Original Article

Community Medicine

Maternal Age & Parity as Risk Factors for Preterm Births & Low Birth Weight among Newbornes Delivered in Outskirts of District Mirpurkhas

1. Khalida Naz Memon 2. Saeeda Memon

1. Asstt. Prof. of Community Medicine, LUM&HS, Jamshoro, Hyderabad 2. WMO, C.D.F Hospital, Hyderabad

ABSTRACT

Objectives: To estimate the frequency of preterm births & low birth weight occurring in union council Jhudo, District Mirpurkhas. To seek association of preterm births & low birth weight with maternal age & parity.

Study Design: Descriptive cross sectional.

Place and duration of Study: This study was conducted at Union council Jhudo, District Mirpurkhas. From June 2012 to September 2012.

Materials and Methods: Three hundred households having a new born of age upto seventy two hours. Subjects were selected through convenience sampling method.

Results: Among total of three hundred, the frequency of preterm births was 37 (12.33%); while the frequency of low birth weight was 83 (27.66%). All the preterm babies were low birth weight. There were 121 women (40.33%) at advanced age, among them preterm delivery was recorded in only 17 women (14.04%) (p=0.16). Low birth weight babies were delivered to 31 women at advanced maternal age (25.61%) (p=0.04). Among three hundred recently delivered women, 113 were primipara (37.66%) , 98 (32.66%) were multipara & 89 (29.66%) were grand multiparas. Primiparity was seen statistically significantly associated with low birth weight (0.02); and as parity increased, it did not show significant association with low birth weight.(p=0.12).

Conclusion: Low birth weight & preterm births are still major public health problems in our community. The advanced maternal age & high parity are the risk factors for them in rural & semi-urban areas.

Key words: Pregnancy, risk factors, maternal age, parity, prematurity, low birth weight.

INTRODUCTION

Preterm birth is defined as live birth before the completion of 37 weeks of gestation. A pre term birth before twenty eight weeks of gestation is called "extremely preterm birth". Every year, an estimated 15 million babies are born preterm and this number is rising day by day. Across 184 countries, the rate of preterm birth ranges from 5% to 18% of babies born[1].

An estimated 1 million babies die annually from preterm birth complications. Preterm birth is the leading cause of neonatal deaths and the second leading cause of death after pneumonia in children under five years of age. It is estimated that 75% of such unfortunate deaths could be prevented by cost-effective interventions, even without intensive care facilities. Low birth weight (LBW) is defined by World Health Organization (W.H.O) as birth weight less than 2.5 kg[2.]

It has been witnessed since many decades that an increase in mean maternal age at childbirth resulted in several adverse maternal and perinatal outcomes[3]. Advanced maternal age, defined as age 35 years and older at estimated date of delivery, has become increasingly common[4]. Young maternal age is now a day considered as a reproductive advantage with regard to adverse pregnancy outcome[5]. Although the advanced maternal age itself is related to preterm pregnancies & other bad pregnancy outcomes, but higher parity potentiates this effect of advanced maternal age. Parity modifies the effect of older maternal age on preterm birth and low birth weight[6]. There are discrepancies in the way clinicians & obstetricians define parity. A commonly used clinical definition of parity is the number of births (both live born infants and stillbirths) of at least 20 weeks of gestation that a woman has experienced[7]. Nulliparas are those who have experienced no such births, primiparas have experienced one such birth; while multiparas have experienced more than one such birth . The aim of this study was to determine the frequency of pre term labor & low birth weight deliveries & their relation with maternal age & parity among women residing in union council Jhudo, district MirpurKhas.

MATERIALS AND METHODS

It was a community based descriptive cross sectional study conducted in the households of Union council Jhudo. There are in total sixty four Basic Health Units (BHUs) & ten Rural Health Centers (RHCs) in District Mirpurkhas[8]. According to the 1998 census of Pakistan, it had a population of more than 1.5 million[9]. Jhudo is one of the six talukas of district Mirpur Khas & it is

administratively divided into six union ccouncils. We selected the Union council Jhudo for our study purpose. According to census 1998, the estimated population of UC Jhudo is 38,269 [9].

Study Population: We selected three hundred households from different mohallas of specified study area. The households were selected through convenience sampling; it was ensured that there had been birth of a baby within three days of data collection.

Inclusion Criteria: All those households where consent was given for study, a new borne of age upto seventy two hours, preterm births, and low birth weight deliveries, singleton deliveries conducted in homes or in hospitals.

Exclusion Criteria: All unwilling families, multiple pregnancies & the deliveries other than inclusive criteria were excluded from the study.

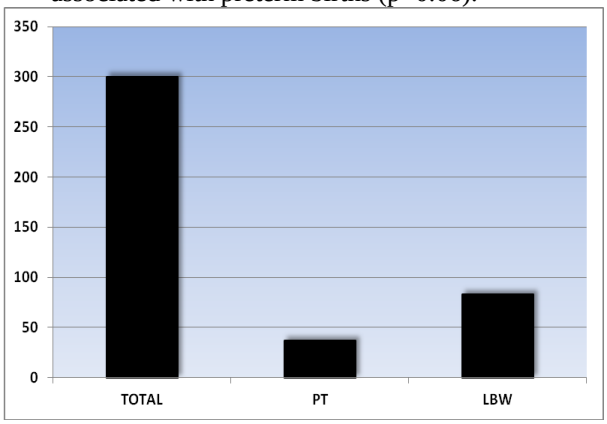
Data Collection and Analysis: Data was collected through a pre-designed proforma after taking informed consent for participation in the study. Cases of pre term & low birth weight deliveries were registered for study. All the relevant maternal information was also recorded. Preterm birth was determined by obstetrical history, by obstetrician's examination findings or ultrasound report. Birth weight was either determined by new bornes' birth records or it was determined by data collectors themselves. The information was kept secret. The data was first edited in MS excel & then entered in SPSS version 16.0 in form of code numbers. Frequencies were calculated in terms of percentages; the associations of qualitative variables were analyzed by applying Chi-squared test; the continuous variables like maternal age & birth weight etc were analyzed by computing means & standard deviations. The p-value of <0.05 was taken as the level of statistically significance.

Variables:

1. Maternal age.
2. Parity of mother.
3. Preterm births.
4. Low birth weight deliveries.

RESULTS

1. A total of three hundred mothers & their babies were registered in the study.
2. The frequency of preterm births was 37 (12.33%).
3. The frequency of low birth weight was 83 (27.66%). There was no extreme low birth weight. All the preterm babies were low birth weight.
4. Among three hundred women recently delivered, there were 121 women (40.33%) who were of advanced age ie their age was equal to or more than thirty five years. The ages of women varied with a mean of twenty eight years with standard deviation of 2.3 years around the mean.
5. Among total 121 mothers at advanced age, preterm delivery was recorded in only 17 women (14.04%) (p=0.16).
6. Low birth weight babies were delivered to 31 women at advanced maternal age (25.61%) (p=0.04).
7. Among three hundred recently delivered women, 113 were primipara (37.66%) , 98 (32.66%) were multipara & 89 (29.66%) were grand multiparas (women previously having >5 live births).
8. Primiparity was seen statistically significantly associated with low birth weight (0.02); but as parity increased, it did not show significant association with low birth weight.(p=0.12).
9. Parity of women was not statistically significantly associated with preterm births (p=0.06).



PT: Preterm births LBW: Low birth weight

Graph No.1: Distribution of preterm births & low birth weight deliveries in study population

Table No.1: Distribution of preterm births & low birth weight deliveries among study population

Maternal characteristics	Total number	Number of preterm births	Number of low birth weight
Number of Women at Advanced Maternal Age	121	17 (14.04%)	31 (25.61%)
Parity of women			
Primipara	113	12 (10.61%)	67 (59.29%)
Multipara	98	17 (17.34%)	09 (9.18%)
Grand multipara	89	08 (8.98%)	07 (7.86%)

Table No.2: Maternal Age & Parity among Study Population

Maternal characteristics	Frequency	%
Advanced maternal age	121	40.33%
Parity of women		
Primipara	113	37.66%
Multipara	98	32.66%
Grand multipara	89	29.66%

DISCUSSION

The study conducted among three hundred women residing in union council Jhudo revealed total 37 (12.33%) preterm births while total number of low birth weight deliveries was 83 (27.66%) (Graph I). Preterm births as well as low birth weight deliveries are the major public health problem which not only increase the death toll among new bornes but also lead to frequent short interval pregnancies thus endangering the maternal health, too.

According to World Health Organization (WHO), Pakistan is in the list of first ten countries having the highest rates of preterm birth per 100 live births[10]. The rate of preterm birth in Pakistan is estimated to be 15·7%[11].Even in the developed countries like United Kingdom, the preterm birth rate is approximately 7% and this rate is steadily rising[12]. The frequency of preterm births in our study seems a little lower than that referred for Pakistan; it may be due to smaller sample size of our study. If we had gathered huge data then we could had explored some more cases of preterm births; more over preterm birth is more commonly associated with early neonatal mortality & therefore due to this reason, we could have not recorded few more cases for our study.

Birth weight is a good indicator of community health. It is a good tool for assessing health care delivery at community level as well as the status of the mother prenatally and during pregnancy. It is considered a predictor of neonatal viability and has an inverse relationship with neonatal and perinatal mortality which are exceptionally high in Asian countries. The incidence of low birth weight is 19% in Pakistan[13]. In contrast to it, our finding shows this figure as 27.66% which seems alarmingly high (Table I); this could be due to its rural-urban Disproportionate distribution. It however throws light on the need of reduction of low birth weight especially in the rural areas of our province. Another study on the same issue reveals that since a large number of the births even today occur in homes so many of the low birth weight deliveries might have escaped the proper & timely reporting[14]. Besides other causes, advanced maternal age & advanced parity of the mother have been implicated as the causes of preterm births & low birth weight deliveries. Our study revealed 121 women (40.33%) who were of advanced age ie their age was equal to or more than thirty five years(Table II). Among them, preterm delivery was recorded in 17 women (14.04%)(p=0.16). A study with similar objectives showed that. The odds ratio for preterm birth when compared between younger & elderly mothers was 1.6 which is quite in contrast to our study finding[15]. But if we consider association of low birth weight deliveries with advanced maternal age, our study indicates this association as significant ie low birth weight babies were delivered to 31 women at advanced maternal age (25.61%) (p=0.04).

Another systematic review on a large cohort also embosses our study finding revealing a significant association of low birth weight deliveries with advanced maternal age[16]. Regarding parity of women & its association to preterm births & low birth weight deliveries, we found that among three hundred currently delivered women, 113 were primipara (37.66%) , 98 (32.66%) were multipara & 89 (29.66%) were grand multiparas. Primiparity was seen significantly associated with low birth weight (0.02); and as parity increased, it did not show significant association with low birth weight. (p=0.12). Parity of women however was not significantly associated with preterm births (p=0.06). There are many studies which support our findings.

One of such studies conducted in a medical institute at Jalandhar identified that the number of LBW neonates born to primiparous group was statistically ($p<0.05$) higher as compared to multiparous[17]. It has been proved in other studies too that high parity was associated with less risk of low birth weight. A review of demographic & health surveys of various African countries also concluded that there was no adverse effect of increasing parity on the odds of having a child with low birth weight [18]. Some researchers observe other factors playing their roles in causing low birth weight deliveries among primiparas; these factors include lack of nutritional control, less frequent antenatal check upsetc[19]. Studies in United Kingdom also reveal that infants born to primiparous mothers weighed less than multiparous women & in subsequent pregnancies, the birth weights of infants increased[20].

CONCLUSION

Preterm births & low birth weight deliveries are significant problems in our community; their association with advanced maternal age & high parity necessitates that some cost effective preventive strategies should be devised in order to reduce their frequency.

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Address for Corresponding Author:
Dr. Khalida Naz Memon,
11-A Mohammadi Town
Wadhoo Wah Road, Hyderabad.
Cell No. 022-2650530; 03063572147
e-mail: memonk63@yahoo.com