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GAP IDENTIFICATION IN BIRTH ASPHYXIA MANAGEMENT AMONG CMW'S IN DIST RICT HAFIZABAD, PAKISTAN

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Abstract:

Background: *In Pakistan, Neonatal Mortality Rate (NMR) has remained static since 1994 (1). In early neonatal period approximately 82% deaths are attributed to Birth Asphyxia (2, 3).*

Methodology: *A cross sectional study was conducted to assess the CMWs knowledge regarding birth asphyxia in district Hafiz Abad, Pakistan. All the CMWs were included in the study, except those who were on leave in the study duration. Pre-structured questionnaire was used for this purpose. SPSS version 21 was used for analysis.*

Results: *Response rate of this study is about 90%. Results showed that most of the CMWs i.e. 40 (72.7%) were below the age of 30 years, while 24 (40%) were married. Most of them 58.2% (32) had less than 3 years of experince as a community midwife. Regarding the diagnosis of Birth Asphyxia, 35 (63.6%) consider depressed breathing as sign of birth asphyxia. About 55% of the Community midwives took 30 minutes to resuscitate the baby. About 49% of them indicated that they use fetoscope to monitor the fetal heart rate. Age group and marital status of midwives found significantly associated with the proper diagnosis of Birth Asphyxia (P-value = <0.05). Cross tabulation results show that CMW's age and marital status not significantly associated with time taken to manage the birth asphyxia (P-Value 0.164 and 0.141 respectively), while professional experience is significantly associated with it with p-value <0.001.*

Recommendations: *There is need for continuous training of CMW's in proper resuscitation and management skills of Birth Asphyxia. In addition, there is also a need to ensure the availability of resuscitating equipment's and proper resources, so that the quality of proper neonatal care is ensured.*

Key words: *Birth Asphyxia, Neonates, Mortality, Community midwives, Knowledge, Management.*

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INTRODUCTION:

First one minute after baby birth is considered as the golden minute, the baby should be breathing well (4). According to World Health Organization (WHO) "the failure to initiate and sustain breathing at birth" is called birth asphyxia (5). It is a substantial cause of life loss and abnormal development outcomes. Globally, major causes of neonatal mortality were estimated to be infections (35%), preterm births (28%) and birth asphyxia (23%) (6). In developing countries asphyxia is considered a leading cause of neonatal mortality and morbidity, with an incidence of 100-250 per thousand live births compared to 5-10 per thousand live births in the developed world (7). Babies who survive after Birth Asphyxia develop chronic neural problem e.g. cerebral palsy, encephalopathy, mental retardation, learning disabilities and epilepsy etc. (8). If we provide the equitable services and skilled care to newborn it is estimated that we can prevent many newborn deaths annually (2).

Regional estimates suggest that there were nearly two million newborn deaths in 2012, out of which only one percent of these deaths were in 39 high-income countries. Remaining 99% of deaths were in low income and middle-income countries. It is estimated that about two third of neonatal deaths arise in the African and southeast Asian region and nearly a quarter of newborn deaths are the result of complications at labor and delivery, technically called intrapartum-related deaths or Birth Asphyxia. In Asian regions many countries have made progress to decrease the NMR, Bangladesh has made impressive progress to decrease its infant and neonatal mortality rates and its NMR is 24 per 1000 which is below the half of NMR of Pakistan. Similarly, India also made progress to decrease their NMR from 51 to 31 per 1000 live birth (2).

In Pakistan the problem is highlighted by the fact that NMR has actually increased from 51 per 1000 in 1991 to 55 per 1000 in 2013 (1). Major causes of Early Neonatal Mortality includes Birth Asphyxia 47%, Prematurity 18%, sepsis 14%, pneumonia 4%, congenital abnormalities 4%, others 4% and Unexplained Neonatal deaths 10% (1). In addition, a recent study of the causes of neonatal mortality show that primary obstetric causes of neonatal mortality were fetal immaturity and intra-partum asphyxia; both of these are potentially preventable or treatable (9). According to recent estimates Pakistan intra-partum still births and neonatal deaths on day of birth is 40.65 per 1000 total births and both of them were highly associated with Birth Asphyxia (2). In Pakistan 52% deliveries takes place at home, which are mostly supervised by TBAs or CMWs (1). A study which was conducted in Rural Sindh, estimated 65% of still birth and upon which 75% were fresh still birth indicating Birth Asphyxia to be the cause of death.

If we see the situation of Punjab province, NMR is approximate same as the national figure. NMR of Punjab province is 58 per 1000 live births which are slightly above the national figure. District Hafizabad depicts the same picture as Punjab province, the Infant Mortality Rate (IMR) of district Hafizabad is 67/ 1000 live birth, and only 56 % of the deliveries is conducted by the any skilled personnel. CMWs can play a vital role in effective management of Birth Asphyxia as they are trained to deal with it. In Pakistan, incidence of Birth Asphyxia in Early Neonatal Period is 47%. So, there is a great need to identify the factors which are associated with the delayed in resuscitation process in CMWs (10). Timely intervention can limit the mortality or morbidity associated with Birth Asphyxia. In 2006, special efforts were made by the Ministry of Health (MOH) to promote the Community Midwife profession. Training of CMWs started in 2007-08 in ten PAIMAN districts (11). However, out of total 11,996 community midwives, only 45% (n=5398) had been trained for mother and child care and out of them only 64% (3454) deployed in 40 districts across the country (2). In addition, according to the national CMWs database up till now 8113 CMWs were deployed all over the Pakistan (12).

To limit the mortality or morbidity associated with Birth Asphyxia, Skilled Birth Attendants play a crucial role. This study was aimed to assess the knowledge of CMWs and to identify the factors associated with poor management of birth asphyxia in district Hafiz Abad.

Operational Definitions

Stillbirth: This will be taken as equivalent to late fetal death that is a baby who is born with no signs of life after 28 weeks of gestation (equivalent to 1000 g) (7)
Birth Asphyxia: The failure to initiate and sustain breathing at birth (3).

Skill Birth Attendant: Trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postnatal period, and in the identification, management and referral of complications in women and newborns (13)

METHODOLOGY:

A descriptive Cross-sectional study was designed to collect the data and conduct statistical analysis. This

study was conducted in district Hafizabad, a peri-urban district in province of Punjab, Pakistan. A universal sampling approach was adopted and all CMWs who were deployed in Hafizabad were included in this study. Total number of community midwives deployed in Hafizabad at the time of study was sixty-one. Community midwives who were currently under training or not deployed by the program have been excluded from the study. A pre-coded self-administered questionnaire, translated to Urdu was used. The questionnaire collected information on CMW's knowledge about Birth Asphyxia, importance of early management of Birth Asphyxia and identify the hindrances that CMWs face while dealing with these cases. The questionnaire was consisting of different variables which include socio-demographic characteristics, understanding regarding Birth Asphyxia, identification of warning signs of Birth Asphyxia and CMWs knowledge about the effective management of resuscitation process. The data collected was checked for completeness and then was coded and entered into SPSS. During analysis, descriptive statistics was computed and the results were reported as frequencies and percentages. Chi square/ fisher exact test was used to explore the association between the knowledge about the Birth Asphyxia management and socio-demographic variables. The results were presented in the form of tables. Written informed consent was taken from the study participants. Confidentiality and anonymity of the participants was assured by assigning the Id # to individual participants. Aims and objectives of the study was explained to participants. Permission from the respective district health office was taken. Respective district authorities were also be informed about the study aims and objectives.

midwives know how to properly mark the Apgar score.

RESULTS:

The descriptive cross-sectional study was conducted on community midwives working in district Hafizabad to identify the gaps in management of birth asphyxia. All the CMWs deployed in district were invited to participate in the study. Out of total 61 CMWs, 55 willing to participate in the study, representing the response rate of 90%.

Age of respondents: More than half of the CMWs 40 (72.7%) were below the age of 30 years. Out of total 24 (43.6%) were married, one is widow while one is divorced.

Experience of Respondents: Most of them 32 (58.2%) had less than 3 years of experince as a community midwife and only 6 (11%) had five or more than five years of experience. They get Birth Asphyxia knowledge through pre-service education 15 (27.3%), Refresher Trainings 16 (29%) and 20 (36.4%) from their supervisors.

Diagnosis of Birth Asphyxia: Regarding the diagnosis of Birth Asphyxia, 35 (63.6%) consider depressed breathing as sign of birth asphyxia, 12 (21.8%) consider no breathing as asphyxia, while 8 (14.5%) consider both depressed and no Breathing as sign of Birth Asphyxia. Only 55% of the community

Resuscitation process time and reasons in delay: About 30 (55%) of the Community Midwives took 30 minutes to resuscitate the baby. Reasons behind the Delay in resuscitation process include non-availability of Bag & mask 63.6%, lack of oxygen 7.3%, non-availability of bag, mask and oxygen 25.5%, and poor referral system 3.6%.

Availability and usage of resuscitating equipment's: Only 27 (49%) of the respondents had indicated that they use fetoscope to monitor the fetal heart rate, while 16 (29%) used stethoscope. Only 23 (41.8%) of the Community midwives had the resuscitation equipment.

Knowledge of respondents about resuscitation Steps: Only 31 (56%) of the respondents have proper knowledge about the neonatal resuscitating process. Moreover, the actions which Community midwives perform if Baby won't response to ventilation, 36 (65.5%) respondents said that they continue ventilating the baby, 12 (21.8%) respond that they wait for baby to cry and only 1.8% refer the baby to next health facility. Only 38 (69%) of the community midwives responded that they reassess the newborn after one minute.

Table 1: Descriptive analysis regarding Asphyxia knowledge and management

Questions	Options	n	%
Respondent age	<30 years	40	72.7
	>30 years	15	27.3
Respondent marital status	Single	31	56.4
	Married	24	43.6
Professional experience	<3 years	32	58.2
	3-4 years	17	30.9
	5 or more	6	10.9
Source of knowledge about birth asphyxia	Pre-service education	15	27.3
	Refresher training	16	29.1
	Friend/social group	1	1.8
	Supervisor/In charge	20	36.4
	Other	1	1.8
	No source of knowledge	2	3.6
Diagnosis of birth asphyxia	Depressed breathing	35	63.6
	No breathing	12	21.8
	Both depressed or no breathing	8	14.5
Time to manage birth asphyxia	Within 10 minutes	16	29.1
	Within 20 minutes	9	16.4
	Within 30 minutes	30	54.5
Reasons of delayed management	Non-availability of bag and mask	35	63.6
	Lack of oxygen	4	7.3
	Non-availability of bag, mask and oxygen	14	25.5
	Poor referral system	2	3.6
Fetal heart sound monitored through	Fetoscope	27	49.1
	Stethoscope	16	29.1
	Other	12	21.8
1st step for neonatal resuscitation	Aspirate mouth and nose	50	90.9
	Tap backside of child	4	7.3
	Other	1	1.8
Availability of resuscitation equipment's	Yes	23	41.8
	No	32	58.2
Resuscitation procedure	Ventilate 1-2 minutes	13	23.6
	Ventilate 40 times/minute	31	56.4
	Pause after 30 minutes to check breathing	7	12.7
	Other	4	7.3
If baby does not begin to breath	Continue to ventilate	36	65.5
	Waite baby for cry	12	21.8
	Refer to other facility	6	10.9
	other	1	1.8
Reassess the baby (time)	After one minute	38	69.1
	After 2 minutes	7	12.7
	After 5 minutes	10	18.2
If baby start breathing than?	Continue monitoring baby	33	60
	Immediate breast feeding	1	1.8

	Keep baby warm	21	21

Association between CMW age, marital status and professional experience with Birth asphyxia diagnosis

Age group and marital status of midwives found significantly associated with the proper diagnosis of Birth Asphyxia (P-value = <0.05). The results indicate that the community midwives who were married, less than 30 years of age has better knowledge about the diagnosis of Birth Asphyxia as compare to those who were unmarried and more than 35 years of age. Professional experience of CMWs found as not significantly associated with diagnosis of birth asphyxia, with p-value 0.153. CMWs with less than 3 years of experience seems more capable in diagnosis of BA compared to those with more the 3 years of experience as CMWs.

Table 2: CMW age, marital status and professional experience VS Birth asphyxia diagnosis

Variables		Diagnosis of birth Asphyxia				
		Depressed breathing n(%)	No breathing n(%)	Both n(%)	Total n(%)	P-Value
Age groups	<30 years	31(56.4%)	4(7.3%)	5(9.1%)	40(72.7%)	0.001
	>30 years	4(7.3%)	8(14.5%)	3(5.5%)	15(27.3%)	
Marital status	Single	27(49.1%)	3(5.5%)	1(1.8%)	31(56.4%)	<0.001
	Married	8(14.5%)	9(16.4%)	7(12.7%)	24(43.6%)	
Professional experience	<3 years	19(34.5%)	7(12.7%)	6(10.9%)	32(58.2%)	0.152
	3-4 years	14(25.5%)	3(5.5%)	0	17(30.9%)	
	5 or more	2(3.6%)	2(3.6%)	2(3.6%)	6(10.9%)	

Association between CMW age, marital status and professional experience with time management of birth asphyxia

Cross tabulation results show that CMW's age and marital status not significantly associated with time taken to manage the birth asphyxia (P-Value 0.164 and 0.141 respectively), while professional experience is significantly associated with it with p-value <0.001.

Table 3: CMW age, marital status and professional experience VS birth asphyxia time management

Variables		Time management of birth Asphyxia				
		Within 10 min n(%)	Within 20 min n(%)	Within 30 min n(%)	Total n(%)	P-Value
Age groups	<30 years	9(16.4%)	8(14.5%)	23(41.8%)	40(72.7%)	0.164
	>30 years	7(12.7%)	1(1.8%)	7(12.7%)	15(27.3%)	
Marital status	Single	6(10.9%)	7(12.7%)	18(32.7%)	31(56.4%)	0.141
	Married	10(18.2%)	2(3.6%)	12(21.8%)	24(43.6%)	
Professional experience	<3 years	4(7.3%)	3(5.5%)	25(45.5%)	32(58.2%)	<0.001
	3-4 years	6(10.9%)	6(10.9%)	5(9.1%)	17(30.9%)	
	5 or more	6(10.9%)	0	0	6(10.9%)	

DISCUSSION:

Overall findings depict that about half of the community midwives had appropriate knowledge about the various aspects of Birth Asphyxia. A possible reason for lack of information and skills in identifying and managing Birth Asphyxia might be a lack of refresher trainings for the community midwives regarding the Birth Asphyxia. The results that community midwives were still not familiar with some aspects of Birth Asphyxia highlight a great concern in our country where NMR is still high i.e. 55 per thousand live births (1).

Early Detection of asphyxia is very important for timely initiation of resuscitation. Moreover, the findings showed that midwives' ability to recognize warning signs of Birth Asphyxia was not up to the mark. The fetal heart rate was not monitored according to the guidelines, and only 49% midwives use fetoscope to assess the fetal heart rate. Along with that, only 21.8% of the Community Midwives consider no breathing as a sign of Birth Asphyxia, which indirectly highlight that community midwives may consider asphyxiated child a still birth. This fact highlight that community midwives require proper skill and training for the better understanding of Birth Asphyxia. A recently reported, multi-country, community-based study revealed that the proper refresher training of CMW's reduced Birth Asphyxia and still births rates in community settings (15).

The results show that the biggest problem among the participants in this study was the delayed in resuscitation process. 55 % of the midwives take 30 min to properly resuscitate the baby which shows the lack of proper skills among the community midwives to timely manage the Birth Asphyxia. Delayed in resuscitation process lead to the brain injury, so therefore need for the skill building of the community midwives so they can timely manage the asphyxiated newborn. Immediate and effective management during and after labor and delivery can make the difference between life and death for the newborns (16). Results shows that the lack of resuscitating equipment was the primary reason behind the delayed in resuscitation process. With the help of neonatal bag & mask, suction device and proper resuscitation training we can prevent 30% deaths among full term babies (5).

Moreover, results show poor knowledge regarding the resuscitating process only 41% of midwives have appropriate knowledge about that. In addition, neonates were not properly monitored for breathing and heart rate after the resuscitation. Which is mainly due to the lack of refresher or in-service training. These findings highlight that there is need for the capacity building of the novice CMW's.

CONCLUSION:

Overall findings depict that there are many problems in recognition of warning signs and proper management of Birth Asphyxia. Unavailability of proper resuscitating equipment is also one of the main reasons found to be the delayed in resuscitation process which may result in morbidity or mortality. The main reason behind these results were lack of the refresher trainings for the community midwives regarding the Birth Asphyxia. Identification of warning signs, prevention and skilled management of Birth Asphyxia is important in reduction of Neonatal Mortality Rate in Pakistan.

Recommendations

Based on the results of this study, it is recommended that appropriate refresher trainings should be done to improve the knowledge and skills of community midwives. Along with that, resuscitating equipment's should be provided to all the community midwives so that they can efficiently manage Birth Asphyxia. Moreover, this study also recommends that a comprehensive curriculum about the effective management of Birth Asphyxia should be incorporated in the Community Midwives' training syllabus.

Limitations

The data was only collected from one district and due to the limited time frame the practices of the community midwives were not observed which may tell us the better picture about the community Midwives practices regarding the Birth Asphyxia management.

REFERENCES:

1. Studies NIoP, International I. Pakistan Demographic and Health Survey 2012–13. Government of Pakistan USA; 2013.
2. Wright S, Mathieson K, Brearley L, Jacobs S, Holly L, Wickremasinghe R, et al. Ending newborn deaths: ensuring every baby survives. 2014.
3. UNICEF. Every Child Counts: The State of the World's Children. UNICEF; 2014.
4. Ashir GM, Doctor HV, Afenyadu GY. Performance based financing and uptake of maternal and child health services in yobe sate, northern Nigeria. Global journal of health science. 2013;5(3):34.
5. Organization WH. Basic newborn resuscitation: a practical guide. Geneva: World Health Organization; 1998.
6. Kiyani AN, Khushdil A, Ehsan A. Perinatal factors leading to birth asphyxia among term newborns in a tertiary care hospital. Iranian journal of pediatrics. 2014;24(5):637.
7. Lawn JE, Lee AC, Kinney M, Sibley L, Carlo WA, Paul VK, et al. Two million intrapartum-related stillbirths and neonatal deaths: where, why, and what can be done? International Journal of Gynecology & Obstetrics. 2009;107(Supplement):S5-S19.

8. Bhutta ZA. Reproductive, Maternal, Child Health and Nutrition in Pakistan: Opportunities for Change. Pakistan: Paramount Publishing Enterprise; 2013.
9. Jehan I, Harris H, Salat S, Zeb A, Mobeen N, Pasha O, et al. Neonatal mortality, risk factors and causes: a prospective population-based cohort study in urban Pakistan. Bulletin of the world Health Organization. 2009;87:130-8.
10. Pakistan; MAo. Renaissance of Midwifery: 2014 [Available from: http://www.midwifepak.org.pk/Midwifery_in_Pakistan.htm.
11. Solutions RaD. The Community Midwives program in Pakistan. Policy Brief. 2012.
12. 2014. CDNMP.
13. Chikuse B CE, Maluwa A, Malata A, Odland J. . Midwives' adherence to guidelines on the management of birth asphyxia in Malawi. Open Journal of Nursing. 2012;2:351-7.
14. Ending Newborn Deaths: Ensuring Every Baby Survive. London ECIM 4AR UK: Save The Children; 2014.
15. Waldemar A. Carlo SSG, Imtiaz Jehan,Elwyn Chomba, Antoinette Tshefu. Newborn-Care Training and Perinatal Mortality in Developing Countries. The New England Journal of Medicine. 2010;362.
16. GC K. Note on Midwifery Trainning. Personal Communication. 2010.