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ASSOCIATION MATERNAL FACTORS WITH DEVELOPMENTAL STATE IN ONE- YEAR-OLD CHILDREN WITH THE HISTORY OF HOSPITALIZATION IN NICU IN ARDABIL (2015)

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ABSTRACT

Background and Goal: Since the screening of all children is difficult, it is logical to evaluate the children with high risk. Hospitalization in NICU and maternal factors could effect on development state in children. This essay's goal is studying the association maternal factors with developmental state of one year old children with the history of prematurity at the first year of birth.
Methods: 350 children with the history of under 37 weeks birth and hospitalization in NICU are studied by filling the ASQ questionnaire in age of under one by their parents in five domains (communication, fine and sturdy movements, socio personal, problem solving) are studied and maternal factors by filling researcher made questionnaire from the child file and asking of mother. The data was analyzed by SPSS17 software and mean index standard deviation, frequency _ percent, independent T-test, Pearson correlation and one way ANOVA.
Results: The results of this study showed a significant association between socio_ personal and fine motor with variables of family income and mothers level education with socio_ personal and communication from ASQ conclusion questionnaire in children (P<0.05).
Conclusion: This study shows the preterm infants with the history of NICU hospitalization and prematurity are expose to the risk of development problems. So it's needed to regular follow up their development state especially socio_ personal after hospital discharge to on time diagnose and intervention to prevent the development problems at later ages.

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Introduction

Considering the development in technology, Medical care and health care to save the high risk infants and decreasing, there are some worries about development checking and medical intervention to development these infants life quality some years later [1].

Generally, according to the latest statistics, 12/9 million births out of 121 million infants in world are immature, that it is reported 9/6 to 11/8 percent immature born in Iran [2].

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In Iran the survival of immature infants is (96/4) and extremely immature (66/6) [3]. Beside the increase of survival and decrease of morbidity in immature infants, the financial and social problems with nerves _ development problem are other side effect of immature born that are more danger of long term side_ effect [4].

The recent research show that low birth weight infants are expose to the risk of physical and nerves pathological disease that can cause to secondary mental and physical disability such as cerebral palsy, recognition problems ,blindness, deafness or in short term memory language delay, learning problems and behavioral problems[5] .

As it is difficult to estimate these infants survival, predicting their natural development is difficult too [6]. Hospitalization in NICU, parturition events and maternal problems can effects infant development state in the future. The risk factors for development delay are, the mother age in pregnancy, mother disease like (diabetes, blood pressure), asphyxia, preterm delivery, infant jaundice and brain malformation such cerebral hemorrhage [7].

Generally considering different risk factors for infant's brain development such as free radicals, immature brain, hypoxia and other problems in NICU, the hospitalized children are in danger of development problems unpredictably [8].

The on time diagnose and early intervention are the best ways of increasing the cognitive skills of delayed development children and the children with low birth weight [9].

Immature and hospitalized infants following up in nerve developmental problems in different time periods after birth is necessary and should take as monitoring and evaluation programs in neonatal unit to make their development natural specially in the age under one_ year _ old[10].

Because the medical care (Development) is expensive so they are not done regularly. The screener questionnaire is economical and beside it increase the accuracy in higher due to evaluating more behavioral [11].

A confirmation matter shows the importance of follow up in low birth weight infants, due to high number of immature infant birth, the studies in this field were studied limited in Iran and there is no enough information about the effect of NICU hospitalization. So the goal of this is association maternal factors with development state of one_ year_ old children hospitalized in NICU.

Materials And Methods

The present study is an analytic anticipant study. It has done in 2014-2015 in accessible method in Bu _ Ali hospital. The cases of study were 12 month-old infants with the history of immature birth and hospitalization in NICU. Since there is no other same study so the sample size is pilotly30 infants. Considering α= 0.05 exponent 80 percent and six main anticipant variables on one depended variable with 20% in main size, the final number was 350 infants.

1.1. Collection of children samples

After coordination with the responsible, researcher has gone to receptionist of Bu _Ali hospital and extracted the files of immature born infants and called the suitable people with these conditions (under 2 kg. weight, absence of genetic and congenital chromosome disorder, at least 10 days hospitalization in NICU). During the phone calls the goals of study is explained to the mother.

2.1. Analyses of children samples

The volunteer mothers were invited to the children Unit After filling the testimonial, the filling method of ASQ (Ages and stages Questionnaire) was learned by babysitter at the same time researcher studied and checked maternal factor and completed by researcher based on documents. Maternal factors include 11 questions (mothers age, pregnancy frequency, childbirth frequency, the number of live children, kind of childbirth, reason of c- section, reason of preterm delivery, in cause of sac tear , the duration of PROM, delivery (child birth) events, way of pregnancy, mother's abortion, family income, mothers education, parents development disorders history).

3.1. ASQ Questionnaire

ASQ is used in this study to screen the one – year – old children's development state. It had 30 questions in 5 realms. 6qs in communication, 6qs in gross motor, 6gs in fine motor, 6qs in problem solving, 6qs in socio_ personal.

Each question had 3 answers "yes" 10 scores (child can do the considered activity) "sometimes" 5 scores (child starts partly to do the activity) "Not yet" o scores (child hasn't started to do the activity).

The screener ASQ test uses cut – off points to determinable the child follow up and development. The cut – off points are the scares that distribution each age groups different realms average function.

The cut – off points of Ages and stages questionnaire for Iranian children is recorded in two columns of (-1SD) and (-2SD) for each age.

If the score in each realm of evolution equals or is more than (-1SD) cut – off point, the child doesn't have problem.

Equal or less then (-2DS) means the child should be followed up and evaluate more exact.

Between (-1SD) and (-2SD), parents should practice with children to learn (way for finding children talent) then after two weeks the test is taken again if score is not equal or move than (-1SD) and stay between (-1SD) and (-2SD), the child will refer to exact follow up and evaluation.

The ASQ that is localized for one – year – old children is admitted by Healthcare ministry in 2007[12].

4.1. Statistical analysis

The collected data was analyzed by SPSS17. The used statistic methods (meant, standard deviation, frequency – percent)and independent T_ test and one way ANOVA analytic test compare quantity variables among independent groups, and Enter synchronic linear regression in used for studying the predicting factors. In this study P<0/05 is statistically significant.

Results

The studied children were 54/2% females and 45/8% males. The mean and SD of children age was 1/2 ± 0/3 year. Their mothers age mean and SD were 28/6 ± 5/31 year old. 26/9% of mothers had history of abortion and 75/1% of mothers had one live child. 65/1% of mothers had twice pregnancy and 63/3% of mothers had 2 childbirth (delivery). The mean of family's income was 300 dollar. Majority of mothers level education was diploma and under diploma. In hospitalization 59/2% receipted oxygen. 53/6% of infants were 2 days on oxygen therapy.

43/4% of children were in NCPAP and 46/2% were mechanically conditioned once in average. 73/3% of children receipted surfactant. 9/2% of children were blood transfused and 14/3% of children's blood sugar was under 40. 13/3% of children had seizure and all of the children had oral independent feeding after discharge.

Fig.NO.1. some children features and events during hospitalization at birth time

SD ± mean	Variable	
40 ± 2/9	Birth height (cm)	
30 ± 1/4	Birth head circumference (cm)	
32 ± 2/1	Age based on pregnancy weeks	
1600 ± 354	Birth weights (gr)	
12/7 ± 2/1	Bilirubin rate of infant	
15 ± 3/5	NICU hospitalization duration(day)	
Frequency(percent)		
52 (43/3%) 11 (9/2%) 7 (5/8 %) 11 (9/2%)	First stages of heart Massage PPV Use Drug	Resuscitation stages prescription

The results of this study shows that Family's income and Mother's level education are predicting factors of development state in children in this way: (figure No.2)

Fig.No.2. The relation of Maternal Factors with each realm of developmental states

B	P value	Regression	R^2	Developmental	Maternal Factor
0/23	0/08	0/009	0/091	Socio _personal	Family's income
0/08	0/051			Fine Motor	
0/16	0/14	0/007	0/082	Socio personal	Mothers level education
0/15	0/15			Communication	

Conclusion

The result of this study can't be included to the infants of low that 1 kg .birth weight and under 30 weeks gestational age, because there were no cases with these feature hospitalized. It's suggested to study Cohort studies for the development of preterm infants with the history of NICU in long term follow up until the age of school.

Discussion

The present study, Association maternal factors in children with development state:

The result of this study shows that there is correlation between mother level education with socio_ personal and communication and family income with socio_ personal and fine motor.

In Olivieri and et al (2012) on 120 seven years old children by questionnaire shows that socioeconomic state and mother level education are effective factors on cognitive functional of premature children[13].

In Soleimani and et al. (2009) study on 3000 premature infants (under 2500 gr) shows that significant relation movement development disorder with sac_ tear in mothers [14]. But in this present study was not meaningful correlation cause of low frequency.

The result of this study can't be included to the infants of low that 1kg.birth weight and under 30 weeks gestational age, because there were no cases with these feature hospitalized. It's suggested to study Cohort studies for the development of preterm infants with the history of NICU in long term follow up until the age of school.

The Final Conclusion

The results of this study shows that the preterm infants with the history of NICU hospitalization are expose to the risk of development problems. So it's needed to regular follow up their development state after hospital discharge to on time diagnose and intervention to prevent the development problems at later ages.

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References

1.Vameghi,R ., Sajedi , F.,Shahshahani ,S.,& Biglarian , A.(2015). Validity and Reliability Determination of Parents Evaluation of Developmental Status (PEDS) in 4-60 Months old children in Tehran. Iranian Rehabilitation Journal. 13(2).

2. Sajedi F,Vameghi R,Mohseni Bandpei MA,Alizad V,Hemmati Gorgani S,Shahshahani Pour s.Motor developmental delay in 7500 Iranian infants ;Prevalence and risk factors .Iran J Child Neurol 2009;3(3):43-50.

3. P-Carcelen M ,Jackson DS,Goran MI,Royal SA,Mayo MS,Nelson KG.Growth of adolelescents who were born at extremeley low birth weight without major disability .J pediatr.2000;136:633-40

4. Goven TA, Lui K. Longitudinal motor development of "apparently normal" high- risk infants at 18 months,3 and 5 years. Early Hum Dev.2002 Dec;70(1-2):103-15.

5. Aylward GP,Hatcher RP,Leavitt LA,et al. Factors affecting neurobehavioral responses of preterm infants at term conceptional age. Child Dev.1994; 55(4):1155-65

6. Dorling JS,Field DJ:follow up of infants following discharge from the neonatal unit:Structure and process.Early Hum dev 2006;82,151-156.

7. Soleimani F.Developmental outcome of low- birth- weight premature infants.Iran J pediatr 2007; 17(1):117-25

8. Sola, A.; Rogido,MR.; Deulofeat,R., Oxygen as a Neonatal Health Hazard: Call for Detente in Clinical Practices.Acta Paediatrica,2007,96:801-812.

9. Agarwal P,Lim SB,Long term follow up and outcome of extremely low birth weight (ELBW) infants.Ann Acad Med Singapore2003;32(3):346-53.

10. Russell RB, Green NS, Steiner CA, Meikele S, Howse JL, Poschman k ,et al.Cost of hospitalization for preterm and low birth weight infants in the United States.Pediatrics 2007; 120(1):e1-9.

11. Ballot DE,Potterton J,Chirwa T,Hilburn N,Cooper PD.Developmental outcome of very low birth weight infants in a developing country. BMC Pediatr 2012; 12:11.

12. Kerstjens JM, Bos AF, ten Vergert EM,de Meer G,Butcher PR,Reijneveld SA.Support for the global feasibility og the Ages and Stages Questionnaire as developmental screener. Early Hum Dev.2009 Jul;85 (7) :443-7.

13. Olivieri, I. , Bova , S , M., Urgesi, C., Ariudo, G., Peretto, E., Fazzi, E., …& Orcesi, S .(2012). Outcome of extremely low birth weight infants: What's New in the third millennium? Neuropsychological profiles at four years. Early human development, 88(4), 241_ 250 .

14. Soleimani F, Vameghi R, Dadkhah A.High risk infants referred to health care centers in north and east of Tehran and risk factors of motor developmental delay. Hakim Res J2009;12(2):11-8