10	2.5	Viral fever	2	0.5
Poisoning	8	2.0	Asthma	2	0.5
OP Poisoning	4	1.0	Piles	2	0.5
Amitriptyline poisoning	1	0.25	Bronchiolitis	2	0.5
Phenol poisoning	1	0.25	Burn	2	0.5
Copper sulphate poisoning	1	0.25	Globus pharyngeus	1	0.25
Cypermethrin poisoning	1	0.25	Alcohol intoxication	1	0.25
PTB	5	1.25	Meningitis	1	0.25
Cholelithiasis	5	1.25	DKA	1	0.25
Epistaxis	5	1.25	CRF	1	0.25
Pleural effusion	5	1.25	Neurocysticercosis	1	0.25
Acute cholecystitis	5	1.25	Hernia	1	0.25
Febrile convulsion	4	1.0	Choledocholithiasis	1	0.25
Hypotension	4	1.0	Hydatid cyst in liver	1	0.25
PV Bleeding	4	1.0	AOM	1	0.25
Bee sting	4	1.0	Ca stomach	1	0.25

Less common conditions included pulmonary tuberculosis, cholelithiasis, epistaxis, pleural effusion, and acute cholecystitis, each reported in 5 patients (1.25%). The remaining medical and surgical conditions, including respiratory, cardiovascular, neurological, gastrointestinal disorders, and substance abuse, were each $\leq 1.0\%$ as shown in table 2.

Table 3 depicts the department-wise disposition of patients from the Emergency Department. More than half of the patients were managed in the observation ward, with 212 patients representing 53.0% of the total. Among those admitted to Internal Medicine received the highest number of patients, with 55 patients accounting for 13.75%, followed

by the ICU with 40 patients accounting for 10.0% and Surgery with 34 patients accounting for 8.5%, Psychiatry comprised 20 patients or 5.0%, while Orthopedics, Pediatrics, and Gynecology received 13 patients (3.25%), 10 patients (2.5%), and 7 patients (1.75%), respectively. Only a few patients were admitted to the NICU, with 5 patients (1.25%), Dental and ENT departments with 2 patients or 0.5% each.

Table 4 depicts participants' knowledge regarding disease patterns. Correct responses were 100% for the role of a balanced diet, exercise, disease signs and symptoms, epidemics, sewage contamination, disinfectants, and food adulteration. Knowledge was also high regarding air

pollution (96%), sanitary barriers (93%), reservoirs of infection (92%), food- and water-borne diseases (89%), and disease carriers (87%). However, only 57% correctly identified the host-agent-environment triad, and 32% were aware of the food attack rate calculation, representing the lowest level of knowledge.

Table 3: Department-wise distribution of Patients admitted or referred from the Emergency Department (n=400)

Departments	No	%
Observation ward	212	53
Internal medicine	55	13.75
ICU	40	10
Surgery	34	8.5
Psychiatry	20	5
Orthopedics	13	3.25
Pediatric	10	2.5
Gynecology	7	1.75
NICU	5	1.25
Dental	2	0.5
ENT	2	0.5

Table 5 depicts the attitudes of participants toward disease prevention and health-related practices. All participants strongly disagreed (100%) with the consumption of unhealthy

animal milk and meat and the use of expired food. A majority of participants agreed or strongly agreed with awareness of vectors and animals (80%), the availability of a water source at least 50 feet from a latrine (79%), and participation in health camps (60%). Most participants also disagreed or strongly disagreed with the accidental consumption of partially cooked food (57%) and the long-term storage of raw food (67%). Regarding vegetables freshly sprayed with insecticides, 60% of participants remained neutral, while 37% disagreed or strongly disagreed. Responses toward hotel food consumption, roasted food intake, use of chemical preservatives, cooking with smoky fuel, early medical consultation, and residential sanitation were distributed across all response categories, indicating varied attitudes among participants.

Table 6 depicts participants' practices related to disease prevention and hygiene. Good practices were observed for personal hygiene, use of wholesome water, and avoiding crowded rooms, with 100% adherence. Nearly all participants practised hand

Table 4: Knowledge of the Study Participants Regarding Disease Causation, Transmission, and Prevention (N = 400)

Knowledge	No.	(%)
Disease factors need host, agent and environment	228	57
Balance diet makes a person healthy	400	100
Defence capacity of the body is immunity	296	74
Exercise modifies physiological processes	400	100
Generally diseases produce symptoms and signs	400	100
Carrier transmits diseases to healthy person	348	87
Epidemic means more than usual no of patients	400	100
Contamination of sewage to food brings disease	400	100
Sanitary barrier stops transmission of diseases	372	93
Disinfectant harms organism	400	100
There are food and water borne diseases	356	89
Air pollution brings about diseases	384	96
Reservoir is the source of infection	368	92
Adulteration of food is harmful to health	400	100
Calculation of food attack rate is known	128	32

washing before meals and after toileting (99.0%), maintained hygiene of salad-cutting equipment (99.0%), washed fresh fruits and

vegetables under running water (98.25%), and disposed of garbage properly (98.5%).

Table 5. Attitudes of the Study Participants Toward Disease Prevention and Healthy Practices (N = 400)

Attitude	Strongly agree n(%)	Agree n(%)	Neutral n(%)	Disagree n(%)	Strongly disagree n(%)
Interest of food intake in any hotel	80(20)	128(32)	32(8)	80(20)	80(20)
Habit of consumption of roasted food	120(30)	88(22)	112(28)	64(16)	32(8)
Accidental exposure to partially cooked food	40(10)	92(23)	40(10)	40(10)	188(47)
The use of vegetables freshly sprayed insecticides	8(2)	4(1)	240(60)	108(27)	40(10)
Long storage of raw food eg. Rice, bitten rice, flour, fruits etc	20(5)	41(8)	80(20)	72(18)	196(49)
Awareness of vectors and animals	128(32)	192(48)	40(10)	24(6)	16(4)
Consumption of unhealthy animals' milk and meat	0	0	0	0	400(100)
Availability of water source near latrine at least 50 feet	156(39)	160(40)	80(20)	4(1)	0
Use of food mixed with chemical preservative	36(9)	80(20)	108(27)	132(33)	44(11)
Use of expiry dated food	0	0	0	0	400(100)
Residential living less than 50 feet to toilet	44(11)	148(37)	88(22)	100(25)	20(5)
Cooking food with smoky fuel	112(28)	64(16)	120(30)	24(6)	80(20)
Visit Doctor for early sign and symptoms	40(10)	120(30)	92(23)	60(15)	88(22)
Interest of participation in health camp	32(8)	208(52)	40(10)	60(15)	60(15)
Living with poor pollution	20(5)	120(30)	148(37)	188(22)	24(6)

Table 6. Disease prevention and hygiene practices among the study Participants (N = 400)

Practices	Failure n (%)	Practice n (%)
Hand washing for 20 seconds before food intake and after toileting	4 (1.0)	396 (99.0)
Hygiene of equipment used for salad cutting	4 (1.0)	396 (99.0)
Washing fresh fruits and vegetables under running water	7 (1.75)	393 (98.25)
Use of gown and coat during cooking	377 (94.25)	23 (5.75)
Keeping cooked food at 4–10°C	400 (100.0)	0 (0.0)
Sanitation of water storage, shallow dug wells, and areas around the kitchen and latrine	267 (66.75)	133 (33.25)
Proper disposal of garbage	6 (1.5)	394 (98.5)
Personal hygiene	0 (0.0)	400 (100.0)
Use of wholesome water	0 (0.0)	400 (100.0)
No crowded room	0 (0.0)	400 (100.0)

DISCUSSION

This study assessed the knowledge, attitudes, and practices (KAP) of patients regarding diseases and their prevention in Dhanusha district, where similar studies are scarce. Disease is defined as an impairment of normal body function resulting from the interaction of the host, agent, and environment [1]. In Nepal, Emergency Department utilization is influenced by demographic, socioeconomic, and geographic factors, with males contributing to a greater proportion of visits because of occupational exposure and the increasing burden of non-communicable diseases [24].

In this study, most participants were from Dhanusha (80.5%) and Mahottari (13.75%), making the findings mainly representative of these districts. In the present study, 96.8% of participants had good knowledge, which was higher than previous Nepalese reports [21,24]. Previous Nepalese studies on dengue [4,21], COVID-19, and cardiovascular diseases have reported good knowledge ranging from 55.5% to 77.15%, positive attitudes from 30.7% to 65.8%, and good practices from 56.2% to 81.3%. This may be related to the high proportion of participants with good socioeconomic status (95.25%), literacy (53.25%), and married status (72.75%). However, tobacco use (25.5%), alcohol consumption (11.75%), and consultation with traditional healers (31.5%) indicate the persistence of health-risk behaviours. However, the continued presence of tobacco use, alcohol consumption, and reliance on traditional healers suggests that knowledge may not always translate into healthy practices.

Overall, in the present study, participants revealed a 60% positive attitude, while 40%

reveals negative attitude in the scenario of 56.7% of participants demonstrated a positive attitude, 15.5% had neutral responses, and 45.0% showed negative attitudes toward some health-related practices, findings that are generally comparable with previous Nepalese studies [20,21,25]. The variation in attitudes may be related to differences in participants' sociodemographic characteristics, health experiences, access to health information, and cultural beliefs.

Nearly all participants (99.25%) demonstrated good preventive practices, although deficiencies remained in safe food storage and the use of protective clothing during cooking. This may be because participants were generally aware of preventive measures but did not consistently apply them in their daily household practices. The five most common diseases were acute pain abdomen (18.75%), hypertension (10.0%), COPD (9.25%), pneumonia (9.0%), and acid-pepsin disorder (9.0%). More than half of the patients were managed in the Emergency Observation ward, followed by the Internal Medicine, ICU, and Surgery departments. This pattern may reflect the high proportion of patients presenting with acute or potentially serious conditions requiring immediate assessment, observation, and early management.

These findings highlight the need for continued health education, disease prevention programs, and strengthening Emergency and inpatient services through adequate infrastructure and trained healthcare personnel to improve patient outcomes and reduce morbidity and mortality. However, this was a single-centre, cross-sectional study; therefore, the findings

may not be generalizable to the wider population, and causal relationships could not be established.

CONCLUSIONS

Most Emergency Department patients, predominantly from Dhanusha district and classified as yellow triage, demonstrated good knowledge and excellent preventive practices regarding diseases. However, both positive and negative attitudes were observed, indicating the need to improve health-related attitudes despite adequate knowledge. Knowledge, attitudes, and practices were associated with socioeconomic status, literacy, age, marital status, education, and occupation. Strengthening community-based health education, behavioural counselling, and awareness programs, along with improving emergency and inpatient services, may further enhance disease prevention and patient outcomes.

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AUTHOR'S CONTRIBUTION:

Conceptualization, methodology, data collection, data analysis, and drafting of the manuscript-**HNP**; data collection, data analysis, and critical revision of the manuscript-**AKS**; study design, data interpretation, and critical revision of the

manuscript-**MR**, **HKS**; supervision, interpretation of findings, and critical revision of the manuscript-**HNP**. All authors read and approved the final manuscript.

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