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FACTORS ASSOCIATED WITH HIGH PREVALENCE OF FRESH STILL BIRTH AT DISTRICT HEAD QUARTER AND ALLIED HOSPITAL FAISALABAD

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Abstract

Background: The poignant issue of stillbirth, the loss of a baby after 20 weeks of gestation, remains a critical global health concern, signaling potential challenges in maternal and neonatal well-being.

Objective: To determine the risk factors (Maternal, Fetal and Hospital) contributing to high prevalence of fresh stillbirth at DHQ and Allied Hospital Faisalabad.

Methodology: The study, conducted at Allied and District Head Quarter Hospital in Faisalabad over three months (August 2023-October 2023), employed a descriptive, cross-sectional design with a sample of 184 participants experiencing fresh stillbirth. Data was collected through self-structured questionnaires, and SPSS version 26.0 was used for analysis, presenting findings through tables and graphs with calculated descriptive statistics for a concise overview of the study.

Results: The study revealed that the highest occurrence of risk factors leading to fresh stillbirth was observed in the age group of 26 to 33 years (93.5%), with a predominant majority being married (97.3%), and a significant portion being illiterate (51.1%), while a majority were homemakers (77.7%). Maternal hypertension emerged as the primary cause of fresh stillbirth (89.7%). Fetal factors contributing to fresh stillbirth were predominantly attributed to fetal hypoxia (47.3%). Additionally, a hospital-related factor identified was insufficient facilities to address emergencies, accounting for 33.6% of cases.

Conclusion: A pronounced incidence of fresh stillbirth was noted at DHQ and Allied Hospital Faisalabad, with maternal hypertension identified as the primary contributing factor to this prevalence. Hospital-related factors accounted for a comparatively lower percentage, standing at 33.6%, while fetal factors, notably hypoxia, constituted a substantial 47.3%.

Keywords: Stillbirth, Maternal Risk Factors, Intrapartum Stillbirth, Preventive Care for Stillbirth

Introduction

Fresh stillbirth, characterized by fetal demise shortly before or during labor, remains a poignant public health challenge in Pakistan, despite advancements in maternal and neonatal healthcare. The persistent high prevalence of fresh stillbirth contributes significantly to maternal and child mortality rates. Recognizing the multifaceted factors associated with this distressing phenomenon are pivotal for targeted interventions and enhancing the broader reproductive health landscape (1-6).

Faisalabad, a dynamic urban hub in Pakistan, is characterized by unique demographic and industrial features. The city's healthcare environment grapples with intricate medical complexities, socio-economic disparities, and systemic challenges that amplify the incidence of fresh stillbirths. Understanding these determinants is essential not only for addressing immediate concerns but also for fostering a comprehensive improvement in obstetric care quality (7-11).
The research objective focused on identifying risk factors (Maternal, Fetal, and Hospital) contributing to the high prevalence of fresh stillbirth at DHQ and Allied Hospital Faisalabad. This endeavor is a critical step towards formulating targeted interventions and policies to mitigate fresh stillbirth occurrences. By concentrating on maternal, fetal, and hospital-related factors, the research aims to offer actionable insights for healthcare professionals, policymakers, and the community. The detailed exploration of these variables in the local context, specifically in Faisalabad, facilitates the development of context-specific strategies to enhance antenatal care, address maternal health disparities, and elevate the overall quality of obstetric services. Ultimately, achieving this research objective holds the potential to significantly reduce the prevalence of fresh stillbirths, promoting healthier pregnancies and improved outcomes for both mothers and newborns in the targeted healthcare setting.

Methodology

Study Design and Setting

This investigation adopts a descriptive, cross-sectional study design within the premises of both the Allied and District Head Quarter hospitals in Faisalabad.

Duration of Study and Participants

Spanning a period of three months (August 2023-October 2023), the study focuses on patients who have encountered the occurrence of fresh stillbirth at the Allied and DHQ Hospitals in Faisalabad.

Sampling Method and Size Determination

Employing a convenient sample technique, the sample size, calculated using the RAOSOFT formula, is 184. This calculation considers a confidence interval of 1.96%, a confidence level of 0.05, a standard deviation of 0.5, and a population size of 350.

Inclusion and Exclusion Criteria

Inclusion criteria encompass pregnant women delivering a stillborn infant, while exclusion criteria encompass patients without a fresh stillbirth experience or those with additional gynecological problems or diseases.

Data Collection Process

Patient data is gathered through a meticulously crafted, self-structured questionnaire.

Data Analysis

Utilizing SPSS version 26.0, the collected data will undergo analysis, with the results presented in tables and graphs. Descriptive statistics will unveil insights into the factors associated with fresh stillbirth at the specified hospitals.

Results

Our study, comprising 184 patients, reveals that the predominant age group is 26-33 years (n=172; 93.5%), with the least represented age group being 34-41 years (n=1; 0.5%). A majority of the participants reported being illiterate, constituting 51.1% (n=94), with the remaining 48.9% (n=90) indicating some level of literacy. Marital status was a key demographic factor, with the majority of females being married (n=179; 97.3%), while a minimal percentage reported being divorced (n=1; 0.5%). Occupational status was also a point of inquiry, revealing that a significant proportion of

women were unemployed, primarily functioning as housewives (n=143; 77.7%), whereas only 22.3% (n=41) were employed out of the total sample of 184 participants (Table 1).

Table 1: Demographic Characteristics of Participants in Fresh Stillbirth Cases

Variable		**Frequency**	**Percentage**
Age	18-25	11	6.0%
	26-33	172	93.5%
	34-41	1	0.5%
Level of Education	Literate	90	48.9%
	Illiterate	94	51.1%
Marital Status	Married	179	97.3%
	Widowed	4	2.2%
	Divorced	1	0.5%
Occupation	Employed	41	22.3%
	Housewife	143	77.7%

The study's key findings highlight that 76.6% of participants engage in regular antenatal visits, with 23.4% not actively participating. Maternal hypertension significantly contributed to fresh stillbirth, with 89.7% reporting the issue. The intake of harmful medicine during pregnancy was prevalent (87.5%), while 11.4% reported occasional use. Abdominal massage was common among 54.3%, and 81% did not ignore spotting or bleeding. In terms of a previous stillbirth history, 68.5% had none. A majority (63%) reported a low socioeconomic status, and 53.3% had a short interval between pregnancies. Obstructed labor occurred in 33.7% of cases, and medical infections were rare (11.4%). No premature rupture of membranes was observed in 74.5% of cases. Oligohydramnios during pregnancy was experienced by 29.9%, while 66.8% did not encounter it (table 2, figure 1).

Table 2: Maternal Health and Pregnancy-Related Factors in Fresh Stillbirth Cases: An In-depth Analysis

Variable	**Frequency**	**Percentage**
Do you have frequent follow-up antenatal visit?		
Yes	141	76.6%
No	43	23.4%
Total	184	100.0%
Fetal death due to maternal hypertension/preeclampsia?		
Yes	165	89.7%
No	12	6.5%
Don’t Know	7	3.8%
Total	184	100.0%
Do you take any harmful medicine during pregnancy?		
Yes	21	11.4%
No	161	87.5%
Don’t Know	2	1.1%
Total	184	100.0%
Do you have abdominal massage?		
Yes	84	45.7%
No	100	54.3%
Total	184	100.0%
Do you ignore spotting or bleeding?		
Yes	35	19.0%
No	149	81.0%
Total	184	100.0%
Do you have previous history of stillbirth?		
Yes	58	31.5%
No	126	68.5%

Total	184	100.0%
Do you have low socioeconomic status?		
Yes	116	63.0%
No	68	37.0%
Total	184	100.0%
Do you have any history of trauma?		
Yes	75	40.8%
No	107	58.2%
Don't Know	2	1.1%
Total	184	100.0%
Have you short interval between pregnancies?		
Yes	98	53.3%
No	86	46.7%
Total	184	100.0%
Do you have obstructed labor?		
Yes	62	33.7%
No	122	66.3%
Total	184	100.0%
Do you have any medical disorder/infection?		
Yes	21	11.4%
No	157	85.3%
Don't Know	6	3.3%
Total	184	100.0%
Do you have premature rupture of membrane?		
Yes	45	24.5%
No	137	74.5%
Don't Know	2	1.1%
Total	184	100.0%
Do you have oligohydramnios during pregnancy?		
Yes	55	29.9%
No	123	66.8%
Don't Know	6	3.3%
Total	184	100.0%

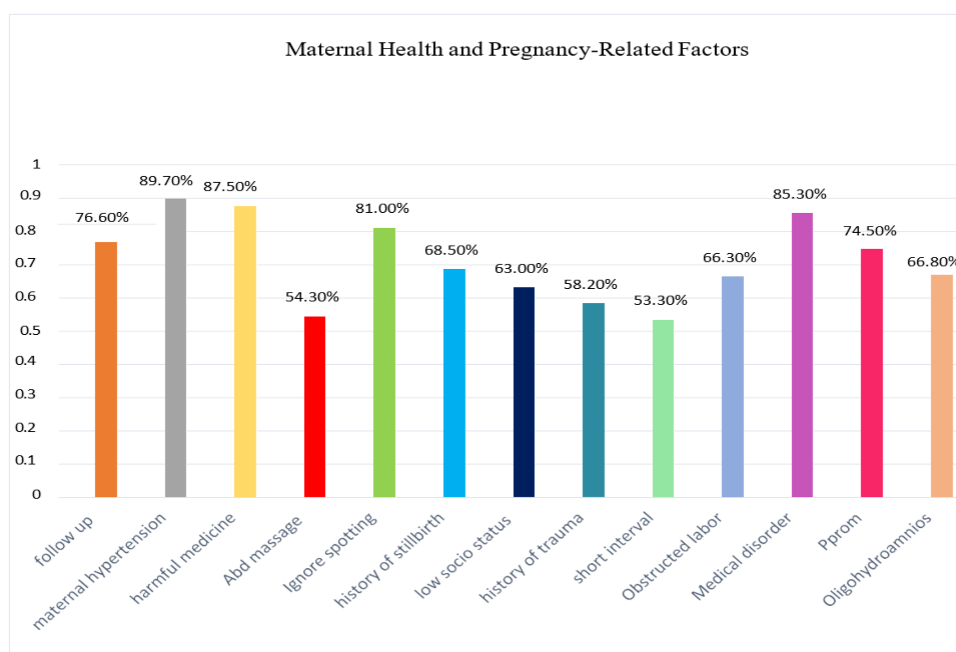

Figure 1: A Comprehensive Examination of Maternal Health and Pregnancy-Related Variables in Recently Stillborn Infant Cases

The findings from the study highlight significant aspects of emergency preparedness. Approximately 33.7% faced challenges with inadequate emergency facilities, while 63.6% were not held responsible for fresh stillbirth. Notably, only 4.3% complained about untrained staff, with a high satisfaction rate of 94.6%. Availability of functional operation theaters fell short for 89.7%, and 8.7% expressed dissatisfaction. In terms of healthcare providers, 86.4% had no complaints, and 91.8% were satisfied with staff competency (4.9% complaint rate). Decision-making delays for c-sections affected 21.7%, while 77.2% experienced no delays. Participant ignorance due to workload affected 7.1%, and equipment availability satisfaction stood at 90.2%, with 8.2% dissatisfaction (table 3, figure 2).

Table 3: Healthcare Infrastructure and Provider-Related Factors in Fresh Stillbirth Cases: Assessment and Perspectives

Variable	**Frequency**	**Percentage**
Inadequate facilities to deal with emergency?		
Yes	62	33.7%
No	117	63.6%
Don’t know	5	2.7%
Total	184	100.0%
Untrained staff?		
Yes	8	4.3%
No	174	94.6%
Don’t know	2	1.1%
Total	184	100.0%
Unavailability of functional operation theatre?		
Yes	16	8.7%
No	165	89.7%
Don’t know	3	1.6%
Total	184	100.0%
Shortage of health care provider?		
Yes	20	10.9%
No	159	86.4%
Don’t know	5	2.7%
Total	184	100.0%
Unskilled staff?		
Yes	9	4.9%
No	169	91.8%
Don’t know	6	3.3%
Total	184	100.0%
Delay in decision making about c-section?		
Yes	40	21.7%
No	142	77.2%
Don’t know	2	1.1%
Total	184	100.0%
Do you ignore by health care provider due to workload?		
Yes	13	7.1%
No	168	91.3%
Don’t know	3	1.6%
Total	184	100.0%
Inadequate availability of equipment?		
Yes	15	8.2%
No	166	90.2%
Don’t know	3	1.6%
Total	184	100.0%

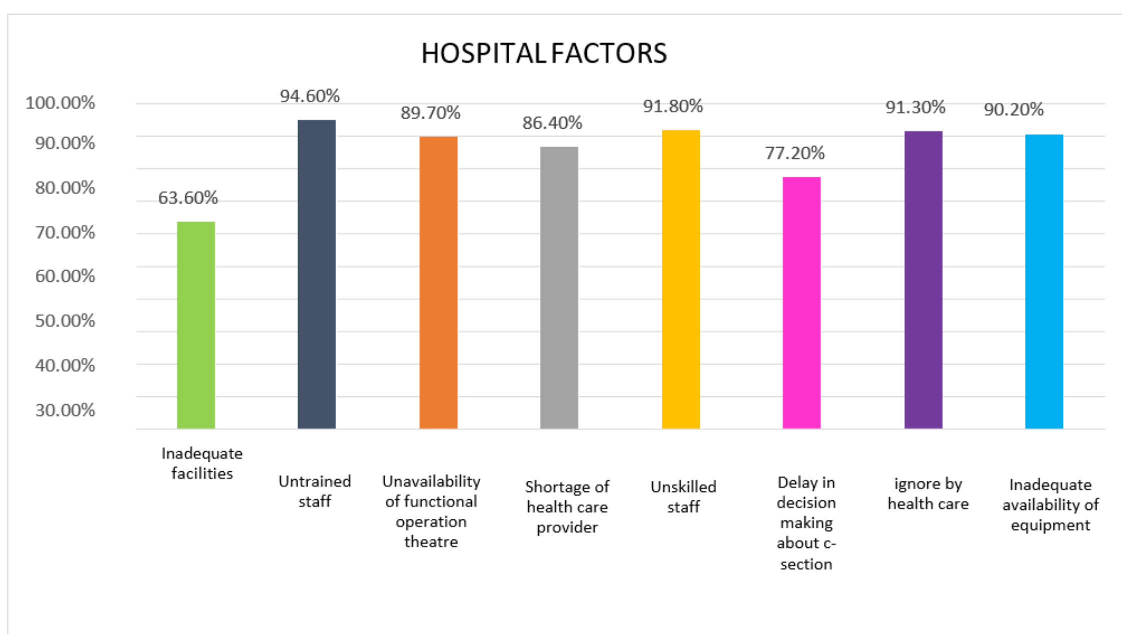

Figure 2: Evaluation and Views on the Healthcare Infrastructure and Provider-Related Factors in New Stillbirth Cases

The notable findings regarding pregnancy-related factors were highlighted. Fetal movement reduction or absence before delivery was observed in 39.7%, with 59.2% reporting no such issue. Liquor inhalation before delivery was acknowledged by 21.7%, while 77.2% negated this practice. Intrauterine growth retardation affected 8.7%, with 91.2% unaffected. Congenital fetal abnormalities were reported by 15.2%, while 84.8% had no such issues. Twin gestation occurred in 37.0%, with 62.0% having a single gestation. Rh incompatibility impacted 30.0%, leaving 67.9% unaffected. Fetal death due to hypoxia was noted in 47.3%, and 50.0% did not experience it. Fetal death due to the umbilical cord around the neck was absent in 92.4%. Complications due to forceps delivery were reported by 13.0%, while 84.2% did not encounter them (table 4).

Table 4: Obstetric Factors Associated with Fresh Stillbirth: Incidence and Distribution

Variable	**Frequency**	**Percentage**
Fetal movement reduced or absent before delivery		
- Yes	73	39.7%
- No	109	59.2%
- Don’t know	2	1.1%
Total	184	100.0%
Liquor inhalation before delivery		
- Yes	39	21.2%
- No	142	77.2%
- Don’t know	3	1.6%
Total	184	100.0%
Intrauterine growth retardation		
- Yes	16	8.7%
- No	168	91.3%
Total	184	100.0%
Congenital fetal abnormalities		
- Yes	28	15.2%
- No	156	84.8%
Total	184	100.0%
Twin gestation		

- Yes	68	37.0%
- No	114	62.0%
- Don't know	2	1.1%
Total	184	100.0%
Rh incompatibility		
- Yes	56	30.0%
- No	125	67.9%
- Don't know	3	1.6%
Total	184	100.0%
Fetal death due to hypoxia		
- Yes	87	47.3%
- No	92	50.0%
- Don't know	5	2.7%
Total	184	100.0%
Fetal death due to umbilical cord around the neck		
- Yes	14	7.6%
- No	170	92.4%
Total	184	100.0%
Complication due to forceps delivery		
- Yes	24	13.0%
- No	155	84.2%
- Don't know	5	2.7%
Total	184	100.0%

Discussion

In this study, our primary objective was to identify factors associated with a high prevalence of fresh stillbirth. The results revealed a demographic profile of participants where a substantial portion belonged to the 26-33 age group (93.5%), with only 1% falling within the 34-41 age group. Illiteracy was prevalent among 51.1% of participants, and the majority (97.3%) were married, with a minimal percentage (0.5%) reporting divorce. Housewives constituted 77.7% of the participants, while 22.3% were employed. These demographic details provide a baseline for understanding the characteristics of the population under study.

Comparing these findings with previous research, it is noteworthy that the age distribution and marital status align with some patterns seen in other studies on stillbirth (12,13). However, the high percentage of illiteracy in our study population is a distinctive feature that might contribute to a deeper understanding of the relationship between education and stillbirth.

Factors associated with stillbirth in our study encompassed a range of social and health-related variables. Poverty, lack of education, maternal age (>35 or <20 years), low parity (1, ≥5), inadequate antenatal care, prematurity, low birth weight, and a history of previous stillbirth emerged as significant contributors. These findings are consistent with existing literature that highlights the multifactorial nature of stillbirth, implicating both social determinants and healthcare-related factors (14).

Antenatal care emerged as a crucial aspect in our study, with a majority of participants having frequent antenatal visits. Hypertension-induced fetal demise emerged as a widespread concern, impacting 89.7% of cases. These results align cohesively with established literature on the subject (15). These statistics underscore the importance of monitoring and managing hypertension during pregnancy as a critical preventive measure against stillbirth. Avoidance of harmful medicine during pregnancy was reported by 87.5%, emphasizing the role of patient education and awareness in preventing adverse outcomes.

While there was a notable high satisfaction rate with healthcare staff (92.9%), apprehensions were voiced regarding the adequacy of operational theaters (88%), a trend in line with findings from prior

research (16). This suggests that while the quality of care provided was satisfactory, infrastructure issues might have played a role in adverse outcomes. These observations align with broader discussions in healthcare literature about the need for comprehensive, well-equipped facilities to ensure optimal maternal and fetal outcomes.

The study also shed light on the lack of awareness among healthcare workers regarding stillbirth incidence and causes. Specific incidents such as reduced fetal movement and absent liquor inhalation were common, emphasizing the need for increased education and training among healthcare professionals. The substantial occurrence of congenital fetal abnormalities (83.2%) underscores the critical role of genetic counseling and early detection as vital measures in preventing stillbirth, aligning findings with previous research (17).

In comparison with previous research, our study provides additional insights into the specific incidents contributing to stillbirth, such as intrauterine growth retardation, congenital fetal abnormalities, and Rh incompatibility (18). The emphasis on monitoring fetal movements for late stillbirth risk aligns with existing literature, reinforcing the importance of this practice in routine antenatal care.

Conclusion

This study delved into the multifaceted factors contributing to the high prevalence of fresh stillbirths at DHQ and Allied Hospital Faisalabad. Maternal hypertension emerged as the predominant risk factor, impacting 89.7% of cases. The study revealed a pronounced incidence of fresh stillbirth, with hospital-related factors accounting for 33.6%, highlighting the need for improved emergency facilities. Fetal factors, notably hypoxia, constituted a substantial 47.3%. Overall, the findings underscore the urgency of targeted interventions, addressing maternal health and hospital infrastructure, to mitigate the prevalence of fresh stillbirths in the healthcare setting. This research contributes valuable insights for policymakers and healthcare professionals working toward enhancing maternal and neonatal outcomes in Faisalabad.

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