

## Prematurity as an Obstetric Complication and its awareness in Saudi Population

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### ABSTRACT

**Background:** Prematurity is a major obstetric complication that affects infants' growth and development, and is also a big cause of infant mortality across the world. Prematurity is associated with certain risk factors, such as age extremes, mother's diet and health, multiple pregnancies, maternal infections, maternal smoking, inadequate follow-up, and insufficient management of maternal chronic diseases.

**Aim:** In this study we aim to study knowledge and attitude of pregnant women toward the prematurity causes and complication.

**Methodology:** We conducted a cross-sectional study, of 2470 women who presented in king Abdulaziz University, Jeddah, Saudi Arabia from April 2017 to December

**Conclusion:** We noted that although most mothers were aware of the positive impact on their health by regular follow-up visits to physician, many of them were not largely informed of the common associated risk factors. Better prenatal counselling can help create better awareness.

**Keywords:** Prematurity, Obstetric Complication.

### INTRODUCTION

Premature birth is defined as any birth before 37 weeks of gestation. Every year, 15 million babies are born prematurely<sup>[1]</sup>. Many of these babies are able to survive normally, but a big number of them may die or live a life with chronic morbidity. Across the globe, the rate of premature birth averages 11% but this number changes with race and geography, with a range of higher than 15% in some areas of Africa to 5–6% in most European nations and lower in parts of East Asian countries<sup>[2]</sup>.

In most parts of the world, the rate of premature birth has increased in recent years and is now the leading cause of neonatal death across the world and the second major cause of death among children up to 5 years of age. Determining how to lessen the rate of this major pregnancy complication needs to be the highest priority in present-day health care. For infants who do survive despite prematurity, there exists a high risk for chronic non-communicable diseases and lasting cognitive disorders.

Preterm birth has been linked with raised plasma insulin levels, greater risk for cardiovascular diseases in adulthood, and abnormal growth patterns. The frequency of prematurity and subsequent risk of death due to prematurity-related conditions is hence an indicator of access of women in a given country to have safe and effective, medical care prenatal and postnatal, along with an indicator of the inclusive health of their society<sup>[3]</sup>.

Prematurity disturbs a wide range of organ systems. Some of the complications throw lifelong consequences for the growth, development, and health of infants born prematurely. The multifaceted interplay of the mechanisms that take part in preterm delivery includes inflammation and cytokine injury. These mechanisms are believed to be the factors behind the pathogenesis of respiratory distress syndrome, development of chronic lung disease, apnea, necrotizing enterocolitis, retinopathy of prematurity, sepsis, and brain white matter injury in the infant<sup>[4-7]</sup>.

Causes behind premature birth are complex and the exact pathophysiology that triggers preterm birth is mostly unknown, nevertheless, contributing maternal, fetal and placental influencing causes have been identified. The most common ones comprise of antepartum hemorrhage or placental abruption; certain mechanical factors including uterine over-distention and cervical incompetence; changes in hormones; as well as, bacterial infection and subsequent inflammation<sup>[8; 9]</sup>. Infants born with multiple pregnancies are at higher risk to be born prematurely because of spontaneous labor or due to premature rupture of membranes, or because of other conditions such as fetal disorders and pre-eclampsia<sup>[10; 11]</sup>.

**METHODS**

**Study setting:** King Abdulaziz University Hospital, Jeddah, Saudi Arabia.

**Study design:** a Cross sectional study among pregnant women presented in King Abdulaziz university hospital.

**Data collection:** occur between April and December 2017.

**Data analysis**

All data were entered, coded and analyzed using statistical package for social science (SPSS, version 22). The distribution of the data was evaluated for normality with. Qualitative variables were reported as proportions, with the mean  $\pm$  standard deviation calculated for quantitative variables. For all analyses, a p-value  $<0.05$  was considered significant.

**The study was done after approval of ethical board of King Abdulaziz university.**

**RESULTS**

Out of total participants 1560 (63.2%) mothers knew that low birth weight is part of premature birth risks, 910 (36.8%) mothers did not know that low birth weight is part of premature birth risks. 1801 (72.9%) mothers knew that breathing difficulty due to immaturity of lungs is part of premature birth risks, 669 (27.1%) mothers did not know that breathing difficulty due to immaturity of lungs is part of premature birth risks. 811 (32.8%) mothers knew that the risks of delayed learning and developmental disorders and behavioral problems is part of premature birth risks, 1659 (67.2%) mothers did not know that the risks of delayed learning and developmental disorders and behavioral problems is part of premature birth risks. 778 (31.5%) mothers knew that growth disorders and behavioral problems is part of premature birth risks, 1692 (68.5%) mothers did not know that growth disorders and behavioral problems is part of premature birth risks. 419 mothers did not know the premature birth risks.

**Table (1): Does the mother know the premature birth risk**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	910	36.8	36.8	100.0
	Low birth weight	1560	63.2	63.2	63.2
Valid	No	669	27.1	27.1	27.1
	Breathing difficulty due to immaturity of lungs,	1801	72.9	72.9	100.0
Valid	No	1659	67.2	67.2	67.2
	Risks of delayed learning and developmental disorders and behavioral problems.	811	32.8	32.8	100.0
Valid	No	1692	68.5	68.5	68.5
	Growth disorders and behavioral problems	778	31.5	31.5	100.0
	I don't know	419	17.0	100.0	100.0
	Total	2470	100.0	100.0	

Table (2) explains how much the mother knows how to reduce or avoid premature birth. 2038 (82.5%) mothers knew that following up with their doctors during pregnancy period can prevent them from premature births, 432 (17.5%) mothers did not know that following up with their doctors during pregnancy period can prevent them from premature births.

1354 (54.8%) mothers knew that maintaining proper nutrition during pregnancy period can prevent them from premature births, 1116 (45.2%) mothers did not know that maintaining proper nutrition during pregnancy period can prevent them from premature births. 676 (27.4%) mothers knew that balancing chronic diseases during pregnancy period can prevent them from premature births, 1794 (72.6%) mothers did not know that balancing chronic diseases during pregnancy period can prevent them from premature births. 1006 (40.7%) mothers knew that reducing activities during pregnancy period can prevent them from premature births, 1464 (59.3%) mothers did not know that reducing activities during pregnancy period

can prevent them from premature births. 1149 (46.5%) mothers knew that reducing the pressure-regulation of working and rest during pregnancy period can prevent them from premature births, 1321 (53.5%) mothers did not know that reducing the pressure-regulation of working and rest during pregnancy period can prevent them from premature births.

202 (8.2%) mothers knew that maintaining oral hygiene during pregnancy period can prevent them from premature births, 2268 (91.8%) mothers did not know that maintaining oral hygiene during pregnancy period can prevent them from premature births. 167 (6.8%) mothers knew that the weekly injection of progesterone during pregnancy period can prevent them from premature births, 2303 (93.2%) mothers did not know that the weekly injection of progesterone during pregnancy period can prevent them from premature births. 304 mothers did not know how to protect themselves from premature births.

**Table (2) Does the mother know how to avoid premature birth**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	432	17.5	17.5	100.0
	Follow up during pregnancy	2038	82.5	82.5	82.5
Valid	No	1116	45.2	45.2	45.2
	Maintaining proper nutrition	1354	54.8	54.8	100.0
Valid	No	1794	72.6	72.6	72.6
	Balancing the chronic diseases	676	27.4	27.4	100.0
Valid	No	1464	59.3	59.3	59.3
	Reduce activity	1006	40.7	40.7	100.0
Valid	No	1321	53.5	53.5	53.5
	Reducing the pressure-regulation of working and rest.	1149	46.5	46.5	100.0
Valid	No	2268	91.8	91.8	91.8
	Maintain oral hygiene	202	8.2	8.2	100.0
Valid	No	2303	93.2	93.2	93.2
	The weekly injection of progesterone.	167	6.8	6.8	100.0
	I don't know	304	12.3	100.0	100.0
	Total	2470			

## DISCUSSION

Epidemiologic studies have identified certain risk factors for preterm birth. They include maternal age extremes from less than 17 years or more than 35 years, underweight or overweight pre-pregnancy body weight, and short body stature [9; 12]. Physical and

psychosocial stress, previous history of preterm birth, and, very importantly, smoking have been associated with higher preterm risk. A study previously concluded that first or second trimester vaginal bleeding, prior preterm birth, inadequate prenatal care, low maternal

BMI and short birth-to-conception interval are strong risk factors of preterm birth in the Saudi population<sup>[13]</sup>.

Our study focuses on the knowledge and attitude of mothers regarding the risk factors of preterm birth and how preterm birth affects the infant.

In our survey, most mothers (82.5%) were well aware that following up with a doctor during their pregnancy can lead to a prevention of preterm birth. However, mothers' knowledge regarding habits that decrease the incidence preterm birth was not very good. Maintaining a well-balanced diet during pregnancy is very important and many studies have been published about the negatives of a poor diet on maternal and neonatal wellbeing. Of those we surveyed, only half (54.8%) knew that maintaining proper nutrition during pregnancy can prevent preterm birth. Also, only a quarter (27.4%) knew that controlling chronic illnesses like diabetes during pregnancy can prevent preterm birth. Adding on to this, only 46.5% knew that reducing pressure regulation of work and rest can prevent preterm birth, and only 40.7% thought that decreasing activity in general can prevent preterm birth. Knowledge of possible clinical intervention to prevent preterm complications was also lacking. Only 6.8% of mothers knew that a weekly injection of progesterone during pregnancy can prevent premature birth<sup>(12)</sup>.

Premature birth has many possible negative consequences on the child's development. Saudi mothers have a better understanding of the organic complications that result due to prematurity, with 63.2% knowing that low birth weight and 72.9% knowing breathing difficulties due to lung immaturity are possible consequences of prematurity. However, our survey group wasn't well informed of the developmental risks prematurity exposes the child to, with only 32.8% knowing that delayed learning and developmental disorders and 31.5% knowing that growth disorders and behavioral problems are all possible complications of prematurity. This data shows that there is a lack of knowledge in the Saudi mothers population regarding premature birth, how to avoid it, and its complications<sup>(13)</sup>.

## CONCLUSION

We noted in the survey that most mothers were aware of the benefits of following-up with a doctor with regards to preventing preterm birth, however, similar trend was not observed in their knowledge

about risk factors and ways of preventing premature delivery.

The mothers understood that preterm birth can lead to infants' low weight and possible breathing difficulties, but were not very aware of chronic complications of growth and development of the child. The collected data must guide physicians to educate mothers better regarding premature birth in order to avoid infant mortality and chronic associated morbidity.

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