

KNOWLEDGE, ATTITUDE AND PRACTICE OF MALARIA AMONG GENERAL POPULATION OF NAWABSHAH

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Abstract

Background: Malaria is a major public health problem in Pakistan, causing high morbidity and mortality. Across the world malaria causes between 300-500 million cases every year leads to million. Understanding knowledge, attitudes, and practices (KAP) is essential for effective prevention and control.

Objective: This study assessed the knowledge, attitudes, and preventive practices toward malaria among the general population of Nawabshah.

Methods: A descriptive cross-sectional study was conducted among 275 participants from the general population of Nawabshah at Department of medicine at people's medical civil hospital Nawabshah. The questionnaire covered demographics information as well as respondent knowledge, attitudes, and practices regarding malaria. The data were collected and analyzed using SPSS version 25 Frequencies, Percentage determined.

Results: The mean age of participants was 36.72 ± 12.31 years, with 63.6% males and 56% residing in rural areas. Most respondents were married (76.4%) and Muslim (85.8%).the mean size of respondent family size is 10.79 with SD =4.443.The most of the respondent were rural 154(56.00%) and 121(44.00%).Most of the respondents were Sindhi 173(62.9%). The most of the respondent were illiterate 136(49.45%) most of the respondent have middle class 143(52.0%).The most of the respondent occupation is farmer 72(26.2%). Knowledge about malaria was Average to good, with 62.5% identifying fever as a symptom and 75.3% recognizing mosquito bites as the main transmission mode. Positive attitudes were observed in 86.55% of respondents. However, preventive practices were inadequate, with 51.27% showing poor practices. Barriers included low socioeconomic status, lack of affordability, and limited awareness of proper preventive measures.

Conclusion: While knowledge and attitudes toward malaria were generally positive, actual preventive practices were insufficient. Strengthening health education, improving access to affordable preventive tools, and promoting proper

INTRODUCTION

It is a major Public Health problem not only harm people's health but also costing a lot of money. Across the world malaria causes between 300-500 million cases every year leads to million Death. Malaria is a endemic disease that is spread through the bite of female Anopheles mosquito, It causes high rates of illness and death, Several studies have been carried out to assess peoples knowledge attitude practices about malaria in different parts of the country. The observational study was conducted in Zambia result reveled that many peoples have misunderstanding about disease, 72% Participants believed that Malaria spread through contact with sick patient. Additionally Negative Attitude were common 72% Bad practice Were also high 56%.

Malaria parasite have five species to cause the malaria Plasmodium malaria, Plasmodium ovale, Plasmodium vivax, Plasmodium falciparum, Plasmodium knowlesi. The observational study was conduct in KPK (Khyber Pakhtun khwa) the result reveled that individuals age 26-35 years were most affected by malaria Additionally 72% of participants were employed, 56% considered avoiding outdoor sleeping important, while 43% >47 used bed nets or indoor spraying. Some peoples don't use the mosquito net or spray because all have lack of knowledge about the practice with are used to control malaria progress, Some practices which are very preventable is to sleeping under the mosquito nets LLINS (long lasting insecticidal nets) and IRS (Indoor Residual Spraying). Knowledge, Attitude, and practice studies look what people know how they feel and what they do about malaria they help to better program at made for disease control, In 2021, the World Health Organizing (WHO) state that almost half of the world's population was at risk of malaria with 247 million documentary cases 619000 deaths globally,

making malaria most common infectious disease in tropical and sub-tropical countries .

Assessment on knowledge, Attitude and practices of malaria are used to collect useful information for malaria control and prevention, they help to confirm communities are involved, support, and ready to follow healthy practices. Malaria remains a major public health problem worldwide, in 2020, 241 million reported cases and 627000 deaths globally. This study is conducted to understand the knowledge, Attitude and practice of communities toward the malaria. More knowledge about malaria prevention and practices can reduce the malaria cases. In October 2023, the world health organization (WHO) updates its guidance on malaria prevention it recommended two vaccine for preventing malaria in children living in areas where disease is common , RTS,S/AS01 first malaria vaccine advised by WHO in October 2021 and the second vaccine R21/Matrix -M newly advised by WHO in October 2023.

MATERIAL METHODS:

This study is descriptive cross-sectional design was conducted to Assess the Knowledge, Attitude and practices of malaria among general population of Nawabshah was taken in Department of Medicine at Peoples Medical Civil Hospital Nawabshah. Data collection was over within 2 months 17 November to 17 January after approval of Institutional Review Board (IRB) sample size was 275 calculated by using Cochran's formula the calculation is based on 95% confidence level, a stratified non-probability sampling was used to select the participants the inclusion criteria included both genders and individuals who willing to participate and age between 10 to 70 years. Those who agreed to sign informed consent. Exclusion criteria included individuals with cognitive disorder and Hearing impairment those who did not consent to participant.

RESULTS

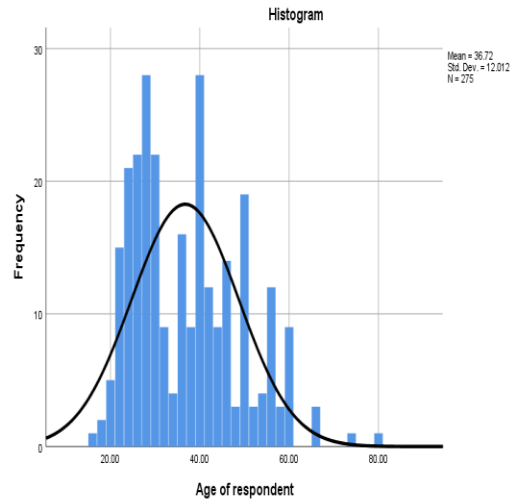


Figure 1: Age of Respondents

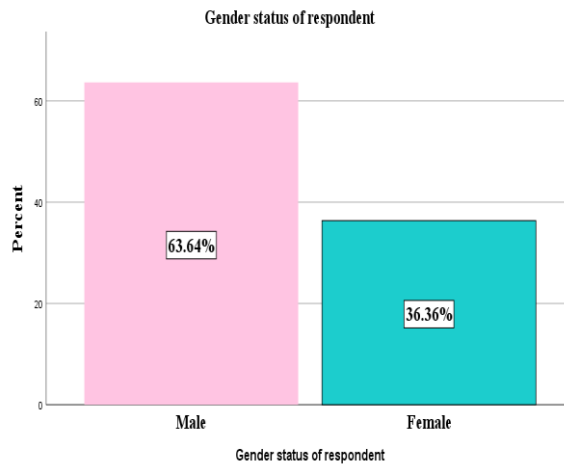


Figure 2: Gender of Respondents

Table no 1: Marital status of respondent

Status	Frequency	Percentage%
Single	61	22.2%
Married	210	76.4
Divorce	4	1.5
Total	275	100.0%

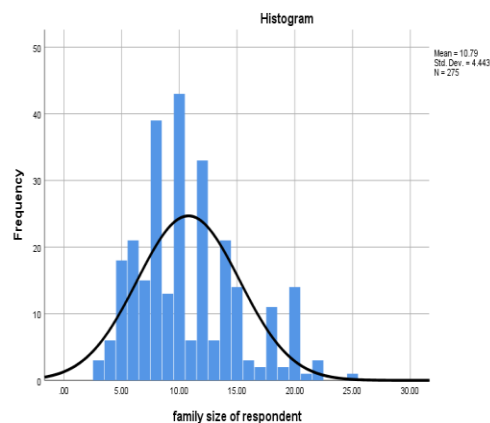


Figure 3: Family size of Respondent

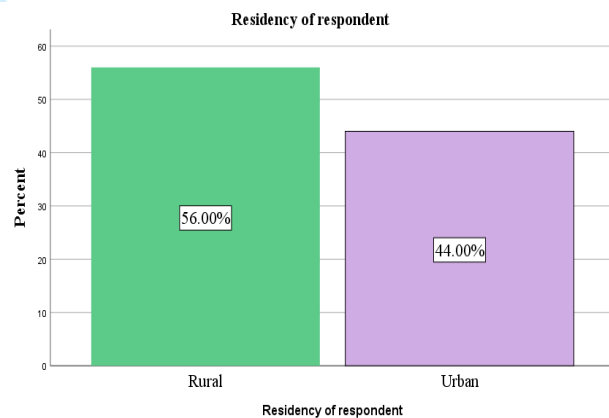


Figure 4: Residence of Respondents

Table no 2: Religion of Respondent

Religion	Frequency	Percentage%
Islam	236	85.8%
Hindu	39	14.2%
Total	275	100.0%

Table no 3: Ethnicity of Respondent

Ethnicity	Frequency	Percentage %
Punjabi	55	20.0%
Sindhi	173	62.9%
Balochi	21	7.6%
Other	26	9.5%
Total	275	100.0%

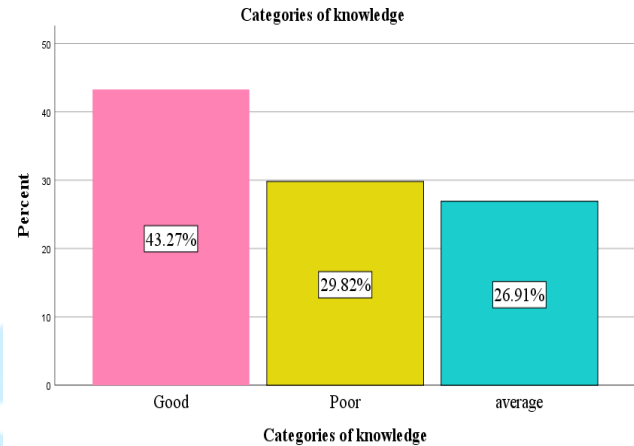
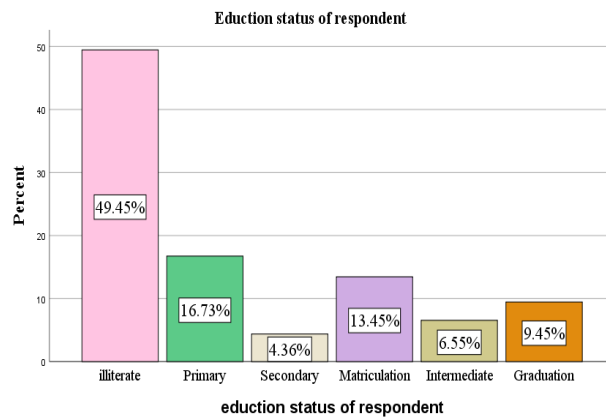


Figure 5: Education status of respondent

Figure 6: Categories for Knowledge

Table no 4: Economic status of respondent

Status	Frequency	Percentage%
Poor class	125	45.5%
Middle class	143	52.0%
Rich class	7	2.5%
Total	275	100.0%

Table no 5: Occupation of respondent

Status	Frequency	Percentage%
Farmer	72	26.2%
Carpenter	2	.7%
Shopkeeper	35	12.7%
Other	166	60.4%
Total	275	100.0%

Table no: 6: Signs and symptoms of malaria

What are the sign and symptoms of malaria?	Frequency	Percentage
Fever	172	62.5%
Headache	71	25.8%
Loss of appetite	11	4.0%
Weakness	21	7.6%
Total	275	100.0%

Table no: 7: Malaria transmission

Can malaria transmit from person to person?	Frequency	Percentage
Yes	80	29.1%
No	135	49.1%
Do not Know	60	21.8%
Total	275	100.0%

Table no: 8: How malaria is transmitted

How is malaria transmitted?	Frequency	Percentage
Mosquito bite	207	75.3%
Patients contact	41	14.9%
Hot environment	12	4.4%
Poor Hygiene	15	5.5%
Total	275	100.0%

Table no: 9: Mosquito breeding sites

Where mosquitoes do breeds?	Frequency	Percentage
Marshy areas	60	21.8%
Stagnant water	191	69.5%
Discarded material	24	8.7%
Total	275	100.0%

Table no: 10: When mosquito mostly bite.

When do mosquitoes mostly bite?	Frequency	Percentage
Days	7	2.5%
Night	131	47.6%
Does not Know	38	13.8%
Equally day and night	99	36.0%
Total	275	100.0%

Table no: 11: Prevention methods

What preventive method do you know?	Frequency	Percentage
Anti-mosquito spray	130	47.3%
Mosquito Net	130	47.3%
Drainage of stagnant water	10	3.6%
Visit health care center	5	1.8%
Total	275	100.0%

Table no: 12: Reason for not using protective measure

What might be the reasons for not using any protective methods?	Frequency	Percentage
Not Affordable	126	45.8%
Not Available	70	25.5%
Not aware of its use	79	28.7%
Total	275	100.0%

Table no: 13: Attitude of respondent regarding malaria

Questions	Agree	S.Agree	Disagree	S.disagree
Malaria is a serious and life threatening disease?	49(17.8%)	195(70.9%)	6(2.2%)	25(9.1%)
Malaria can transmit from person to person as with other communicable disease?	18(6.5%)	144(41.5%)	27(9.8%)	116(42.2%)
The best way to prevent getting malaria is to avoid getting mosquito bite?	57(20.7%)	181(65.9%)	21(7.6%)	16(5.8%)
Sleeping under mosquito net at night is one way to prevent getting malaria?	73(26.5%)	171(62.2%)	17(6.2%)	14(5.1%)
Malaria is a greater risk for children, pregnant women, and persons with malnutrition?	86(31.3%)	160(58.2%)	23(8.4%)	6(2.2%)
Working and sleeping overnight in the garden or forest might out one at greater risk of getting malaria?	98(35.6%)	140(50.9%)	27(9.8%)	10(3.6%)
I might be at greater risk of getting malaria if I don't fully cover my body during the night?	98(35.6%)	149(54.2%)	23(8.4%)	5(1.8%)

Table no: 14: Practice of respondents regarding malaria

Question	Every time	Some time	Never
How often do you sleep in a mosquito net?	149(54.2%)	97(35.3%)	29(10.5%)
How often do others members of the household sleep in mosquito net?	145(52.7%)	94(34.2%)	36(13.1%)
How often do you check for holes/repair mosquito net?	53(19.3%)	183(66.5%)	39(14.2%)
How often do you clean/cut bushes around your house?	44(16.0%)	156(56.7%)	75(27.3%)
How often do you drain stagnant water near your house?	64(23.3%)	140(50.9%)	71(25.8%)
How often do you wear clothes that cover all your body during nighttime?	177(64.4%)	80(29.1%)	18(6.5%)
How often do you use mosquito-repellent coils in your house?	54(19.6%)	159(57.8%)	62(22.5%)
How often do you use anti-mosquito spray in your houses?	52(18.9%)	106(38.6%)	117(42.5%)

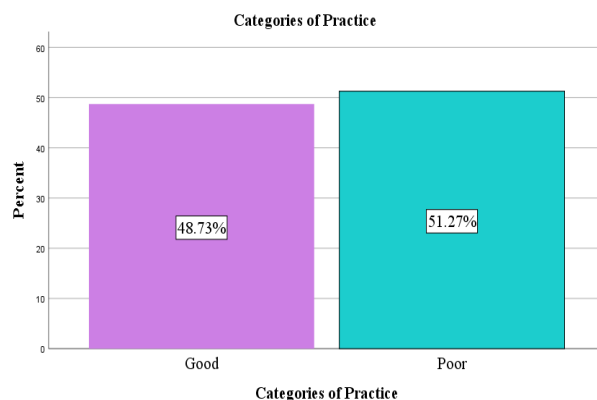


Figure 6: Categories of practice

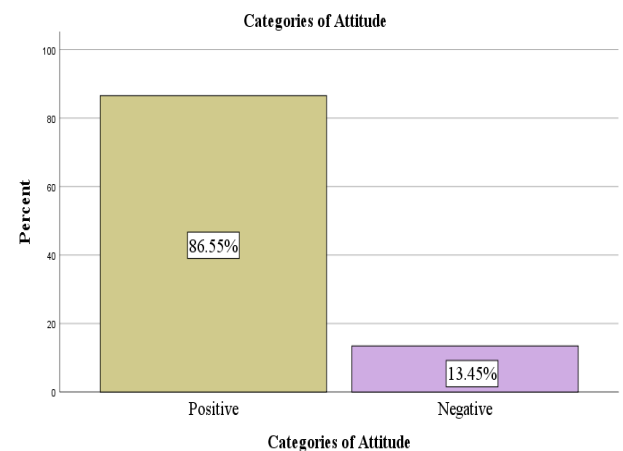


Figure 7: Categories of Attitude

DISCUSSION:

Regarding the demographic characteristics of this study, the mean age of respondents was 36.72 ± 12.31 years. This age distribution is comparable with findings from a community-based study conducted in Bahawalnagar, Pakistan, where the majority the mean age of respondents was 34.6 ± 11.8 years. The results show that 175(63.6%) of respondents were male, while 100(36.6%) were female. Comparable gender distributions were observed in studies conducted in Lahore and Khyber Pakhtunkhwa, Pakistan, where males represented a higher proportion of participants. The marital status of the respondent shows that majority of respondents were married 210 (76.4%), 61 (22.2%) were single and 4(1.5%) were divorce. A community based study conduct in Ghana reported that married individual were more likely to participant in malaria prevention activities and showed better health seeking behavior compared to unmarried participants. The mean family size of respondent was (10.79 ± 4.44), Comparable findings were reported in rural Pakistani and African studies, where larger household sizes were linked with inconsistent use of mosquito nets and other preventive measures. The residential status shows that 154(56.0%) resided were rural areas, while 121 (44.0%) were urban resided. Similar rural dominance has been documented in studies from flood-affected areas of Rajanpur and rural Ghana. The results shows that majority of respondents were Muslims 236 (85.8%) while 39 (14.2%) were non-Muslims. Similarly study Religion may indirectly affect health-seeking behavior and preventive practices, as reported in regional KAP studies. The most respondents were Sindhi 173 (62.9%), and 55 (20.0%) were Punjabi while 21 (7.6%) were Balochi and other ethnic 26 (9.5%). Similar ethnic variations were observed in studies conducted in Sindh province, where cultural beliefs and traditional practices influenced malaria prevention behaviors. The results revealed that majority of respondents 136(49.45%) being illiterate. Studies from Ghana and Tanzania also confirmed that higher education levels were significantly associated with better malaria knowledge and practices. In terms of economic status, most respondents were the

middle class 143 (52.0%), 125 (45.5%) were in poor class while only a small part were classified as rich (2.5%). Similar associations between low socioeconomic status and poor malaria preventive practices have been reported in Pakistan and other low-income countries. The most of the respondent occupation were in farming 72 (26.2%) and 166(60.0%) respondent have unknown while 35(12.7%) were shopkeeper and 2(.7%) were carpenter. This finding is consistent with studies from rural Pakistan and Tanzania, where agricultural workers demonstrated higher malaria risk and variable preventive practices.

In the present study, knowledge regarding malaria was establish to be average to good. Most respondents properly identified fever 172 (62.5%) as a key symptom and mosquito bite 207 (75.3%) as the major mode of malaria transmission. However, misunderstandings remained, as a large part believed malaria could be transmitted from person to person or were unsure. Likewise, a study conducted in flood-affected areas of Rajanpur reported that although most participants recognized mosquitoes as vectors, misconceptions regarding malaria transmission and breeding sites were common. The attitude toward malaria, the majority of respondents (86.55%) have positive attitude. Most participants strongly agreed that malaria is a serious and life-threatening disease and that preventive measures such as avoiding mosquito bites and sleeping under mosquito nets are effective. These findings are consistent with a study conducted in rural Ghana, where respondents showed positive attitudes toward malaria prevention and perceived malaria as a serious illness. The results show that practices were bad. More than half of respondents (51.27%) revealed bad practices. Although mosquito net use was reported by many respondents, other practices such as draining stagnant water, repairing mosquito nets, cleaning surrounding bushes, and using mosquito repellents were inconsistently practiced. Similarly, a study from Khyber Pakhtunkhwa reported that while awareness of preventive measures was high, actual utilization of insecticide-treated nets and environmental control measures remained low. In the present study, the main reasons for not using protective measures

were lack of affordability, non-availability, and lack of awareness regarding proper use. These findings are consistent with a study conducted in Bahawalnagar, which highlighted financial constraints as a major barrier to effective malaria prevention, even among knowledgeable individuals. Overall, the findings of study suggest that although respondents in Nawabshah possess relatively good knowledge and positive attitudes toward malaria, practices remain inadequate. Similar trends have been observed in other malaria-endemic regions, indicating that improving malaria outcomes requires not only increasing awareness but also addressing socioeconomic and accessibility barriers through targeted public health interventions.

CONCLUSION:

Malaria continues to be a major public health problem in malaria-endemic regions, including Pakistan. This study was conducted to assess the knowledge, attitude, and practices (KAP) related to malaria among the general population of Nawabshah. The results of the study showed that the overall knowledge of respondents regarding malaria was average to good. A majority of respondent correctly identified mosquito bites as the primary mode of malaria transmission and known fever as the most common symptom of the disease. However, even with this general awareness, misunderstandings were still present, as a notable part of respondents believed that malaria could be transmitted from person to person or were uncertain about mosquito breeding sites. These misunderstandings indicate the need for more targeted and accurate health education programs.

Regarding attitudes toward malaria, the majority of respondents have a positive attitude. Most participants measured malaria to be a serious and life-threatening disease and strongly agreed that preventive measures such as avoiding mosquito bites and sleeping under mosquito nets are effective. Even with satisfactory knowledge and positive attitudes, the study revealed that preventive practices were mostly poor. More than half of the respondents showed poor malaria prevention practices. Although many participants

reported using mosquito nets, other important preventive behaviors—such as regular cleaning of surroundings, draining stagnant water, repairing mosquito nets, and consistent use of mosquito repellents and sprays were practiced irregularly or not at all. This clearly shows a gap between knowledge and actual practice.

The study also identified key barriers to effective malaria prevention, including lack of affordability, limited availability of preventive tools, and insufficient awareness regarding the proper use of protective measures. Socio-demographic factors such as low educational level, rural residence, large family size, low socioeconomic status, and occupations related to agriculture further contributed to poor preventive practices and increased vulnerability to malaria.

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