

DETERMINATION OF PREVENTIVE COMPLIANCE RATE OF HEALTHY NEONATAL HYPOTHERMIA IN DELIVERY ROOM OF KHUZESTAN HOSPITALS WITH NATIONAL STANDARDS 2013

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Abstract: Some of the interventions related to neonate care have more importance and has more emphasis on valid authorities. World Health Organization knows the heat protection interventions in newborns as one of essential principles of care and treatment of them. Hypothermia is a situation in that body temperature declines lower than the normal values (36.5- 37.5 degrees celcius). The present study has been conducted in interest of determining the amount of compliance of the delivery rooms in Khuzestan hospitals for prevention of hypothermia in healthy newborn compared to the country standards. This descriptive cross-sectional study was conducted in selected maternity hospital of the Khuzestan province during the year 2013 and samples of the research were 400 healthy newborn. The study was done in 12 town and totally in 15 hospitals of Khuzestan Province. Tools for collecting of data in this research was an observation check list and a questionnaire. Data was analysed by SPSS software version 19 and with the use of the statistics indices including mean, relative frequency and percentage. The results showed that performed interventions in the field of prevention of the hypothermia in 19.8%, 65.4 and 14.8 of cases had a weak, moderate and good compliance compared to national standards, respectively. Prevention of hypothermia in hospital 3 as poor, 10 hospital moderate and 2 of them as good has been evaluated. preventive care of hypothermia in the selected hospital of the Khuzestan is not in accordance with standards of a country and needs for the precise control.

Keywords: hypothermia, neonates (newborns), standard

INTRODUCTION

"The newborn is said to 28 first day of life, that many necessary physiological adjustments will develop for extra-uterine life in this period (1). The periods of delivery, childbirth and immediately after the birth is very vital for the survival of mother and neonate and it is estimated that up to 25 to 45 percent of the mortality happens during first 24 hours after the delivery (2, 3). Throughout the world about eight newborns die every minute and every year about 4 million neonates die due to inadequate care. Reduction in mortality can be through improving quality of the cares rates (4). Based on the statistics of World Health Organization, the number of newborn death was 14 cases in Iran in the year 2011 in every one thousand live births while in the United States this rate is 4 in one thousand live birth (5), that the main reason for it is the weakness in pregnancy prenatal care and the inefficiency of the midwifery, medical and nursing cares (6). According to proposal of World Health Organization, our country is bound to reduce the rate of neonatal death from year 2011

(number of newborn death 27 in the 1000 live birth) till the year 2015 by half (5). The importance of maintenance of body temperature in care of newborns is obvious and the fact it had been accepted that keeping warm newborn, results prevention of death and mortality and other complains regarding hypothermia(7). Hypothermia is a situation in that body temperature declines lower than the normal values (36.5- 37.5 degrees celcius). Hypothermia is an epidemic problem which leads severe complications and death up to 28 day of life (8). Infants during birth, resuscitation, the transfer and during admission to the ward lose the heat and due to high surface body area to weight ratio, that is almost three times more than that of the adult, are exposed to hypothermia. The amount of heat loss in a newborn is approximately four times that of the adult. Central infant's body temperature during 30 minutes after the birth can decline up 2 to 3 degrees centigrade (9). In this regard, the restoration status of natural temperature of infant in the early hours of life is a basic and essential need and cares related prevention of hypothermia is considerably reduces

mortality rate and neonatal complications in this period (10). With regard to the importance of the newborn life and the death rate from the health, economic, social point of view and role of this period in child health in later years, it is necessary to do activities for improving quality and the quantity of cares (11). The quality of care means the care based on standards (12). The main part of care for the newborn is the quality and presenting a good quality care need participation of nursing care by skilled people (13). Creating and following the standards has an important role in increasing the efficiency of treatment centers (14). Since standards are an authentic criteria that are used for assessment, it can be said that without standards, assessment is not possible (15). Unfortunately in many cases despite access to financial services and a place for these services, the quality of given services is not satisfactory and its accompanying with shortage of equipments and devices cause diminishing in quality of services and even in the case of some risk factors a suitable efforts to minimize symptoms is not done (16). Undesirable quality of care for the newborn seriously prevents the access to the health of the newborn and the meet of neonatal rights and causes the inefficiency and direct and indirect cost for the family (17). World Health Organization for the elevation of the level of quality emphasises on the supervision on the quality of services. since the main objective of evaluating quality is improvement of services and generally speaking, detection of the weaknesses to strengthen the programs (18). A good quality services requires that employees of medical services and health care to have necessary skills (19). This is possible only with the Supervision and Assessment of relevant units and serious attention to the measurement of quality (20). With assessing of quality not only the way of implementation of a program in comparison with standards will be clear, but also the problem of program is detected so that after determining the problem can do interventions to identify the cause and remove it (18). Gurung has noted in his study that way of giving cares to newborn at the birth greatly depends on the knowledge of the head of the service provider, beliefs, traditional, social and economical practices, family condition, access to health services and employing trained midwives (21). Based on Abdolftah et al's study can prevent or treat two third of neonatal mortality through immediate and necessary cares after childbirth (13). Some of the measures related to care for infants has importance and more emphasised by valid authorities. As an example World Health Organization considers the heat protection in neoborns as one of the principles of care and treatment necessary in infants and this is the especially in the countries with less equipment and facilities for designing and making delivery room for heat protection are considered more necessary (22).

World Health Organization (2010) states that immediate attention to the status of newborn immediately after birth is an indispensable part of the care of the newborn at birth that includes: drying of newborn with a warm towel and placing him/ her on the mother's belly, closing and cutting umbilicus with sterile tools, prevention of infection with applying nitrate silver eye drop, using Vit. K, providing heat, infant assessment in minutes 1 and 5 after birth with Apgar score (13). According Shrestha et al (2009), the principle of the necessary and effective cares in newborn is: prevention of hypothermia, establishment of breast feeding, prevention of infection and identify the newborn (23). A research in Nepal showed that Asphyxia, hypothermia and infection are the most common cause of death and mortality which with better care during and after childbirth can be reduced (21). In Plizban et al (2004) General prevalence of hypothermia was 53.3% (24). In Kumar's study in the year 1998 in north India 19.1 percent neonate in the winter and 3.1 % in the summer during 24 hours after the birth were hypotherm (25). In the study of Zayeri and his colleagues in the year 2004, 15.5% of term and 19.7 percent of preterm neonates suffered from hypothermia in first 24 hours of life in Iran (26). With regard to the importance of newborn care in delivery room and since no research has been done regarding to determining the amount utilizing national standards in the newborn care package in childbirth room in our country, therefore present research has been designed with the goal of determining the amount of the adjustment with national standards for preventing hypothermia of healthy infant in the delivery room of selected Khuzestan hospitals 2013.

MATERIALS AND METHODS

This research is a descriptive study during which the status of prevention of hypothermia of healthy infant in childbirth room by observing performance of hospital personnel and equipments has been investigated with the use of an observational checklist of the guide compiled country in hospitals of Khuzestan Province in the year 2013. In this regard 400 neonates born in the maternity hospitals of the Khuzestan province have been studied including: Amirmomenin, Imam Khomeini, Sina and Razi in Ahvaz, Taleghani Abadan, Ganjavian and Nabavi in Dezful, Farideh Behbahani in Behbahan city, Narges Maroofi in Mahshahr, 22 Bahman Masjed Suleiman, Imam Khomeini Ramhormoz, Shohada Izeh, Alhadi Shushtar, Moarrefi Zadeh Shadegan, Shahid Chamran Sousangerd. The population of study according units of research and with the non-random sampling (available) were enrolled. Inclusion criteria: the newborns at birth with 41 to 37 weeks gestational age and apparently healthy (without abnormalities can

be observed and diagnosed in the initial evaluation) and exclusion criteria of study: newborns with delivery injuries, Apgar score less than 7 in first minutes, and a need for resuscitation, with weight less than 2500 gram and 4000 g, the use of oxytocin for induction of delivery, complicated pregnancy, mother's disease which affect on fetus like diabetes, chronic blood pressure, polyhydraminosis, multiple pregnancy, passage of meconium before the birth. Following formula has been used for calculating the samples:

$$N = \frac{Z_{1-\frac{\alpha}{2}}^2 p(1-p)}{d^2} = \frac{(1.96)^2 \times 0.25}{(0.05)^2} = \frac{3.84 \times 100}{1} = 384$$

$Z_{1-\frac{\alpha}{2}} = 1.96$ for 95% confidence interval, $d = 0/05$; $p = 0/5$

In order to increase accuracy of study, we increased the number of samples to 400. Since there was no similar study therefore $p = 0/5$ was considered to obtain the highest volume of sample.

Method of collecting data in this research included observation and completed questionnaire and check list.

Information in this research has been collected via direct observation of care presented to 400 healthy newborn in a delivery room and registration of all data in checklist that the validity of it with using content validity and reliability has been checked with simultaneous observation.

Demographic information and the record of Midwifery (History of childbirth, History of abortion. .) via interview with mother is completed and a number of items like pregnancy sonography has been extracted from medical files. To find the amount of adjusting each of the care processes with standard instructions of country about cares of healthy neonate in the room delivery, the amount frequency and percentage of doing each process has been calculated and indicators of the amount of the desirability based on process done in accordance with a standard newborn cares: 0-33 percent undesirable, 34-67percent moderate and 68-100 percent desirable. In the case that an action is done

with correctly score 1, without obeying standard principle score 0.5 and if that is not done the score zero was given. Data was analysed by SPSS software version 19 and with the use of the statistics indices including mean, relative frequency and percentage.

FINDINGS

The Study population in this study are newborns in the selected hospitals of Khuzestan. 54.8% and 45.2 %percent of neonates were boy and girl, respectively. The mother's mean age was 26 years. The highest number of pregnancies in many group was 2- 4 (55.8%). In 35% of mothers just once, in 9.2 for 5 times and more were pregnant. Of pregnancies 86.2 % and 13.8 percent were wanted and unwanted pregnancy, respectively. The level of education was: 34.3% primary education, 21.8% guide school certificate, 17.5% illiterate, 12.8% diploma, 11.3% high school and 2.3% graduated from university. Of 96.5% mothers were housewives and 3.5% were employed.

In this research 86.7 percent of hospitals have a protocol for taking care of healthy neonate in the delivery room and 13.3 percent hospital lack so. Following table indicates measures in the field of prevention of hypothermia included preparing the three warm towel and drying before the birth of newborn in 73% cases was deformed. In 97% cases clean towel on the belly of mother was not placed before delivery. In 78.5% cases immediately after the birth, newborn has been covered with warm towel. in 99.4% of cases newborn was not placed on mother's belly. In 94.8% of cases, neonate was placed under radiant warmer. In 13.5% cases, neonate were placed next to the mother without putting under radiant warmer. Wrapping newborn in one of the warm towel immediately after the birth and under the radiant warmer by midwife were evaluated desirable and other processes as undesirable has been assessed. The results of this research show that performed activities to prevent the hypothermia in 19.8 %, 65.4% and 14.8% of cases had poor, moderate and good compliance, respectively. Also the manner of preventing hypothermia in selected hospital of Khuzestan province in 3, 10 and 2 hospitals evaluated as poor, moderate, good, respectively.

Distribution of abundance of the measures taken to prevent the hypothermia

Measures type of action	yes (percent)		no (percent)	Status of compliance
	yes completely	yes imperfectly		
preparing three warm and dry cotton towel and by midwife before the birth of newborn	0 (0)	292 (73%)	108 (27%)	relatively ideal
placing a warm and clean towel on the mother's belly by midwife before the birth of newborn	12 (3%)		388 (97%)	Undesirable
wrapping neonate in one of the warm towel immediately after birth by midwife	314 (78.5)		86 (21.5%)	Ideal
placing neonate on the belly of mother by delivery agent	3 (0.6%)		397 (99.4%)	Undesirable
placing neonate under radiant warmer by the radial midwife	379 (94.8%)		21 (5.2%)	Ideal
placing neonate under radiant warmer by the midwife next to the mother	54 (13.5 %)		346 (86.5%)	Undesirable

DISCUSSION

Based package of the healthy newborn care service, prevention of heat loss and hypothermia are principles for neonatal care. Immediately after the birth putting the neonate on the mother's belly that has been covered with a warm and sterile cotton towel. Assess the need for resuscitation, drying and stages of clamping and cutting the umbilicus, after putting newborn on mother's belly. In the absence of suitable conditions for putting newborn on mother's belly, put the newborn on the warm, clean and safe surface (under the radiant warmer) and beside mother (11).

Based on the results of this research, three warm and dry cotton towel was not completely prepared for any of the newborns 0 (0%), in 292 (73%) incomplete and in 108 (27%) of cases at all was not ready. The process was assessed as moderate. Putting warm and clean towel on the mother's belly before the birth in 388 (97%) of case was not done. The process was assessed as unsatisfactory which with the service package of healthy neonate is inconsistent. The reason for this difference may be due to the lack of training of midwives, inattention of personnel to this important issue, the lack of knowledge of staff and bustle of the maternity hospital. The shortage of health personnel has caused

that to act duties less or with hurry and with training above skills and establishing necessary training shops in this regard to some extent can remove this problem.

wrapping neonate in one of the warm towel immediately after birth was done in 314 (78.5%) and in 86 (21.5%) of case was not performed which acting on this process was assessed desirable that is compatible with service care package of the healthy newborn. The placing neonate on the belly of mother immediately after childbirth in 397 (99.4%) of cases was not done therefore the assessment of process is undesirable too. According to national instructions of natural delivery, after complete exit of baby, neonate should be placed on the mother's chest till to establish a skin to skin contact (27). The results our study have no compatibility with protocol of the country regarding a natural delivery which indicates that skin to skin contact of mother and newborn that should be done at the first opportunity, in the maternity hospitals of province of Khuzestan has been done not correctly by the delivery agents.

Putting neonate under radiant warmer immediately after the delivery in 379 (94.8%) of cases was done and in about 21 (5.2 %) was not performed, then process was evaluated in ideal. placing neonate under radiant warmer by the midwife next to the mother in 54 (13.5%) was done and in 346 (86.5%) was not

done, thus the process assessed as undesirable. In Plizban et al (2004), general prevalence of hypothermia was 53.3%, of which according researcher's idea, its reason might be lack of knowledge of the workers in childbirth room from severe complications of hypothermia (24). According Shrestha's study, conserving heat and prevent of hypothermia in neonate was 77.3 percent of which were favorable. Also drying the newborn infant and covering with a dry warm towel in 99.9% cases were done (23). In a study in Cameroon, warming the newborn and prevention of hypothermia was evaluated 100 percent done (28). In the present study only wrapping the baby in one of warm towel immediately after childbirth and putting the neonate under radiant warmer is consistent with Shrestha's results and regarding processes were evaluated ideal. Other care prevention of hypothermia has much distance from standards that it can be due to lack of training of personnels, inattention of to care givers to this important issue, the lack of facilities and equipments. In the year 1933 World Health Organization stated that hypothermia is one of the important reasons for death in neonates that, mostly related to lack of knowledge not due to lack of equipments (29). In the study of Najafi pour and his colleagues in the year 2011 with the aim to assess the amount of nursing care in compliance with prevention of hypothermia of newborn with the existing standards was done, they concluded that care prevention related neonatal hypothermia has much distance with claim standards (30). Mizzi et al in the year 2003, in their study stated that a high prevalence of the hypothermia (74.5 %) clearly shows inadequacy in heat care of newborn in first hours after the birth (31).

CONCLUSION

Measures taken in the field to prevent the hypothermia, 14.8 percent is consistent with the national standard state, which its reason can be due to lack of attention of care givers in this issue, inadequacy in education and the lack of facilities and equipment and lack of the midwifery personnel for taking care of the newborn. we should be ready before the delivery with doing some activities such as warming the delivery room, preparing guan and warm sheets, turning on the radiant warmer, as well as post delivery cares like putting the newborn in warm environment and removing their wet sheets and wearing warm clothes, hat, socks and using the warm sheet and blanket. Presence of researchers in the way of performance of personnel is one of limitations that in all studies can be observed, in which increasing number of observations and the lack of recording accurate reason of presence of researcher in a official letter, will be one of the

methods to reduce the impact of researcher on bias of the results.

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