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ASSESSMENT OF KNOWLEDGE ABOUT PROPHYLAXIS OF NEONATAL TETANUS AMONG TRADITIONAL BIRTH ATTENDANTS

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To asses the knowledge of Traditional Birth Attendants (TBAs) regarding prophylaxis of neonatal tetanus. The study was conducted in District Bhakkar Pakistan. All the TBAs in the area were interviewed to collect information on demographic characteristics, training and knowledge. Data analyses included descriptive statistics and Chi-square test or Fisher's exact test where appropriate, was used as test of significance. There were 48 TBAs in the area. Fifty two percent were trained, 85% were more than 40 years of age, and 94 % were illiterate. All literate and 58% of illiterate TBAs knew about neonatal tetanus (NT). Eighty four percent of trained and 92% of untrained TBAs had unsatisfactory hygienic conditions of nails. All the TBAs had no knowledge about the exact number of Tetanus Toxoid (TT) injections given during pregnancy. All TBAs boiled the instruments for less than 15 minutes. Eighty four percent of trained and 47% of untrained TBAs knew about cutting of the cord with new blade. Only 12% of trained and 8% of untrained TBAs knew about not applying anything on the cord after cutting. Sixteen percent of all had no knowledge of Safe Delivery Kit (SDK). Only 33% knew gloves should be used for delivery. No TBA either trained or untrained was found sound in knowledge regarding prophylaxis of Neonatal Tetanus. Efforts are required to train TBAs, improve their quality of training, and offering continued training for the trained TBAs in the form of short courses / workshops.

Neonatal tetanus is a major cause of infant mortality in developing countries like Pakistan and is directly related to poor obstetric conditions and lack of maternal immunization programs. Neonatal tetanus accounts for 5% of neonatal mortality and 5% of maternal mortality in most developing countries[1].

Poor midwifery standards, ignorance, inadequate or no immunization programs, traditional umbilical stump application, and unhygienic circumcision practices, all contribute to neonatal tetanus which causes death in more than 80 to 90% of cases[2]. A study done at San Larazo Hospital in Manila showed that home delivery is statistically associated with risk of neonatal tetanus.[3] Improving midwifery services has resulted in the decline in the incidence of neonatal tetanus.[4]

In Pakistan, more than 83% of deliveries take place at home (88% in rural and 12% in urban areas) at best with the assistance of traditional birth attendant known as dai because of affordability and the fact that she meets their emotional, cultural and spiritual needs[5]. Immunization of pregnant women during the last trimester is the most important method of preventing tetanus neonatorum. In Pakistan, tetatnus toxoid vaccination coverage in women remains low; only 52% of postpartum women have serological evidence of adequate protection against tetanus. The coverage rates for two doses of tetanus toxoid (TT) range from 56% in NWFP to 63% in Punjab.

The objective of the present study was to asses the knowledge of TBAs about prophylaxis of neonatal tetanus and to compare the knowledge of trained TBAs with untrained TBAs.

METHODS

A cross sectional study was conducted in district Bakkar situated on left bank of river Indus. The study area consisted of three union councils and 48 TBAs were practicing in the area. All the TBAs in the study area were included in the study.

Data was collected by face to face interview using a questionnaire. Information was collected on demographic characteristics, age, experience, education, training, knowledge about neonatal tetanus, two doses of TT immunizations of mothers during pregnancy, three cleans, sterilization, use of SDK and cord care.

Two dichotomous variables, knowledge and training were assessed defined as:

Knowledge: TBAs who answered all the questions about knowledge correctly were considered as having knowledge and, were grouped into 'Yes' category. TBAs who gave at least one incorrect

response were considered as not having knowledge and grouped into 'No' category.

Training: TBAs who had received training in modern health care sector for 2 – 4 weeks were grouped as 'trained', whereas TBAs who did not have any sort of training by health care sector were classified as 'untrained'.

Data Analysis:
All the data collected was transferred from interview sheets to data sheets and data was analyzed by tally method. Frequency distribution of variables studied were described, cross tables were formed to study the effects of variables. Chi-square test, and Fisher's Exact test where appropriate, were used to test for differences between trained and untrained TBAs.

RESULTS

All the 48 TBAs working in District Bakkar were included in the study. Majority of TBAs (85%) were forty years of age or older, and were illiterate (94%). Fifty two percent TBAs were trained, 65% had more than 15 years of experience (Table 1) all literate TBAs and 58% illiterate TBAs had knowledge about neonatal tetanus (Table 2).

Table 1: *Characteristics of traditional birth attendants in district Bakkar.*

Characteristics	N	(%)
Age		
< 40	7	15
≥ 40	41	85
Training		
- Trained (received training by health care sector for 2-4 weeks)	25	52
- Untrained (no training by health care sector)	23	48
Length of Experience		
< 15 years	17	35
≥ 15 years	31	65
Educational status		
- Literate (Can read and write in urdu)	3	6
- Illiterate (Can not read and write in urdu)	45	94

Forty Eight percent trained TBAs had knowledge about TT immunization of pregnant mothers compared to 17% untrained TBAs and this was statistically significant (p-value 0.024). But none of the TBAs (both trained and untrained) knew about exact number of TT injections. Among the untrained TBAs 48% had no concept of three cleans (clean hands, clean surface and clean instruments), 74% had no knowledge of SDK and 65% had no knowledge of Clean circumcision practices in male newborn babies. Only 8% of trained TBAs knew about care of cord (Table 3).

Table 2: *TBAs knowledge about neonatal tetanus by age, and literacy.*

	Knowledge about NT*			
	Yes		No	
	N	(%)	N	(%)
Age				
< 40	7	100	0	0
≥ 40	22	54	19	46$
Literacy (Educational status)				
- Literate (Can read and write in urdu)	3	100	0	0
- Illiterate (Can not read and write in urdu)	26	58	19	32$

*Neonatal Tetanus
$ Statistically significant (P-value < 0.05)

Table 3: *Distribution of correct responses of TBAs knowledge regarding prevention of neonatal tetanus by training.*

Knowledge	Trained TBAs		Untrained TBAs	
	N	%	N	%
1. Definition of NT	17	68	12	57
1. Immunisation	12	48	4	17$
2. Exat No. of TT injections*	0	0	0	0
3. Three cleans**	9	36	11	48
4. Use of SKD	2	8	6	26
5. Cord Care	3	12	2	8
6. Clean circumcision practice	2	8	7	3

*1st dose at 7th and 2nd at 8th month of pregnancy
**clean hands, clean surface, clean instruments
$ statistically significant (P-value < 0.05)

All the trained TBAs knew about boiling the instruments but all of them did not know to boil them for 30 minutes. Most of the TBAs were using sprit to sterilize instruments. Some knew about soaps and very few mentioned about dettol to be used for sterilization; no statistically significant differences were found between trained and untrained TBAs (Table 4).

Table 4: *TBAs knowledge regarding methods of sterilization.*

Methods of Sterilization	Trained TBAs		Untrained TBAs	
	N	%	N	%
Dettol	3	12	2	8
Spirit	22	88	21	91
Soaps	12	48	11	47
Boiling <15 minutes	25	100	23	100
Boiling up to 30 minutes	0	0	0	0

*Multiple responses are acceptable

Regarding cord care 96% trained and all untrained TBAs reported using un-sterilized thread for cord tying. One TBA used sterilized thread for cord tying, none reported use of cord clamps. Eighty four percent trained and 47% un-trained TBAs used new blade for cord cutting. Some used scissors or razor for cutting the cord. Majority of trained and untrained TBAs (80 – 86%) were applying sprit on cord stump for dres-sing. Few used ointment or left it as such (Table 5).

Table 5: *TBAs knowledge regarding Cord Care and dressing.*

Knowledge about:	Trained TBAs		Untrained TBAs	
	N	%	N	%
Cord Tying:				
Thread (Un-sterilized)	24	96	23	100
Thread (sterilized)	1	4	0	0
Clamp	0	0	0	0
Cord Cutting:				
New Blade	21	84	11	47$
Scissor	4	16	8	34
Razor	0	0	4	17
Any other	0	0	0	0
Application of materials to cord:				
Cow dung	-	-	-	-
Ash	-	-	-	-
Powder	-	-	-	-
Antimony	-	-	-	-
Spirit	20	80	20	86
Ointment	2	8	0	0
None	3	12	2	8

$ Statistically significant (P-value < 0.05)

Only 16% of trained and 8% untrained TBAs had good nail hygiene. Sixty percent of trained and 34% untrained TBAs had knowledge of SDK, and only 40% trained and 26% untrained TBAs knew about wearing gloves while conducting delivery (Table 6).

Table 6: *TBAs knowledge regarding nail hygiene status, use of SDK, and wearing of Gloves.*

TBAs	Trained TBAs		Untrained TBAs	
	N	%	N	%
TBAs Hygiene of nails				
Good	4	16	2	8
Poor	21	84	21	92
Use of SDK				
Yes	15	60	8	34
No	10	40	15	66
Use of Gloves				
Yes	10	40	6	26
No	15	60	17	74

DISCUSSION

More than 83% of deliveries in Pakistan are conducted at home at best with the assistance of TBAs, more so in rural areas.[3] This highlights the significance of TBAs in our society in spite of their lack of knowledge. TBAs not only assist the mothers with child birth, but support the pregnant women during and after birth in the form of practical help, education and counselling.

The strategies to control neonatal tetanus in Pakistan include provision of 2 doses of TT to all pregnant women through Expanded Program on Immunization and supplementary immunization activities in all the districts of Pakistan. The TBAs, LHVs, and LHWs play an integral and vital role by motivating and referring women for vaccination.

It is evident from the results that knowledge of TBAs is very deficient regarding prophylaxis of neonatal tetanus. Neonatal Tetanus occurs mostly due to unhygienic cord care practices (Save the Children-US). As seen in the present study, none of the TBAs reported using cord clamps, and were in favour of tying the cord with common thread. The results reveal that the knowledge of TBAs about neonatal tetanus and methods of prevention is very poor. A study in Thailand showed that the rate of neonatal tetanus was highest in the area due to unskilled TBAs.[4] With the lack of knowledge among TBAs in District Bhakkar, the risk of neonatal tetanus remains high in this area.

A study with the Canadian-Nigerian project on "Safe Motherhood" found that trained TBAs with sound knowledge were conducting safe deliveries while other were practicing unsound methods.[6]

Another survey conducted in Balochistan province of Pakistan in the Afghan refugee camps showed that trained TBAs were significantly more knowledgeable and skilled as compared to untrained TBAs.[7] In one study the knowledge of trained TBAs is not reasonably better than untrained ones in all the areas regarding prevention of neonatal tetanus. This indicates that the quality of training imparted to the TBAs of Bakkar is not up to the mark and needs to be improved.

Only 68% of the trained TBAs and 57% of untrained TBAs knew the definition of neonatal tetanus. None of them knew the exact number of injections of TT vaccine given to pregnant mothers. Same was true for three cleans and cord care. Not a single TBA knew to sterilize instruments by boiling for at least 30 minutes (Table 4). This state of affairs is also deplorable because Bakhaar is included in the 20 Districts of Pakistan where Women Health Project (WHP) has been launched since June 2000. The WHP is supplying safe delivery kits (SKD) to pregnant mothers and TBAs in its project areas, but, in Bhakhar district, none of the TBAs reported use of cord clamps and only 33% of TBAs knew the benefit of wearing gloves while conducting deliveries. Moreover 90% of TBAs were applying something on the cord stumps; the practices that promote neonatal tetanus.

As a **Conclusion** the knowledge of TBAs (both trained and untrained) regarding prophylaxis of neonatal tetanus in District Bhakkar is poor. TBAs need to be trained and standard of training of TBAs needs to be reviewed and improved. We recommend that: all TBAs should be trained with assurance of quality. There should be refresher courses for TBAs periodically. SDKs, sterilizers and TBAs kits should be distributed freely. Audio visual cassettes about clean delivery practices and use of SDKs should be distributed to all TBAs.

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