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Identification of common risk factor and socio demographic characteristics of tetanus patients in Rajshahi

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ABSTRACT
This cross sectional descriptive study was conducted among the tetanus patients admitted in ID hospital Rajshahi with Risk factors and relationship socio with demographic characteristics of the patients. At total of 384 respondents were interviewed and they were selected purposively data were collected from the respondents by face interview according to a partially structured Questionnaire. The mean age of respondents were 41±13.67 years, 88% patients were 41-49 years age group among affected respondents 81% were male. Most of them were Muslim (84.89%). One remarkable, Greater Proportion of 78.13 of the Patients had monthly family income up to Taka 6000. By education maximum (78.13%) illiterate and by occupation day labors (52.04%) and farmers 26%. Majority of them (73.96%) lived in Buildings and 24.74% in Kanchahouse. Greater Proportion of them (97.66%) was from rural area. The Proportion of tetanus affected patients were from district Rajshahi 27.34% and Kustia 20.83%. About 53.39% respondents complain dwelling admitted in hospital combination of lockjaw and contractions only lock jaw 40%. Risk factors one mostly remarkable (55%) by rusty tin. Nail prick 42.19% were another important risk factor. Antiseptic measures after injury maximum were wrongs because they antiseptic measure taken by self-27.34%. Polllychikissok 38.80% and no any antiseptic measure about 20-35 days interval affected respondent were (66.15%) high. Incomplete vaccination of the respondents were 72.66% and here found now a days 27.34% respondent were out of vaccination and out come after treatment recovery (75 .26%) rate were satisfactory. Tetanus occurred more amongst the age 40-49 by nil pick after then Rusty tin. Information from this study might be helpful to the concerned people and care provider about necessary steps and fill up any gaps and preventives tetanary.

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I. INTRODUCTION

Tetanus is a neurological disorder, characterized by increased muscle tone and spasms that is caused by tetanospasmin, a powerful protein toxin elaborated by Clostridium tetani.[1]Since the introduction of active immunization in 1940; it has become an old forgotten disease in the developed countries.[2] But it still remains an important cause of death in most developing countries.[3]

In the developing countries tetanus is common in adults due to lack of effective immunization program, inappropriate treatment of injuries[4] and decline in protective antibodies in elderly[5, 6]. The global incidence of tetanus is still estimated at one million cases annually, with a case fatality ratio ranging from 6% to 72% depending on the availability of well-equipped intensive care unit[7].

About one million cases of tetanus occur annually worldwide,[8] resulting in death of about half a million people each year[9]. Mortality from tetanus approaches close to twenty five percent in developing countries like Bangladesh[10].Tetanus occurs sporadically and almost always affects non-immunized, partially immunized, or fully immunized persons who fail to maintain adequate immunity with booster doses of vaccine[11,12]. It is therefore very important, in order to have protection against tetanus, that all age groups have the universal primary immunization with subsequent maintenance of adequate antitoxin levels by means of appropriately timed boosters[12].Four clinical forms of tetanus are recognized and they include generalized, localized, cephalic and neonatal tetanus,[11-14] Spasm related respiratory compromise, hospital acquired pneumonia and autonomic

instability is usually the main causes of morbidity and mortality of this disease[14,15].The diagnosis of tetanus is based entirely on clinical findings[1].

In Bangladesh, like in most of the developing countries in the world, tetanus is endemic and it remains a public health problem even today. Tetanus is a preventable disease that causes an annual total of deaths of particular concerns Rusty tin, Pinprick and RTA which fail to proper antiseptic measurement after injury. This study provided us some important information regarding, illiterately, lowest life lead, less awareness, low family income are indirect responsible for this T.T. So this study might help us in proper steps to prevent this disease and helps us how prevent and how recovery and might be the basis for relevant and further depth study in this regard. The aim of this study is to identify the common risk factor on tetanus patients admitted on ID Hospital, Rajshahi with Risk factors and relationship with socio demographic characteristics of the patients and eliminate risk of tetanus in our valuable life.

II. MATERIALS AND METHODS

The study was carried out at Infectious Diseases Hospital (IDH), Rajshahi in January 2020 to August 2020. Total 384 were purposively taken. A partially structured questionnaire which was duly pre-tested is used to collect data from the respondents. The researcher went to the admitted Patient in ID Hospital, Rajshahi and collected data from the admitted patient attending ward for seeking health care. Data were collected according partially structured questionnaire through in viewer administered questionnaire by face to face interview. All efforts were made to collect data accurately. For open questions, the respondents are asked in such a manner so that they could speak freely and explain their opinion in a normal and neutral way. No leading questions were asked.
Data were analyzed according to the aim of the study by using SPSS software. Statistical significance was found by applying relevant statistical tests at appropriate probability level (p = 0.05 or p 0.01)

III. RESULTS

Table-1: Distribution of the respondents by their age

Age group in years	Respondents	
	No	%
0-9 years	17	4.43%
10-19 years	18	4.69%
20-29 years	52	13.54%
30-39 years	70	18.75%
40-49 years	84	21.88%
50-59 years	71	18.49%
60-69 years	60	15.62%
Above 70	12	3.12%
Total	**384**	**100%**

The maximum respondents (2 1.87%) were in the age groups of 40 to 49 years followed by 18.75%, 18.48%; 18.22%, 15.78%,13.54%, 4.64%; 4.42%, 3.64% in the age group of 50—59 years, 30—39 year round above 70 years respectively. The mean age of the respondents was 41±13.67 years. (The table no 1)

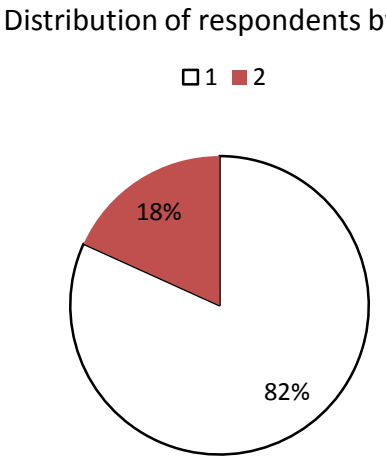

Figure No.1. Distribution of respondents by sex

It was observed from the above figure no. 01 that 81.77% respondents were male and the female constituted 18.23%.

Table-2: Distribution of the respondents by education status

Education status of the respondents	Respondents	
	No	%
Illiterate	300	78.13%
Up to class V	84	12.87%
Class VI-XII	-	-
Graduate	-	-
Total	**384**	**100%**

Table no. 2 showed that 78.13% respondents were illiterate and 21.87% respondents were educated up to class v.

Table-3: Distribution of the respondents by occupation

Occupation of the respondents	Respondents	
	No	%
Service	-	-
Farmer	100	26.04%
Day labor	200	52.08%
Business	-	-
House wife	49	12.77%
Others	35	9.11%
Total	**384**	**100%**

The table no. 3 above table found that majority of respondents (52.08%) were day labors, 12.77%% (N-49) were house wives, less than 26.04% (N-100) were farmers and other professionals had 9.11% (N-15).
Regarding religion it was observed that majority (85.6%) of the respondents belonged to Muslim, 11.4% were Hindu and the rest (3%) were others.

Table-4: Distribution of the respondents by Housing Condition

Housing condition of the respondents	Respondents	
	No	%
Kancha	95	24.74%
Tinshed	284	73.96%
Building	5	1.30%
Total	**384**	**100%**

The table no. 4 showed that total 73.9% of the respondents had Kancha house and 1.03% Respondents belonged to building house.

Distribution of the respondents by Housing Condition

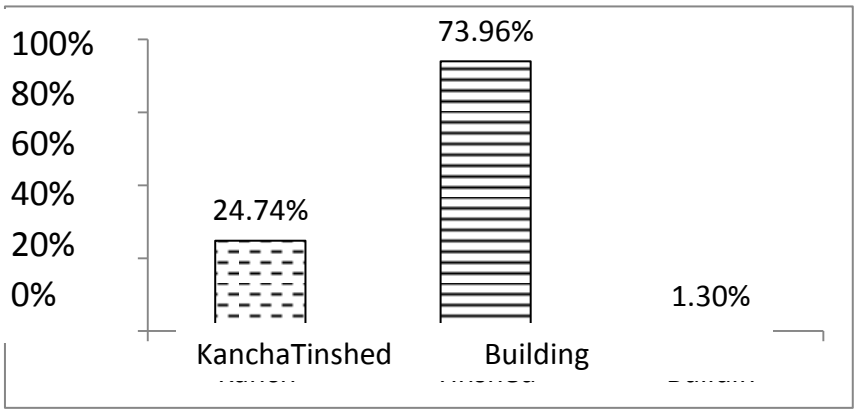

Figure No. 2: Distribution of respondents by housing condition

It was observed that 73.96% respondent had Tin shed houses, 24.74% had Kancha and 1.30% lived in building houses.

Distribution of the respondents by Residential area

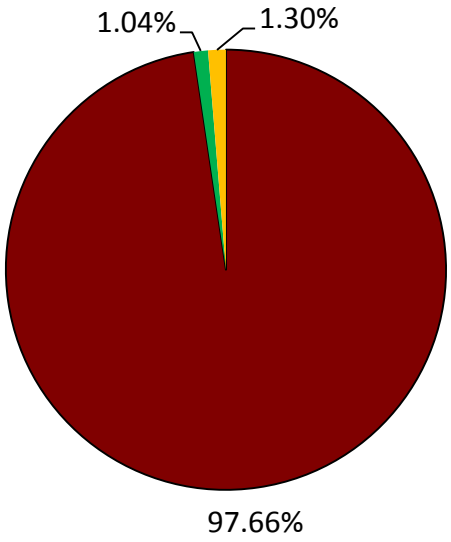

Figure no. 3: Distribution by residential area

Showed that 97.66% of the respondents were lived in rural area, 1.30% were slum and 1.04% were in Urban area.

Table-5**: Distribution of the respondents by monthly family income (in taka)**

Monthly family income	Respondents	
	No	%
Up to 6000	300	78.13%
Taka 6001-12000	80	20.83%
Taka>12000/	4	1.04%
Total	**384**	**100%**

$$\overline{X} + SD = 5507.81 \pm 90.73 \text{ taka}$$

The table no 5 showed that 78.13% of the respondents had monthly family income of taka up to 6000; 20.83% respondents were in the income group of Tk. 6001-1200 and only 1.04% respondents monthly family income was up to 12000. The mean monthly family income of the respondents was taka 5507.81±90.73.

Table-6: Distribution of the respondents affected district respondents

Name of District	Respondents	
	No	%
Rajshahi	105	27.34%
Naogaon	72	18.75%
Nawabgonj	85	22.14%
Natore	25	6.51%
Kustia	80	20.83%
Others	17	4.43%
Total	**384**	**100%**

The table no. 6 showed that 27.34% respondents were the district of Rajshahi, 22.14% district of Nawabgonj, 20.83% district of Kustia 18.75%, district of Naogaon, 6.5%. District of Natore and 4.43% respondents were district of others.

Table-7: Distribution of the respondents by Risk factors

Risk Factors	Respondents	
	No	%
Injury (Nail prick)	162	42.19%
Cut by rusty tin	215	55.99%
RTA	3	0.78%
CSOM	1	0.26%

Healed ulcer	1	0.26%
Others	2	0.52%
Total	**384**	**100%**

The table no. 7 showed that majority 55.99% of the respondents Risk factors had cut by rusty tin, 42.19% of the respondents had nail prick, 0.78% of the respondents had RTA, 0.52% of the respondents had others, 0.26% of the respondents had CSOM and healed ulcer.

The table no. 10 showed that 38.80% of the respondents took antiseptic measure by self, 27.34% by Pollychikissok, 11.72% by Hospital and 22.14% did not take antiseptic measures after injures.

Table-8: Distribution of the respondents by time interval between onset sign and symptoms

Time interval between onset sign/symptoms	**Respondents**	
Day	**No**	**%**
0-6	145	37.76%
After 6 to 10	239	62.24%
Total	**384**	**100%**

The table no. 8 showed that regarding time interval between onset sign and symptoms majority 62.24% of the respondents came to the hospital after 6-10 days and 37.76% of the respondents came to the hospital after 0-6 days.

Table-9: Distribution of the respondents by taking T.T vaccine

Taking T.T vaccine	**Respondents**	
	No	**%**
Complete vaccine	No	
Incomplete vaccine	279	72.66%
No vaccine	105	27.34%
Total	**384**	**100%**

The table no. 9 showed that majority of the respondents (72.66%) took incomplete T.T vaccine and 27.34% of the respondents did not take T.T vaccine. No any complete vaccine respondents.

IV. DISCUSSION

Though improved life style in our country but not less used of Tin, Iron Pin, which were caused tetanus and we saw in this study affected by tetanus very lower income family who had monthly mean income 5507.81±90.73 taka and they were very illiterate person. So in this study found that 81% respondent were affected by tetanus caused by injury. Iron mould were responsible those injury. That's been rusty tin 55% and nail prick 42.19%.

In this study out of 384 Patient the mean age of Patients were about 41±13.67 years (SD). Majority Patients were illiterate 74.13%. There was no any respondent's educational status above class five.

Greater proportions of affected person were day labour 52.08% and farmers were 26.04%. Economical condition of those respondent whose 78.13% monthly family income up to 6000 and above 12000 taka monthly family income only 1.04%. Housings condition were risk for tetanus because maximum of respondent were live in tinshed house 73.96% and about 22.14% respondent and his/her family have no any knowledge about antiseptic measures after injury 27.34% were takings Antiseptic measure but they have not sufficient idea about antiseptic measure. 3 8.80% of respondent take antiseptic measure by Polly chikissok and they have no provision complete vaccination, who were affected their 72.66% incomplete vaccinated no vaccination respondent were 27.34%. So we may think light of EPI Program cannot break the dark of ignorance as illiteracy, poverty and ignorance, but by treated ID hospital out come and recovery rate were satisfied 75.26%.

V. CONCLUSION

In this study we found nail prick or rusty tin injury are the main cause of tetanus in our hospital. We also found that age, literacy, Proper vaccination, economical status, using shoe or sandal and proper treatment after injury either cut or rusty tin may help in the elimination or prevention of tetanus. This study demonstrated that very poor population now a days distance from EPI and others opportunity.

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