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Research Article

A STUDY OF THE ROLE OF KANGAROO MOTHER CARE IN REDUCING THE MORTALITY OF LOW BIRTH WEIGHT INFANTS DUE TO PRETERM BIRTHS

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Abstract:

Introduction: This study analyses the impact of kangaroo mother care in reducing the mortality of low birth weight infants due to premature births.

Methodology: This study uses cross-section secondary data obtained from KMC program done under unicef in tertiary care hospital in Lahore. These study includes 102 patients under the KMC program in Pakistan. The methodology includes two equations which are estimated jointly using three stages least square method in Statute ANOVA analysis for the study is not a suitable study because it analyses variations between two groups while in this study our aim is to understand the impact of independent variables on dependent variables. Ordinary Least Square procedure is other most used estimation technique in cross-section data. This study consists of two equations given in the model section. After regression the two equations, the error-terms from the two equations were found highly correlated. The coefficient of the correlation is 0.93. Therefore, to capture effect of cross correlation joint estimation of the two is most suitable.

Results:

This part presents the estimates of the proposed model, statistical significance, model selection criteria, and results of test and biological interpretation of the findings. The highest number of babies with kangaroo mother care survives which deliver in the 38 weeks of pregnancy where mortality rate is also low in 35th and 36th weeks of delivery of babies having kangaroo mother care. The infant mortality rate with prematurity and congenital anomalies is highest in deliveries of 35th week babies. The baby girls have the highest mortality in congenital anomalies of 35th weeks of pregnancy and in diarrhea 36th week. The mortality rate is on higher side in baby boy with birth asphyxia and congenital anomalies in 36 weeks of pregnancy. Kangaroo mother care indicates positive impact on growth and survival of premature baby. This method is very significant in reducing infant mortality in Pakistan. We need to initiate similar projects in other hospitals so that more of the premature babies can be saved and people avail this service as nearest as possible.

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INTRODUCTION:

KMC is a strategy for care applied on babies, typically on a preterm newborn child, where the baby is held skin to skin (STS) with his mom, father, or substitute parental figure. KMC was at first created in Colombia as an approach to keep stable preterm newborn children warm and diminish time spent in healing center conditions. Kangaroo Mother Care is not restricted exclusively to conditions where births are questionable or inaccessible, however is practiced in driving neonatal focuses everywhere throughout the world. Research directed worldwide has immediately uncovered that this exceptional method for holding your newborn child extraordinarily affects preterm babies.

A child is held in constant STS contact as near 24 hours per day as conceivable with his mom. This is refined by setting the infant in the kangaroo position, an entirely upright position and stomach down (inclined) on the parent's uncovered body. Innovation can be included as required. Elite breastfeeding is the perfect. The mother may lean back in a seat with cover hung over her body or she may stand upright if sling or wrap is accessible. KMC is performed through STS contact between the child's front and the parent's body. The more STS contact, the better. For comfort a little nappy is fine, and for warmth a top might be utilized. STS contact ought to in a perfect world begin during childbirth, however is useful whenever. It ought to in a perfect world be consistent day and night, yet considerably shorter periods are as yet accommodating.

Early Essential New-born Care (EENC) is method in which each newly born infant is directly placed in skin-to-skin contact with mother. EENC ought to be applied quickly after the child is delivered and proceeded for in the initial 60 to 90 minutes after birth. Numerous EENC intercessions are straightforward and can be given by a Skilled Birth Attendant (SBA) or a prepared Community Health Worker (CHW) or Traditional Birth Attendant (TBA) or by a relative supporting the mother in a care office or at home. In developing worlds, different investigations of changing methodological soundness have discovered comparative outcomes concerning diseases. Concentrates in well off nations have not discovered huge change in bleakness, but rather benchmark care has still neglected to outflank KMC. Current confirmation demonstrates that KMC is in any event on a par with standard care (Conde-Agudelo, Díaz-Rossello et al. 2003).

These are only a couple of explanations behind altering and changing our human services rehearses; to give each child the best begins. The greater part of the above is substantial advantages for every newly delivered infant. For a delicate and touchy preterm child, STS contact after childbirth is significantly more vital for adjustment and limiting anxiety. On the off chance that innovation should be included, it ought to be done on parent's body, the child's SAFE place.

Kangaroo mother care is a pioneer preterm baby care project in Services Hospital Lahore, Punjab. The purpose of the project is to overcome the high infant mortality rate in Pakistan. Better results of the KMC project can ensure the continuity and expansion of the project in other cities of Pakistan. Therefore, a research study on its performance will help to control the flaws and improve its efficiency. Being pioneer in its nature, this research study is highly significant.

Agudelo and Rossello (2012) carried on an investigation to screen KMC to lessen dreariness and death in LBW children. The targets of the examination were to decide if there was confirmation to help the utilization of Kangaroo Mother Care in Low Birth Weight newly born children as another option to regular infant care. The investigation utilized standard inquiry procedure of the Cochrane Neonatal Group. This included ventures of MEDLINE, EMBASE, LILACS, POPLINE, CINAHL databases (from origin to January 31, 2011), and the Cochrane Central Register of Controlled Trials (The Cochrane Library, Issue 1, 2011). What's more, they looked through the site page of the Kangaroo Foundation, gathering and symposia procedures on Kangaroo Mother Care, and Google researcher. The examination utilized determination criteria to Randomized controlled trials looking at Kangaroo Mother Care versus ordinary infant care, or immediate beginning Kangaroo Mother Care (beginning inside twenty four hours after delivery) versus delayed beginning Kangaroo Mother Care (beginning following twenty four hours after delivery) in Low Birth Weight newly born children.

METHODOLOGY:

Data: This study uses cross-section secondary data obtained from KMC program done under unicef in tertiary care hospital in Lahore. This study includes 102 patients under the KMC program in Pakistan. The methodology includes two equations which are

estimated jointly using three stages least square method in STATA.

Estimation: The ANOVA analysis for the study is not a suitable study because it analyses variations between two groups while in this study our aim is to understand the impact of independent variables on dependent variables. Ordinary Least Square procedure is other most used estimation technique in cross-section data. This study consists of two equations given in the model section. After regression the two equations, the error-terms from the two equations were found highly correlated. The coefficient of the correlation is 0.93. Therefore, to capture effect of cross correlation joint estimation of the two is most suitable.

Furthermore, we imposed some pre-restrictions on the model: firstly, the age of the mother has same impact in the both equations because this factor is included to check its impact on baby’s growth before birth secondly premature births have same effect in the both equations. Due to stated concerns, three stage least square methods are employed. Firstly, we estimate the unrestricted model and test the proposed restrictions using Wald test. Than we apply the statistically significant conditions to estimate final model. If all of proposed conditions fail, we accept the unrestricted model.

Three Stage Least Square Procedure: Three Stage Least Square Procedure obtains three stage least squares estimate of a set of linear or nonlinear equations. Three stage least squares estimates are consistent and asymptotically normal, and, under some conditions, asymptotically more efficient than single equation estimates. In general, 3SLS is asymptotically less efficient than FIML, unless the model is linear in the parameters and endogenous variables. The actual method of parameter estimation is the Gauss-Newton method for nonlinear least squares. If the model is linear in the parameters and endogenous variables, only two iterations will be required, one to obtain the covariance matrix estimate and one to obtain parameter estimates.

RESULTS:

The descriptive analysis represents the detailed overview of the data of kangaroo mother care. The minimum age of the mother is 20 years whereas the maximum age is 47 years with mean 32.8 and standard deviation of 5.8. The duration of pregnant mother included in this study range from 35 to 38 weeks. The mean weight of newborn baby in kilogram is 2.9 whereas mean gain of weight after kangaroo mother care is 3.1.

Table-1 Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
age of mother	102	20.00	47.00	32.8725	5.81849
duration of pregnancy	102	35.00	38.00	36.2941	.98089
new born weight in kg	102	2.40	3.90	2.9784	.37539
gain in weight in kg	102	2.60	3.90	3.1088	.34758
Valid N (listwise)	102				

Table-2: represents the percent gender of the baby included in the study. 54.9 percent of total babies are baby boy whereas 45.1 % is baby girl.

Table-2 Gender of baby

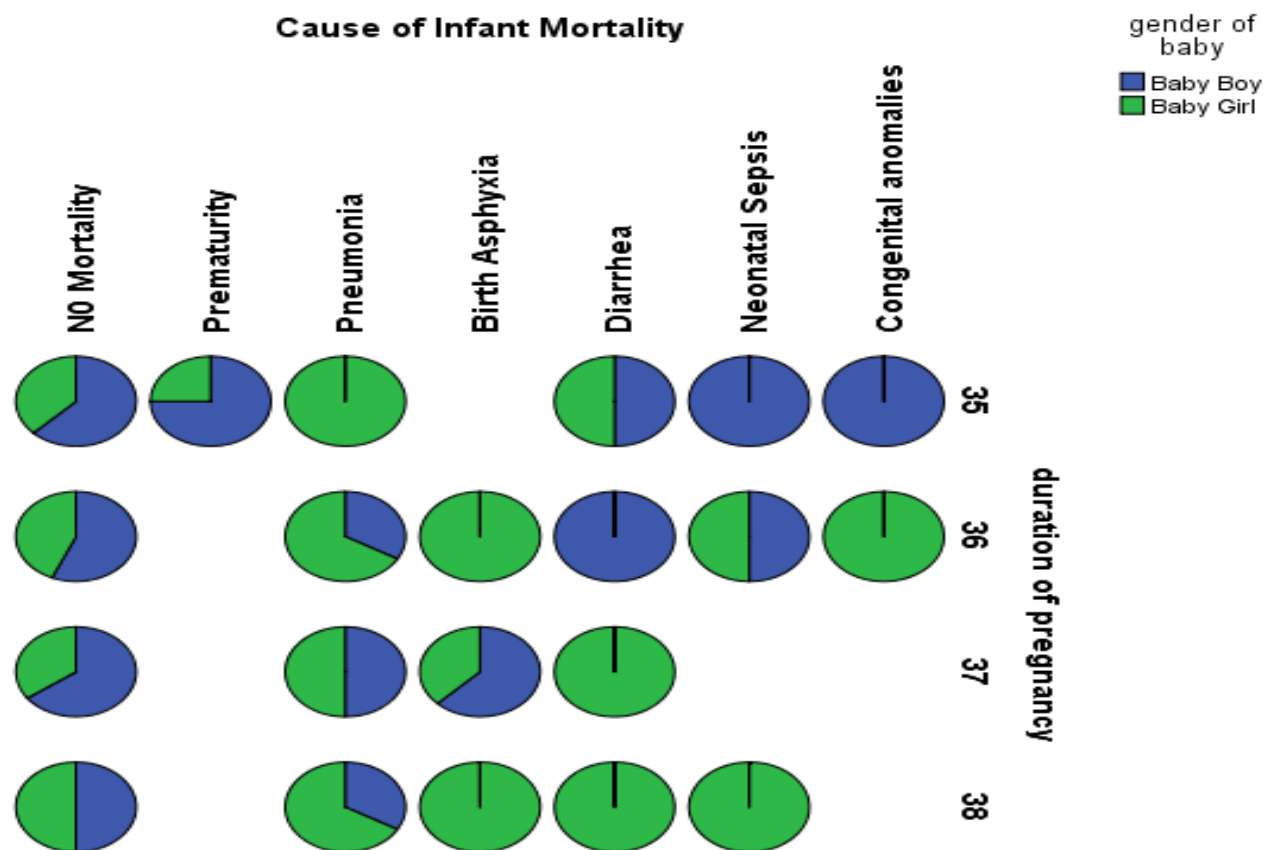
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Baby Boy	56	54.9	54.9	54.9
Baby Girl	46	45.1	45.1	100.0
Total	102	100.0	100.0	

Table-3 indicates the percentage of the cause of the infant mortality. The common cause of infant mortality is birth asphyxia which is 10.8 percent. Whereas the lowest percentage of infant mortality is congenital anomalies.

Table-3 Cause of Infant Mortality

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
NO Mortality	65	63.7	63.7	63.7
Prematurity	4	3.9	3.9	67.6
Pneumonia	9	8.8	8.8	76.5
Birth Asphyxia	11	10.8	10.8	87.3
Diarrhea	6	5.9	5.9	93.1
Neonatal Sepsis	4	3.9	3.9	97.1
Congenital anomalies	3	2.9	2.9	100.0
Total	102	100.0	100.0	

Figure-1



The pie chart below correlates the cause of mortality with gender of the baby along with duration of pregnancies of the mothers included in this study. The highest number of babies with kangaroo mother care survives which deliver in the 38 weeks of pregnancy where mortality rate is also low in 35th and 36th weeks of delivery of babies having kangaroo mother care.

The infant mortality rate with prematurity and congenital anomalies is highest in deliveries of 35th week babies. The baby girls have the highest mortality in congenital anomalies of 35th weeks of pregnancy and in diarrhea 36th week. The mortality rate is on higher side in baby boy with birth asphyxia and congenital anomalies in 36 weeks of pregnancy.

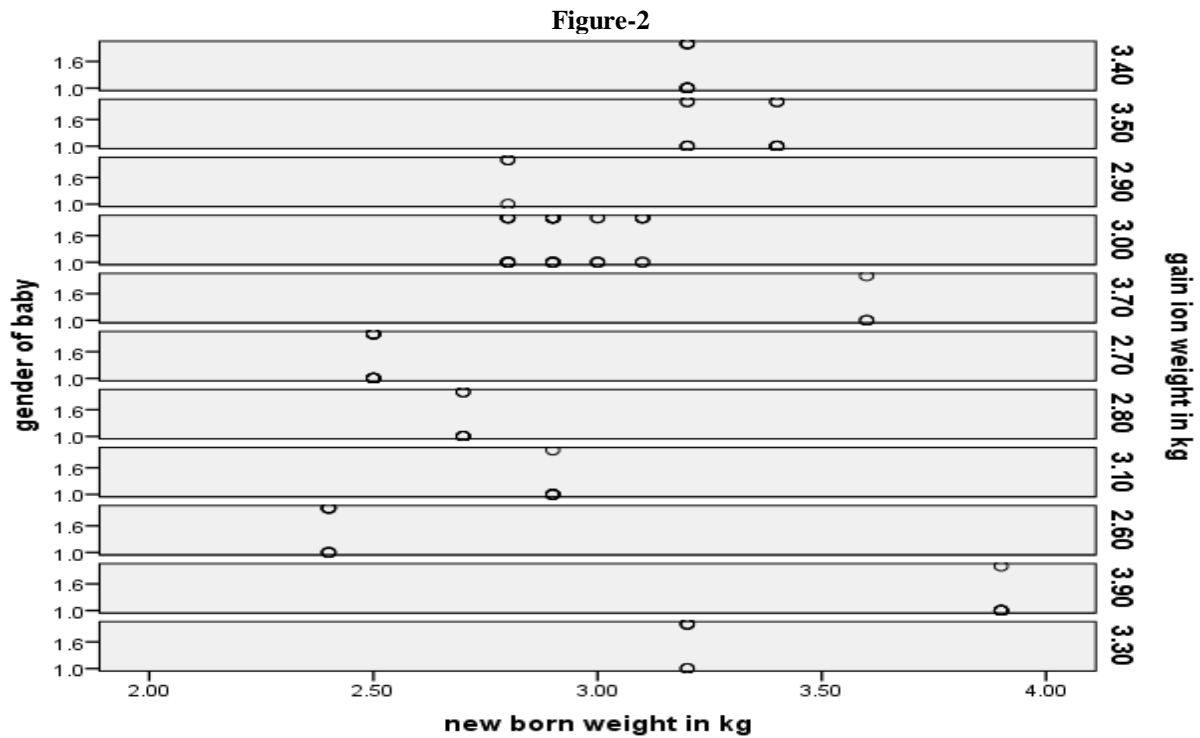


Figure-2 shows the weight of the babies at birth and the resultant gain in weight of the babies having kangaroo mother care of both genders.

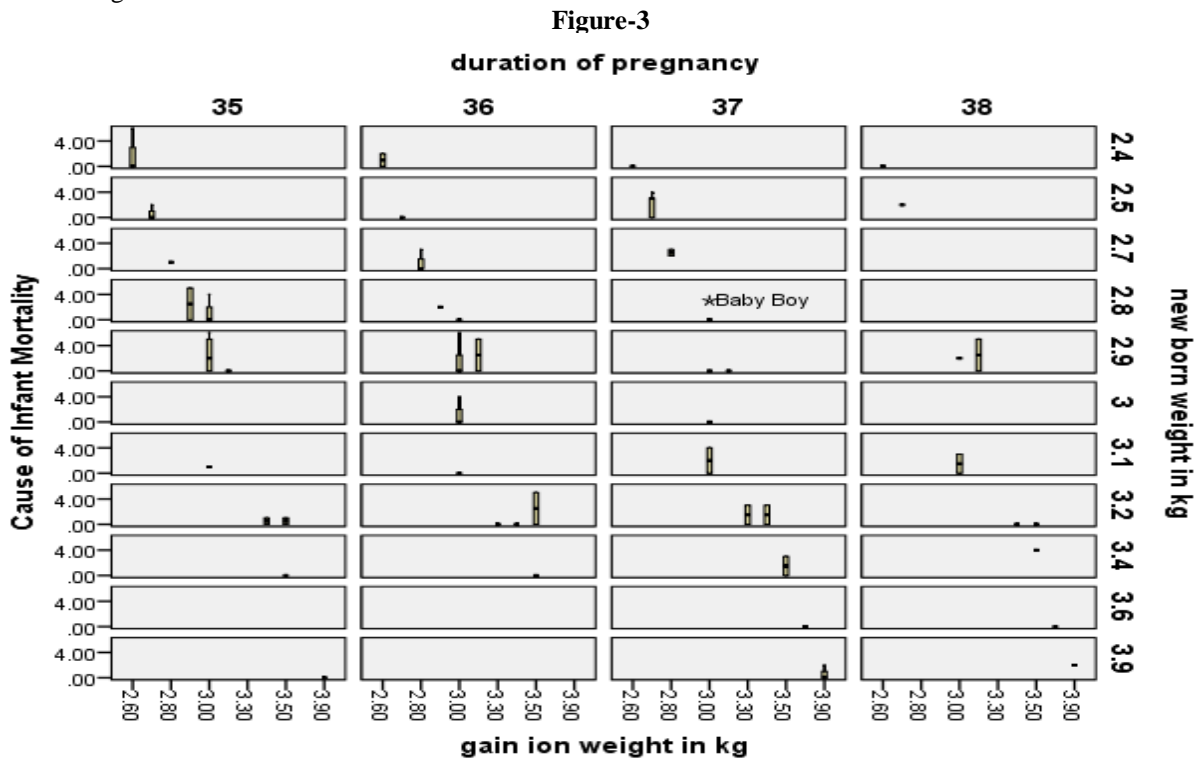


Figure-3 shows the cause of infant mortality with duration of pregnancy. It also correlates the weight of babies at birth and gain in weight of the babies with kangaroo mother care.

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