

**ORIGINAL RESEARCH ARTICLE****KNOWLEDGE REGARDING SCRUB TYPHUS AMONG NURSES AT A TEACHING HOSPITAL IN CHITWAN**Pradeepti Gautam¹, Sunita Poudyal^{1*}¹ College of Nursing, Chitwan Medical College, Bharatpur, Chitwan, Nepal***Correspondence to:** Ms. Sunita Poudyal, College of Nursing, Chitwan Medical College, Bharatpur-10, Chitwan, Nepal. Email: Poudyalsuneeta@gmail.com**ABSTRACT**

The incidence of scrub typhus is increasing steadily with evidence of multi organ dysfunction. Lack of knowledge among health personnel may lead to under diagnosis and improper treatment of scrub typhus. Hence, this study was undertaken to find out the knowledge regarding scrub typhus among nurses. A descriptive cross-sectional research design was used and a total 107 nurses were selected by probability, simple random sampling through lottery method. Data was collected using semi-structured self administered questionnaire. Obtained data was entered in IBM SPSS version 20.0 for window. Descriptive statistics was used for categorical and continuous variables and x2 test was used to find out the association between level of knowledge and selected variables. The result of the study shows that 58.9% of the respondents were in the age group of 20-23 years, 69.2% had completed PCL nursing, 50.5% had less than 2 years of work experience, and 64.5% had been working in critical area. More than half (55.1%) of the nurses had adequate level of knowledge regarding scrub typhus and the level of knowledge regarding scrub typhus was influenced by professional qualification ($p=0.001$) and self directed learning ($p=0.010$). The study concluded that nearly half of the nurses have inadequate knowledge regarding scrub typhus. Therefore, in-service education is needed for the nurses to build up their capacity for the proper management and prevention of disease

Key words: Knowledge, Nurses, Scrub typhus**INTRODUCTION**

Scrub typhus is an acute, febrile, infectious illness caused by *Orientia tsutsugamushi*, transmitted to humans through bites of the trombiculid mites.¹ The vector of scrub typhus is present in most countries of the South-East Asia Region and is endemic in certain geographical regions of India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka and Thailand.² Twenty two districts of Nepal are affected from scrub typhus. Most of the cases are found in Terai and some others in mid-hill. Of them, Chitwan is highly prone district for the disease.³

Scrub typhus affects people of all ages.⁴ However, people living at the edge of the village, living in the

houses near grassland, vegetable field, house yard without cement floor, working in vegetable fields and hilly areas, and harvesting in autumn have higher risks for scrub typhus.⁵

Patients with scrub typhus often presents with fever. Skin hyperaemia, headache, lymphadenopathy and hepatomegaly are the other features of scrub typhus. An eschar was found in 61.7% of cases⁶ The disease is difficult to differentiate clinically from other infections, such as leptospirosis and dengue.⁷ Non-specific presentation and lack of characteristic eschar leads to misdiagnosis and under reporting of scrub typhus. Further, non-availability of diagnostic

facilities makes more difficult to correctly diagnose and treat.⁸

Patients with scrub typhus suffers from many clinical complications and the most common complication is pulmonary.⁹ About one third of patients admitted to hospital with scrub typhus infection have evidence of organ dysfunction that may include respiratory failure, circulatory shock, mild renal or hepatic dysfunction, central nervous system involvement or hematological abnormalities.¹⁰

For the prompt diagnosis and timely treatment, all level of health workers need to be aware about clinical features, available diagnostic tests and their interpretation and the therapy of the scrub typhus. One study in India reported that the theoretical knowledge of scrub typhus is reasonably good among the health care personnel but their experience with management and control of the disease is minimal.¹¹ Studies related to scrub typhus are limited in Nepal. Hence, this study was undertaken to assess the knowledge regarding scrub typhus among nurses.

METHODS

A descriptive cross-sectional research design was used to find out knowledge regarding scrub typhus among nurses working in different units of Chitwan Medical College Teaching Hospital, Bharatpur. A total 107 nurses were selected for the study using simple random sampling technique through lottery method. Those nurses who were working at administrative level and nursing supervisors were excluded from the study. Data were collected from 3/10/2016 to 16/10/2016 using pre-tested semi-structured self administered questionnaire.

Prior to data collection, ethical approval was obtained from Chitwan Medical College Institutional Review Committee and data collection permission was taken from Chitwan Medical College Teaching Hospital. Written informed consent was also obtained from each respondent.

The collected data was checked, reviewed and organized daily for its accuracy, completeness and consistency. The data was entered in IBM SPSS version 20.0. Descriptive statistics such as frequency, percentage, mean and standard deviation was used for the socio-demographic and knowledge related items and inferential statistics (χ^2 test) was used to find out the association between variables.

RESULTS

More than half (58.9%) of respondents were in the age group of 20-23 years with the mean age 22.67(SD±2.479) years, where minimum age was 19 years and maximum age was 31 years. More than two third (69.2%) of respondents had completed PCL nursing, half (50.5%) of the respondents had less than 2 years of work experience and 64.5% of respondents were working in critical (Table 1).

Almost all of the respondents (90.7%) had knowledge that the scrub typhus is an acute febrile infectious illness. Three fourth (75.7%) of respondents knew the causative agent of scrub typhus. Most of respondents (88.8%) knew that scrub typhus is not directly transmitted from person to person however, only 62.6% of the respondents knew the mode of transmission of scrub typhus. Nearly two third (62.6%) of respondents answered the incubation period of scrub typhus as 6-21 days and only half (50.5%) knew that the scrub typhus rapidly spread in rainy season.

Regarding sign and symptoms, fever (99.1%) and lymphadenopathy (73.8%) were reported as a common sign and symptom of scrub typhus, however, only 64.5% of the respondents have knowledge that the eschar and rashes are not present in all cases.

Majority of respondents (79.4%) knew ELISA as diagnostic test to confirm scrub typhus, 86.9% knew doxycycline as drug of choice and 73.8% knew Acute Respiratory Distress Syndrome (ARDS) as common complication of scrub typhus. Regarding the preventive measures of scrub typhus, majority of the respondents knew that wearing closed footwear such as boots with socks (82.2%) while entering an exposed area, avoiding travel to mite infected areas (72.0) and using insects repellents (60.7%) were the common preventive measures of scrub typhus (Not shown in Table).

The level of knowledge regarding scrub typhus is adequate (55.1%) and 44.9% of respondents had inadequate level of knowledge (shown in table 2).

The level of knowledge regarding scrub typhus is statistically significant with professional qualification and self-directed learning however, work experience; clinical area, in-service education and exposure to care of scrub typhus patients were not associated with level of knowledge regarding scrub typhus (Shown in table 3).

Table 1: Socio-demographic Characteristics of Respondents (n=107)

General Characteristics	Frequency	Percentage
Age group (in years)		
<20	7	6.5
20-23	63	58.9
24-27	33	30.8
≥28	4	3.7
<i>Mean age= 22.67±2.479, Min=19 years, Max=31 years</i>		
Professional qualification		
B.Sc. Nursing	18	16.8
BN Nursing	15	14.0
PCL Nursing	74	69.2
Work experience (in years)		
<2	54	50.5
2-4	46	43.0
≥4	7	6.5
Clinical area		
General	38	35.5
Critical	69	64.5

Table 2: Respondents' Level of Knowledge regarding Scrub Typhus

Level of Knowledge	Frequency	Percentage
Inadequate (<26.63)	48	44.9
Adequate (≥26.63)	59	55.1
Total	107	100.0

Mean Score=26.63
Minimum Score=11

Standard Deviation=6.327
Maximum Score=44

Table 3: Association between Respondents' Level of Knowledge and Selected Variables (n=107)

Variables	Level of Knowledge		p-value**
	Inadequate n (%)	Adequate n (%)	
Professional qualification			
Bachelor in Nursing	7 (21.2)	26 (78.8)	0.001*
PCL Nursing	41 (55.4)	33 (44.6)	
Work experience (in years)			
<2	25 (46.3)	29 (53.7)	0.763
≥2	23 (43.4)	30 (56.6)	
Clinical area			
General	17 (44.7)	21 (55.3)	0.985
Critical	31 (44.9)	38 (55.1)	
In-service education			
Yes	14 (46.7)	16 (53.3)	0.815
No	34 (44.2)	43 (55.8)	

Self-directed learning

Yes	35 (39.3)	54 (60.7)	0.010*
No	13 (72.2)	5 (27.8)	

Exposure to care of scrub typhus patient

Yes	20 (37.7)	33 (62.3)	0.142
No	28 (51.9)	26 (48.1)	

*Significance level at 0.05**Pearson Chi-Square

DISCUSSION

The results of the study revealed that 75.7% of the respondents had knowledge on causative agent of scrub typhus, 62.6% of respondents had knowledge on mode of transmission of scrub typhus, 79.4% knew about diagnostic test for scrub typhus and 86.9% of respondents knew drug of choice for scrub typhus. Similar findings were found in the study of Ramakrishnan et al. (2016) where 81.25% of the respondents had knowledge on causative agent, 56.25% of the respondents had knowledge on mode of transmission, 81.25% of the respondents knew about diagnostic test for scrub typhus and 93.75% of respondents knew drug of choice for scrub typhus.

CONCLUSION

More than half of the nurses have adequate level of knowledge on scrub typhus. The level of knowledge regarding scrub typhus is influenced by professional qualification and self-directed learning. Therefore, training or in-service education on scrub typhus is needed to build up capacity of nurses for management of scrub typhus cases in the hospital as well as community level.

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