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ORIGINAL ARTICLE

Incidence of Various Causes of Stillbirth in Pakistan: A Cross-Sectional Study

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ABSTRACT

Aim: The present study aims to explore different factors linked with this stillbirth rate in Pakistan, which are; sociodemographic factors, living experiences, and health-related factors related to this highest stillbirth rate, and reflect their relationship with the pregnancy, birth elements, and stillbirth in the context of tertiary healthcare setting in Pakistan.

Study design: A cross-sectional study

Place and Duration: This was a multicentric study which was conducted at Unit II Ghulam Muhammad Mahar Medical College Teaching Hospital Sukkur, Civil Hospital Quetta and Muhammad Medical and Dental College Mirpurkhas from March 2021 to March 2022.

Methodology: This study gathered data related to respondent demographics and their clinical history. For the stillbirth data, this study uses fitted bi-variable and multivariable models with two options, yes/no, and three categories, i.e., mothers' livebirth/macerated/non-macerated stillbirth. This method explores and identifies their linkage with the respondents' demographic and clinical aspects.

Results: Results show that there were, in total, 1999 neonates and 1927 mothers as the sample size. Findings show that the increased odds of stillbirth were linked with maternal inadequate education, distancing issue, people living in huts or cottages, hypertensive mothers, history of stillbirth, complexities with birth, increased time for labor, antepartum hemorrhage, long hours of labor or obstructed labor, vaginal breech at the time of delivery, cesarean in an emergency condition and signs of the trauma after birth to the neonate.

Conclusion. The results show that some factors responsible for stillbirth can be used to develop interventions needed to improve Pakistan's public health conditions. Eventually, it will reduce preventable deaths and improve the condition of maternal health in that particular region.

Keywords: Stillbirth, Maternal health, Avoidable death, universal health.

INTRODUCTION

According to the World Health Organization (WHO), stillbirth is the delivery of an unresponsive newborn after 28 weeks of pregnancy.[1] Even though the WHO definition is used for global assessment, different countries have diverse perceptions of what defines a stillbirth.[2]The range of reference time points include 20 to 28 weeks of pregnancy. The overwhelming number of stillbirths occur in countries with low or moderate incomes (LMICs).[3] Even though almost 2 million stillbirths occur annually, with the majority happening in LMICs, [4] it is believed that stillbirths remain one of utmost ignored global health catastrophes. This is the case that approximately 2 million occur yearly. It is anticipated that “sub-Saharan Africa (SSA)” and South Asia account for 75 percent of allstillbirths.[5]Most stillbirths that occur before labor and delivery are attributable to avoidable causes, such as infections in the mothers ornon-contagious disorders. Nearly half of all stillbirths many results from labor and delivery problems.[6] However, stillbirths during labor and delivery are relatively rare in nations with high incomes.[7]Other identified risk factors for stillbirth include a mother who is either very young or very old, a fetal infection, high blood pressure in the mother, perinatal hypoxia, an earlier stillbirth, and obstetric complications for instance intrauterine growth restriction, abruptic placenta, plus placenta praevia.[8] Lack of maternal education, unemployment, and inadequate prenatal care are significant non-clinical risk factors for stillbirths.[9]

In most cases, the number of stillbirths is stated as a rate per 1,000 births. According to UNICEF, the anticipated rate of stillbirth in South Asia is 21.7 per 1,000 births, but the rate in Western Europe is only 2.9 per 1,000 births. Compared to mothers in HICs, mothers in LMICs are seven times further likely to give birth to a child who does not survive after birth. Pakistan has one of the continent's highest rates of stillbirths and is one of the six countries where stillbirths account for fifty percent of the total.[10] In addition to these facts, the reported stillbirth rates in LMICs are probably lower than the actual rates because cultural factors make it difficult to register stillbirths.[11] These cultural factors prohibit the practice of recording stillbirths, making it harder to achieve this goal. It is crucial to know the gestational age at the time of birth, a perfect definition of stillbirth, accurate reportage systems in hospitals as well as communities, and to have more births occur in hospitals and fewer unsupervised home births. This will provide more reliable and accurate statistics. In low and middle-income countries (LMICs), a number of these factors are incomplete.[12]

Previously, stillbirths in this section of the country were not well recorded. This article describes the work conducted as part of a larger feasibility study titled "Stillbirths in Pakistan." The study's primary objective was to determine whether or not stillborn newborns in Pakistan can be classified based on qualitative, physiological, epidemiologic, microbiological, and immunological criteria. One of the most important objectives of the feasibility study was to impact future research and lay the framework for a mixed-methods approach to the prevention of stillbirth. The purpose of the quantitative component of this article was to determine the socio and demographic, living atmosphere, and health characteristics linked with stillbirth in Pakistan. In addition, the quantitative component aimed to determine the birth and pregnancy factors related to stillbirth in the same place. The secondary objectives were to determine the accuracy with which sociodemographic traits can predict stillbirth and the extent to which this accuracy is improved when these factors are joined with the living environment, wellbeing and medicinal history, as well as pregnancy history variables. In addition, they wanted to establish if the correlations between socio demographics, living atmosphere, and health-related factors plus stillbirth are the same for macerated and non-macerated stillbirths. These connections can be used to establish whether a newborn was born alive or not. Fermentation/Macerated is a medical method used to assess whether or not a newborn was born alive.

METHODOLOGY

Our hospital has access to between 1,200 and 1,400 general hospital beds, 18 neonatal intensive care unit (NICU) beds, 134 maternity beds, and 24 delivery cubicles. Each shift consists of four midwives, and around 560 deliveries occur each month. Two of the midwives are in charge of difficult births, while the other two are responsible for easy births. Moreover, Participants were women who had recently given birth and those who were giving birth. This research study included all women in labor who intended to deliver at the tertiary care hospital during the study period and provided informed consent. Furthermore, this study was conducted in compliance with the Helsinki Declaration's guiding principles and with the approval of the Health Research Ethics Committee of the institute. When the mothers read the information about the study in the consent form presented to them in their native language and gave their written consent, they were deemed qualified to participate in the study. The collection of demographic and medical data via questionnaire was the responsibility of study nurses who had completed the training program. The living situation, the patient's health and medical history, prior pregnancies, and other circumstances related to pregnancy and childbirth were considered. Before giving birth, each mother was asked a total of 24 questions, with the option to answer seven follow-up questions depending on the outcome of the delivery. In addition to gathering over 22 and 28 data arguments from the clinical. The descriptive data were presented in various ways, including frequencies as well as percentages, means plus standard deviations, medians and interquartile ranges, etc., where suitable.

RESULTS

This study examined 1,999 infants born to 1,927 women who volunteered to participate. The majority of characteristics were gathered from all participants, and complete data were provided for 1,995 births (99.6%).The majority of mothers were between the ages of 25 and 30 (64.4%, n=1224), while only 2.8%, n=52, were over the age of 35. 32% of mothers were in the three lowest household income categories. Only 11.2% (n = 216) of moms were in the top two income brackets. A total of 48.1 percent of moms (n=908) said they lived in a house, 30.4 percent (n=582) said they lived in an apartment, which would be the best option in this area, and 24 percent (n=439) said they lived in a hut. Over half of women had at least a high school education (61.8%, n=1,180), whereas 21.8% (n=430) had no formal education and 16.5% (n=298) had only a primary school education. 45.7% (n=870) of the population was employed, compared to 55.4% (n=1068) who were unemployed.

Most mothers had already experienced pregnancy (76.8%, n=1478), and 16.1% (n=280) had previously experienced a stillbirth. In this case, having five or more children is called a large family. A total of 38.2% (n = 688) of the mothers were categorized as having grand multiparty. Most women reported maintaining a healthy weight (89.2%, n=1716), taking medication (74.9%, n=1425), using antibiotics (7.9%, n=160), and antimalarial (28.2%, n=544), respectively. Only 8.2% of moms (n=160) reported taking vitamins throughout pregnancy, whereas 40.5% (n=789) reported taking folic acid/platelets supplements/iron and 54.2% (n=1064) reported usingpainkillers. More than half (54.8%, or 1038 individuals) reported having a health issue, 29.8% (n=572) reported having malaria, and 9.9% (n=178) had high blood pressure.

Most expecting mothers received at least one ultrasound (74.7%, n=1430), and 94.9% (n=1809) saw the baby move frequently in the 24 hours before delivery. A total of 3.8% (n=79) of the sample experienced multiple pregnancies. The most frequent method of delivery was spontaneous vaginal delivery (SVD) (83.4%, n = 1656), followed by caesarean sections (15.6%, n = 310) and vaginal breech births (2.2%, n = 44). A total of 89.4% (n=1768) of births were cephalic, followed by breech with 9.4% (n=186), compound with 1.3% (n=24), face with 0.8% (n=14), and shoulder with 0.6% (n=12). 5% (n=110) of neonates displayed indications of trauma, and 3.8% (n=79) were born in multiples. There were 1799 babies born and 219 stillbirths. One hundred of the stillborn infants displayed indications of maceration, but the remaining 108 did not. A total of 106 out of every one thousand births in this group were stillbirths.

DISCUSSION

The findings of a present study presented that using the current system at thetertiary care hospital in Pakistan, the diagnosis of stillbirths is feasible. It was possible to take pictures of stillborn infants to help improve their diagnosis, and collecting data was socially as well as culturally adequate.The key goal of this research was to explore which sociodemographic, existing arrangement, and health-related factors, as well as pregnancy plus birth factors, are associated with stillbirths. In addition, the study aimed to establish which factors are associated with stillbirths.

This study revealed links between stillbirth and factors such as demographics, living arrangements, and health status. After accounting for all social, economic, and health factors, the likelihood of stillbirth increases if the mother had little education, had to travel even more to reach the hospital, lived in a shanty, had high blood pressure, or had previously experienced a stillbirth. The history of stillbirth in the mother increases the likelihood of stillbirth. Several factors of pregnancy and the delivery process have been linked to an amplified risk ofstillbirth. These included complications during labor and delivery, labor lasting less than 18 hours, bleeding before birth, prolonged or obstructed labor, a vaginal breech delivery, an emergency cesarean section, and indications that the infant had been harmed after birth. According to the findings, taking iron or folic acid supplements decreased the risk of suffering a stillbirth.

Our research supported previous studies that revealed factors responsible for stillbirth. These variables include the mother's inadequate level of education, a history of a previous stillbirth, the mother's high blood pressure, and prolonged or difficult labor.[8]There is a possibility that women with more education better understand their health. This suggests that mothers with inadequate education have a greater risk of stillbirth, as education is a factor in socioeconomic status (SES), and a low SES is related to a greater risk of stillbirth. Following a review, the study concluded that females who experienced a stillbirth during their first pregnancy have a greater risk of experiencing a stillbirth during succeeding pregnancies. They also noted that the risk of having several stillbirths for no apparent reason has not been thoroughly investigated, and the information is still inconsistent.[13]

Our findings revealed relationships between living arrangements, bathroom design, and the risk of stillbirth, which still seem unusual. There has been prior research on the relationship between socioeconomic status and stillbirth; however, that previous research did not address the topic in as much detail as this study did. Both living in a shanty house and using a pit latrine as opposed to a flushing toilet indicate a low social position (SES). Several studies have shown that a non-cephalic presentation of the fetus is related to an increased risk of stillbirth. [14]

After conducting more research on fetal presentation, this study found that breech, shoulder, and compound presentations were all independently linked to a higher risk of stillbirth. To prevent stillbirth, getting an accurate assessment of the issue's severity is vital. This study's objective was to establish a method for assessing the frequency of stillbirths in this specific environment. In addition, a substantial number of common factors associated with stillbirth have been found, which can guide future research and interventions. More likely, a dearth of accessibility to antenatal and intrapartum care explains the high rates of stillbirth in this region than a deficiency of knowledge and education among healthcare professionals.

CONCLUSION

Given that many stillbirths are preventable, the high rates of stillbirth in this region are probably due to a lack of access. The sheer number of patients at this hospital significantly compromises the quality of patient care. A significant amount of study has been conducted on the topic of stillbirths, which are caused by modifiable variables.

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