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A SURVEY ON THE COMPLIANCE OF SERVICES PROVIDED TO HEALTHY BABIES WITH THE NATIONAL STANDARD IN HOSPITALS OF AHVAZ IN 2015

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ABSTRACT

Introduction: hospitals are the most important part of health care providers in the health system and health promotion services are the prospects for the future of hospital services in the health system; therefore, this study was performed aiming to determine the compliance of the services provided to healthy babies with a national standard in hospitals in Ahvaz in 1393. **Materials and Methods**: this descriptive study was conducted on 400 babies in hospitals with neonatal ward (with proportional allocation to each hospital volume in terms of the entrance criteria (term neonates, healthy infants, etc.) and exit criteria (infants that are recovered, disposal of thick meconium before delivery). Check List for collecting data was designed based on national standard instructions of healthy infant care service package and any processes related to infant care that were studied. After data collection by SPSS software, version 20, using descriptive statistics, they were analyzed. **Results**: Measuring child growth standards (57. 7percent), vital signs of newborns (45 .55percent), transferring the baby from the delivery room to the mother and baby roommate (61.2 percent), educating care for the baby to the mother (51. 3percent), educating mothers before discharge (62. 18percent) and the discharge of infants (52.13 percent) has relatively good compliance with the country standard. **Conclusion**: The care provided to newborns in hospitals in Ahvaz in 1393 in all cases had no favorable compliance with the standards of the country. According to the fifth Millennium Development Goals, more attention should be allocated to the infant care deficiencies.

KEYWORDS: healthy baby, compliance, standardization.

INTRODUCTION

In the current era, health is one of the main concerns of most governments, global change has created new challenges in the field of health and specifically in hospitals.[1] Hospitals are the most important part of health care providers and health promotion services are the prospects for the future of hospital services in the health system, that is why changing attitudes toward the role and capabilities of hospitals to become health promoting structures is essential.[2] Hospitals through participation in health can promote health in society.[3] It is estimated globally that about 99 percent of neonatal deaths in developing countries occur in places that vital events are not registered.[4] But in Iran, most births occur in hospitals and birth centers and maternal and child deaths occur mostly in hospitals and birth centers. From the view point of Rashidian (2008) and Kiasari (2009), the main causes of maternal and neonatal mortality was also not providing appropriate services in hospitals and birth centers[5-7] Thus, the role of nurses and midwives and their efficiency in neonatal care and consequently reducing mortality are among factors affecting the promotion of health in society.[7] Although many health and health care indices, especially indices of mortality and life expectancy have improved in recent years, but infant mortality indices that is a standard for the development of systems of health care, education and social for a country in more than a decade has not been decreased significantly.[5,8] And yet the maximum human infant deaths occurs in the first 24 hours of life and includes 65 percent of deaths under one year[9] Therefore, according to the World Health Organization recommendations and international obligations, there should be effective interventions aimed at reducing neonatal deaths in the neonatal health field. Undoubtedly, the first step in decreasing mortality and improving these indices is identifying the causes of mortality. In this context, many studies have been done inside and outside the country and a major cause of mortality and neonatal infections is expressed as pre-maturity and asphyxia.[20-19-18-17-16-15-14-13-12-11-10] In terms of infant mortality pattern, the most common cause of death in the country are pre-maturity, trauma during delivery, low birth weight, congenital anomalies,

infections, asphyxia and inefficient medical nursing and midwifery care have been reported[11] that is different from the pattern of mortality in developed countries (congenital anomalies) and developing countries (Infectious Diseases). This pattern represents the country epidemiological transition from infectious diseases to non-infectious disease. It seems that this pattern with regard to existing researches in different regions of the country and even in different hospitals is different due to various factors; maternal, newborn and medical care, nursing and midwifery before, during pregnancy, in the time of childbirth and infancy period on mortality of babies.[26-25-24-23-22-21,11-10] The adequacy of nursing and midwifery care is explained by standard clinical procedures. Standards provide the favorable nursing care level; In fact, the adequacy of nursing care is described by the standards of clinical practice. One of the common methods to improve quality assessment is auditing.[27] Auditing or clinical auditing is the process to improve the quality of clinical services that consist of a series of interconnected activities. Nursing and Midwifery assessment and auditing is one of the ways through which the strengths and weaknesses of Nursing and Midwifery Care are recognized[21] Since medical factors such as training and expertise of personnel and resources available to provide services have impact on infant mortality[1], The establishment of programs of improving quality and promoting services and supervising them, on the condition of continuation of the practice, could prevent hospital and modifiable factors to play a significant role; Then, the purpose of this study is to answer the question that how much consistent the services offered to healthy babies in hospitals of Ahvaz is with national standard?

METHOD

This descriptive study has been conducted after obtaining permission from the Jondi Shapoor Medical University of Ahvaz and heads of selected teaching hospitals of the University on 400 babies in hospitals with neonatal ward (three hospitals) with proportional allocation of each hospital (Imam Khomeini and Razi Hospitals, each 150 samples and Sina Hospital 100 samples) with respect to the entrance criteria (term neonates, healthy infants, normal weight, Apgar normal delivery of the baby to the baby ward) exit criteria (recovered infant, the disposal of thick meconium before delivery). Days of presence in each hospital were randomly selected by lottery. The researcher attended at neonatal units, at the same time, observed and recorded the care provided in the check list to measure its validity and reliability. The mentioned check list was designed according to standard package procedure of the country of healthy infant care service each of which of the processes related to the children care had their own list check. In these check lists, all the items that should have been done at the time of infant care were evaluated. For each of the 12 processes, 400 cases were examined separately. These processes include measurement criteria of the baby's growth, checking the vital signs of newborns and urinating and meconium, transferring the baby from the room after delivery to the mother's roommate and the newborn, immunization of neonates, injection of vitamin K, consulting and training breastfeeding to mothers, bathing the baby, umbilical cord care, thorough examination of the newborn, maternal education of the infant care while in the hospital, teaching mother before the baby's is discharged. At the end of the interviews with personnel, demographic features form was completed. In part two options, with Yes and No answers, were given 1 and 2 points for the parts of the three choices; Working in full, incomplete and lack of work Points 0, 0.5 and 1 were considered and at the end, points related to each section were calculated, divided by three and then were categorized into three levels; they were good compliance, average compliance and poor compliance. To provide validity of the information sheets, after reading books and articles and their healthy newborn care package in the country and the latest guidelines from the ministry in the field of newborn health care, information sheets and check list were prepared and were given to the 10 members of the Faculty of Nursing and Midwifery Ahvaz to study and modify and the final version was developed after carrying out the necessary reforms. In order to confirm the check list reliability, the method of contemporaneous evaluation was used. So, the researcher and a colleague of baby's ward recorded the results 10 check List gathered of the care observation of newborn infants who have been documented as inclusion of the criteria for this study using correlation coefficient, calculated its reliability. The data collected was analyzed using SPSS software, version 20, using descriptive statistics, including frequency tables, the relative frequency. Thus the scoring method was used and each check list was segregated into different parts. In each section by taking the sum of its following groups, the highest score expected will be calculated according to national standard. This article is part of a research project for a master's degree with the code of ethics 1394 .14 was accepted by Ahvaz University of Medical Sciences.

FINDINGS

The average age of the service providers to a healthy baby in this research was 33. 7± 8.7 years and work experience 8.3 ± 7.9 years. Providing services 77. 1percent by midwives, 11. 4nurses and 11. 4percent was done by a physician (table 2) Table 1 shows the demographic characteristics 400 babies studied. Measuring infant growth indices had compliance with standards of the country which were relatively favorable (Table 3) of the 18 items reviewed in this process, items like evaluation of growth criteria after the injection of vitamin K, washing hands before evaluation, the baby's properly heated environment (25-28degree Celsius) at all times of measuring, use their towels or weight fraction of the total weight, ensuring the accuracy of scales set after each placement of dry cloth, putting the baby there with no covering had poor compliance. It is worth mentioning that only in one hospital stadiometer was used from the

two hospitals under study. Examining the procedure of checking vital signs in infants and nutrition, urinating and meconium there was relatively good compliance with the national standard and the main reason of this result is a lack of vital signs measurement in two hospitals from three hospitals under study. In general terms only considering the measurement on a regular rhythm within 6 seconds (10×), informing the doctor if there was any abnormal symptoms (apnea, hypothermia, lethargy, vomiting,), informing the doctor in case of noticing abnormal color (cyanosis, pallor and jaundice) , the first study of urinating and pooping, in case of urinating and poop recorded in neonates in the first two hours, completing the form when you transfer the baby to the recovery ward after delivery, to be taken care of. Transferring the mother and baby after delivery to the recovery ward and signing a special form by the person responsible to take care of the baby and midwives of the transferee, has had good compliance. The review of process of transferring the baby from the delivery room to the under study hospital's roommate of maternal and neonatal the adaptation was relatively favorable and in regard to putting the baby in the mother's arm and baby and mother together transmission was undesirable compliance. Surveying the infant immunization compliance with the standards was desirable and process and in the case of washing hands with soap and water for each infant vaccination, vaccine vials check for the presence of particles and discoloration, checking the expiration date on vaccines, cleaning the injection site with alcohol cotton for BCG vaccine, hepatitis B vaccine aspiration was unsatisfactory compliance. The findings suggest favorable compliance in the fields injection of vitamin K1 in the under study hospitals with national standards, and in three cases, injection after the first feeding, washing hands with soap and water, controlling injections of vitamin K1 in terms of specifications (quantity, color) and expiration date there was poor compliance. Also, there was a good compliance between lactation education and consultation process with national standard in mothers and infants roommates and only about ensuring nose openness and encouraging mothers to continue breastfeeding the baby there was not a good compliance. And attention to the size of the mother's nipple and, if necessary guiding tips to only 27 mother was done that the proper guidance was provided to 25 people and two failed. In regard to the action if there is a problem in breastfeeding, according to national clinical guide breastfeeding begins within the first hour of life and the supporting and promoting breastfeeding book in baby-friendly hospitals, 204 cases had problems with breastfeeding that for 129 of them complete, to 69 about the deficit action was taken and for 6 cases ignored. Baby bathing process was not conducted in any of the three university hospitals and absolutely had poor adaptability at zero percent. In regard to the process of optimal care of the umbilical cord there was a favorable compliance and items of washing hands before baby care were among the deficits in the hospitals under study that had unfavorable compliance below 20%, respectively. The process of complete examination of children in teaching hospitals in Ahvaz had satisfactory compliance. The complete examination items of children, preferably the first 6 hours of life (32 .5percent); ensuring proper room temperature and not exposing infants to air flow (30.8 percent); warming up your hands before touching over the back of the baby (29.5 percent), heating checking equipment before contact with the infant (5.5 percent); cleaning the stethoscope and examination instruments with alcohol 70 degrees (3.75 per cent); Washing and drying your hands with soap and water before and between other babies examination (0. 75percent); Evaluation of the respiratory system (RR) (2.25%) and pulses, especially femoral pulse (6.75 per cent) were among the important issues that have had poor compliance. The process of teaching mother taking care of the baby during the presence period in the hospital had relatively proper compliance with the standards of the country. It is worth noting that only in a hospital, in addition to describing teaching, instructional videos were broadcast. The most important weaknesses were in the process of massaging the baby, how to establish and improve the relationship of parents and baby, baby wash after urinating and pooping, the correct approach to baby shower and the importance of preserving body heat, explaining the hazards of artificial milk bottles and dummies pacifiers and use different poses of lactation, milk quality measures, the introducing the book about how to take care of the umbilical cord, how to change diapers, baby cover, room temperature and then adjusting the training in 2 to 3 servings half an hour. The process of educating mothers before the discharge process had relatively favorable compliance with standards and poor compliance was not observed in any of the items in the process. The process of discharging children at hospitals under study has a relatively good compliance and one of the important reasons for the decline of conformity was absence of physicians in three hospitals is under investigation at the time of discharge as well as monitoring vital signs of the newborn (23. 8percent); and the question of a history of child abuse or neglect, lack of social support and a history of violence during pregnancy (24%), providing a telephone number to contact the hospital to mother in case of a problem (31%) and questions refusing the necessary follow-ups because of distance or lack of telephone number (27. 8percent) were among the hospitals' weak spots. The case of discharged 24 hours after delivery in the case of normal delivery and lack of problems for mother and baby113, in 241 total cases of vaginal delivery was done and in 128 the compliance protocol was not done. Discharging about 48 hours after delivery in case of delivery by cesarean section and no problems for mother and baby and only 104 of the total 159 mother-infant births were cesarean, and other cases were not performed according to standard protocol.

Table 1- Demographic characteristics of babies

Statistical indices variable	Mean ± SD
weight	(gr)3321.71± 8
height	5063 ± 5
head circumference measure	3.34± 40
Which child in the family	2.3 ± 1.22
Apgar score in the first minute	8.9± 0.2
Apgar score in the fifth minute	9.9± 0.1
Type of delivery	natural
	Caesarean section
Baby's gender	girl
	boy

Table 2-Specifications of the service provide

Statistical index variable	mean ± SD	
age	33.7± 0.37	
work experience	8.3 ±7.9	
field of study	midwifery	frequency (percent)
		27(77.1)
	nursing	4(11.4)
	doctor	4(11.4)
Grade	associate's degree	3(8.5)
	Masters	28(80)
	Subspecialty	4(11.4)
Contract status	Contractual	3(8.5)
	Official	14(40)
	treaty	8(22.8)
	Projective	10(28.5)
Responsibility	Delivery charge	5(14.2)
	Head of ward	2(5.7)
	Responsible for caring for baby	10(28.5)
	Post partum	11(31.4)
	Vaccination	3(8.5)
	surgery	4(11.4)

Table 3- Overall compliance with the national standard process of nursing care in teaching hospitals in Ahvaz

processes	The compliance with standards (percent)	Compliance status
Measuring child growth standards	57.7	Relatively favorable
Assessment of vital signs and infant feeding, urine and meconium	45.55	Relatively favorable
Room after giving birth to baby transmission of the mother and baby roommates	61.2	Relatively favorable
Immunization	79	favorable
Injection of vitamin K1	70.3	favorable
Breast-feeding counseling and education in the mother and baby roommates	74.8	favorable
Umbilical cord care	75.1	favorable
Thorough examination of children	77.87	favorable
Teach infant to the mother at the time of hospital care	51.3	Relatively favorable
Educating mothers before discharge	62.18	Relatively favorable
Discharge infant	52.13	Relatively favorable

DISCUSSION AND CONCLUSION

In this research the mean weight, height and head circumference (3321. 8± 387. 1g, 50.5 ± 2.6 cm and 34.3 ± 1. 4cm) with an average in Nayery et al study in 1388 (3122. 7 ± 650g, 49. 96 ± 3cm and 34.88 ± 1.5 cm) nearly matches[28] And the difference between healthy infant weight gain in this study stated is the decrease in cesarean section number.[2] Cesarean sections was of 39.8 percent that is not inconsistent with study of Totoonchian (42.3 percent)[29] and cause of the fall can be cited as the avoidance of elective cesarean delivery without medical need. The average number of offspring of mothers taking part in this study is 2.3 ±1.22, respectively. In Alizadeh study in 2010 and Simbar in 1386 the mean number of children was respectively, 1. 7 and 2, which correspond roughly to the current study (10-11). The average age of the service providers of healthy infants in this study was 33. 7± 8.7 years and work experience 8.3 ± 7. 9years. Providing services 77.1 percent by midwives, 11. 4 percent by nurses, 11.4 percent were carried out by a doctor. In terms of educational level, 8. 5 percent have an associate's degree, 80 percent of graduate and 11.4 percent were Pediatricians. Increasing levels of education can increase knowledge and awareness but more important is the application of knowledge in practice as the study of Arif and his colleagues (2010) showed that the medical team in Pakistan compared with midwives, nurses and health workers use their knowledge poorly at work.[30] Also Gebrizhper (2014) in a study in Ethiopia pointed the low knowledge in practice of residents, midwives, nurses in neonatal recovery.[21] Salame and his colleagues in 2005 in Lebanon expressed the acceptable level of knowledge of midwives but acknowledged low usage of knowledge in practice as a fundamental problem.[12] Simbar and colleagues (1392) also reviews the research on compliance with the standards of maternal care in three hospitals in Tehran; the majority of workers (57. 5 percent) had moderate knowledge and only 10% of them had a negative attitude towards labor and delivery care, national guidelines and statistical relationship between mean scores of knowledge of service providers and the implementation of care were significant statistically.[13] The weakness shows the vital need to improve the knowledge and skills through continuous training for all personnel of health care providers for mothers and their newborns. Accuracy in weighing babies is of particular importance in the health of infants and infant and it will assist in the growth pattern in the future.[31] In this they did not have some parameters due to the consideration of weighing factors by service providers. Hands play a major role in transmission of infection in the population[31] and in medical centers it takes a larger role.[32] The infection causes prolonged hospitalization, increased morbidity, side effects and mortality. Several measures have been introduced to prevent these infections[14,6] that includes hand hygiene as the most effective, simplest, low cost of these measures.[4,14,33] In a way it is known as an international priority to reduce health care-related infections.[35-34] Hand hygiene has an effective role as to reduce transmission of bacteria from the personnel to the patient in interrupting the chain of infection (5-7, 22). The results of the research suggest that hand washing alone can reduce infections by 30 percent (36, 4). In this study, Lam and his colleagues (2004) washing hands with soap and water reduced the transmission rates of infection in the hospital each day from 11.3 to 6.2 per 1,000 patient during the review period[36] As well as in the study of Zar and his colleagues (2005) in a children's hospital the infection decline rates was observed from 9.5 in 2001 to 2.2 in 2004 per 1000 discharged patients due to careful hand washing with soap and water or alcohol.[16] A study in Argentina (2015) stated that hand washing do not have a proper compliance in 11 hospitals in the city of Buenos Aires[37] In a similar study conducted by Uneke and colleagues (2014), stated that the compliance rate for hand hygiene of nurses (72. 9percent) was significantly higher compared with physicians (7.59 percent)[38] One of the most common problems during the newborn is jaundice, so that in the first week after birth in term infants seen 60% of preterm infants and 80%[40-39] epidemic jaundice in the first 24 hours, although not high, but is significant and shows the importance of careful and repeated examination and a special examination before discharge and also shows the importance of the minute decision making to take action for the infants with pathologic jaundice, are invaluable[9] Although infant vital signs examination, feeding, urinating and meconium showed relatively good compliance with standards, a detailed assessment of jaundice in the first 24 hours of infants was undesirable. In this regard Sajadian and colleagues (1391) reported that more attention of the nurses and doctors to jaundice risk factors plays an important role in the prevention of hospital readmission[41] the separation of mother and infant has hazardous consequences on different aspects infant's growth and development[18] Separation from the mother, lack of the mother's care or interaction will cause attachment disorder and complications such as failure to thrive, psychosocial dwarfism, separation anxiety disorder, avoidant personality disorder, other, crime, or Border line intelligence[42] In the present study, two cases of putting infant in the arms of mother and infant and mother together transfer had poor compliance. One of the major tasks in a hospital is the provision of facilities to protect infant and mother during their transfer to the section. Most mothers are concerned about separation from the infant and therefore the concurrency of their transfer reduces security problems and concerns of the mother.[43] Safety injection is considered as a right for patients and health care workers and is important to follow the standards to reduce high-risk behaviors. Since injections are the most common methods of drug administration and sometimes a lack of following the proper principles, according to the World Health Organization, injection causes morbidity and mortality. Familiarity and practice with the standards and principles of injections seems a necessary rule[44-45] Since 1999, the World Health Organization, aimed at programming the

optimal use of this method of treatment and safety of the injections, Safe Injection Global Network (SIGN).[46,44] In this program, safe injection is an injection that patients, staff and the community do not face any harm.[29] The first important step in a safe injection is the hygiene injector's hand person[48-47] In this study, the process of immunization had a proper compliance with the standards, but hand washing with soap and water for each infant vaccinations (1.7 percent), the survey of the vaccine vials for the presence of particles and discoloration (8.7percent), examination of expire date (8. 7percent), did not have a good consistency. The two researches of Pittet and Boyce showed that the nurses and doctors were quite knowledgeable of the importance of and hygiene preventing the epidemic infection but they had an improper practice[47-48], which is consistent with the current study. In a study in Tabriz, the rate of following the injection principle by nurses from three general aspects have been favorable: 1) Using sterile equipments 2) preventing contamination of equipment, medications and intravenous fluids 3) effective strategies to reduce risk behaviors of health care workers,[49] which is consistent with the current study. On the other hand, Shiva et al (1387) expressed as unfavorable the two medical clinic doctors and nurses awareness of safe injection.[45] Medication error applies to preventable any event during medication administration process that can lead to drug misuse or damage to the patient.[50-49] Most medication errors are due to non-compliance with the five correct act express (right patient, right medication, right dose, right time and right way), distraction and work interruption of nurses[51] Most of the researches, medication errors in infants' and children section are estimated to have been more than adult section.[52] Meanwhile, the precision in accuracy and the expiry date of vaccines and medicines required for babies due to the high cost is very important[63] which in the present study, in different processes, service providers did not have proper consideration. The United Nations issued a statement in 2007, saying, breast-feeding saves 3.1 million children's lives from certain death in the world. However, the malnutrition is the cause of more than 50 percent of deaths of children under age 5 in the world, with improvement of breastfeeding indices, exclusive mother breastfeeding and complementary feeding can daily save lives of five million children around the world[18] In the current research, there is a desirable compliance in the process of consulting and training breastfeeding in mother and baby roommate section with a national standard and just reassuring and encouraging mothers to continue breastfeeding and infant nasal clearance had poor compliance. Brown and colleagues (2003) also considered the activities and teachings of child-friendly hospitals in Brazil as insufficient to sustain exclusive breastfeeding for mother and announced the support after discharge as necessary.[54] In the study of Simbar and colleagues at the University hospitals of Kurdistan, breastfeeding teaching to mothers had poor compliance.[55] Examination in the early hours of infant life can specify the problems related to the transition from fetal to neonatal life and paying attention to the time of the examination, the possibility of early treatment and prevention of late complications can be prevented in the diagnosis.[39,56] In this study, there was a desirable concern to this process and in regard to some places there is a need to be more meticulous. One of the most critical stages of life is infancy that needs proper understanding and appropriate care to be provided. Mothers' knowledge of how to deal properly with the infant problems and how to provide necessary care during this period may raise the confidence of mothers in taking care of infant, to reduce maternal anxiety, the ability to communicate appropriately with the wife's husband, increasing the level of happiness and satisfaction and have an important role in overall quality of life for mothers and infant of mothers[57-58-59] In this survey, training mothers in hospitals under research had relatively good compliance.

The overall conclusion

The research results showed that the care provided to newborns in hospitals in Ahwaz in 1393 has satisfactory compliance with the standards. Given the importance of these services in reducing the risk of infection, disease, neonatal and infant mortality which are the fifth UN Millennium Development Goals and are among other indices indicative of developing countries, there should be more attention to deficiencies in care, and the identified results should be resolved by removing the cause. Among the limitations of this study may be a bias in the provision of services to healthy babies. So that after the presentation of a recommendation to the hospital and informed personnel of the aim the investigation it was possible that the personnel might tried to care based on standard guidelines country. While routinely, in accordance with state guidelines, they do not take the necessary measures. Among the strengths of research of observational prospective studies of scientific validity, are high accuracy and precision and this is one of the key strengths of this study. The first study was conducted in Ahvaz and on the other hand, there are a few cases of similar study in Iran evaluating the policies and formulated guidelines of healthy baby care and the manner of caring which were dealt with. Considering the presence of the researcher while observing the providing services to healthy babies, it could affect the performance of service providers so that they took care with higher quality during the process.

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