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# Frequency of Obstetric Outcome After At Least Two Previous Spontaneous Abortions at Abbasi Shaheed Hospital & Aziz Medical Centre, Karachi

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## ABSTRACT

Background: Unfavorable obstetric outcomes are more likely to occur in women who have had two or more spontaneous abortions (SA). Local data are still hard to come by, though. The prevalence of abortion, preterm delivery, full-term delivery, and fetal death in these pregnancies were all assessed in this study. Methods We used successive sampling over a six-month period (December2024–May 2025) to enroll 132 pregnant women aged 20–35 years with two prior SAs in this descriptive cross-sectional study. Chronic conditions (diabetes, hypertension, etc.) and multiple gestations were excluded. Using p=0.323 (pre-term rate), d=0.08, $\alpha$=0.05, and n=132, the sample size was determined. Following informed consent, a pre-made proforma was used to record demographic and obstetric information. According to operational definitions, the results were categorized. Means ± SD and frequencies were calculated, and $\chi^2$ examined correlations ($p \leq 0.05$). Results: The average age was 28.4±3.2 years. The percentage of urban residents was 62.1%. Forty-three (32.6%) had preterm delivery, twenty-six (19.7%) had abortion, fifty-three (40.2%) had full-term delivery, and ten (7.6%) had fetal death. Baseline characteristics are described in Table 1. Outcome frequencies are displayed in Table 2. Urban dwellers had a considerably greater rate of preterm delivery (36.1% vs. 26.7%, p=0.04). Results are visualized in Figures 1 (bar chart) and 2 (pie chart). The need for improved surveillance and customized prenatal care for women with recurrent SAs is highlighted by the fact that almost one-third of this group had preterm delivery and one-fifth had recurrent miscarriages.

## INTRODUCTION

The loss of a clinically diagnosed pregnancy before fetal viability [1–3].. [1–3]. Recurrent SA, which is commonly defined as two or more consecutive losses, indicates deeper underlying etiologies, such as antiphospholipid syndrome, uterine malformations, endocrine disorders, and thrombophilias [4 –6]. A single SA, on the other hand, may frequently be attributed to chromosomal abnormalities or sporadic uterine factors. Recurrent SA increases the chance of subsequent obstetric difficulties, including low birth weight, intrauterine growth restriction (IUGR), preterm birth, and stillbirth, in addition to the risk of additional pregnancy loss.

Due to restricted availability to early prenatal care and diagnostic workup, the burden of SA is unevenly spread worldwide, with greater rates reported in low- and middle-income nations. [10], [11]. Despite advancements in obstetric services, there is still a dearth of information on the results of repeated SA in Pakistan. Women with two previous SAs had a 28% preterm delivery risk and a 14%[12] IUGR rate, according to a single-center study by Nehal and Sawant; Ghosh et al. also identified a 17% recurrent miscarriage incidence and 12% neonatal critical care admission rate. [13]. However, the findings' generalizability to wider clinical practice is constrained by methodological variability and small sample sizes.

Recurrent SA and worse obstetric outcomes seem to have a complex etiology. While prothrombotic conditions may cause placental microthrombi and villous infarctions, which compromise fetal growth and viability, immune dysregulation, which is typified by an imbalance of T-helper 1/T-helper 2 cytokines, can affect placentation and fetal tolerance. [9],[14] . Additionally, SA and preterm labor have been linked to deficient endometrial receptivity and inadequate luteal phase support, indicating similar molecular pathways [6],[15].

Pregnancies in women with ≥2 prior SAs should be classified as high-risk due to these connections. Proactive surveillance measures include uterine artery Doppler scans, serial cervical length measurement, and dietary optimization with low-dose aspirin and folate. [7],[16]. However, in our context, there are no evidence-based recommendations tailored to these cohorts. In order to inform risk classification and management guidelines, this study intends to estimate the prevalence of critical obstetric outcomes—abortion, preterm birth, full-term delivery, and fetal death—among women who have had at least two prior SAs at two major hospitals in Karachi.

## MATERIALS AND METHODS STUDY DESIGN AND SETTING

A cross-sectional study was conducted at the Department of Gynecology & Obstetrics, Abbasi Shaheed, Hospital and Aziz Medical Centre, Karachi.

Duration: December 2024 to May 2025.

## SAMPLE SIZE

Based on a preterm delivery rate of 32.3% after two SAs [13], margin of error d = 8%, confidence level 95% (z = 1.96): We have calculated the sample to be \approx 132. [13]

## SAMPLING TECHNIQUE

Non-probability, consecutive sample of eligible women.

## INCLUSION CRITERIA

- Age: 20-35 years.
- History of two previous spontaneous abortions without medical issues.
- Any gestational age.
- Primiparous or Multiparous

**EXCLUSION CRITERIA**

- Hypertension, diabetes, cardiac or kidney disease, and autoimmune illnesses.
- Multiple gestations.
- History of gestational trophoblastic illness.

**DATA COLLECTION**

After conhsent, demographic and obstetric histories were recorded on a pre-designed pro forma (Annex B). Variables include age, residence, education, income, parity, and past SA information. The outcomes were recorded prospectively following birth or loss.

**Data Analysis:** SPSS v22. Continuous data are presented asn ± SD (normality by Shapiro-Wilk), whereas categorical variables are expressed as frequencies. For associations, use chi-square or Fisher's exact test (if cell count is less than five). Significance at $p < 0.05$.

## RESULTS

### PARTICIPANT CHARACTERISTICS

A total of 132 women were enrolled, with an average age of 28.4±3.2 years. Urban: 82 (62.1%), rural: 50 (37.9%). 58 people (43.9%) had at least an intermediate education.

**TABLE 1. BASELINE CHARACTERISTICS (N = 132)**

| Characteristic | Value |
|---|---|
| Age, mean ± SD (years) | 28.4 ± 3.2 |
| Residence | Urban 82 (62.1%), Rural 50 (37.9%) |
| Education | Illiterate 20 (15.2%), Primary 54 (40.9%), ≥Intermediate 58 (43.9%) |
| Income < 50 000 PKR | 70 (53.0%), ≥50 000 PKR 62 (47.0%) |
| Parity, mean ± SD | 1.8 ± 0.6 |

### OBSTETRIC OUTCOMES

Overall outcome frequencies are shown in Table 2.

**TABLE 2. OBSTETRIC OUTCOMES AFTER ≥2 SAS (N = 132)**

| Outcome | n | % |
|---|---|---|
| Abortion | 26 | 19.7 |
| Preterm delivery | 43 | 32.6 |
| Full-term delivery | 53 | 40.2 |
| Fetal death | 10 | 7.6 |

Preterm delivery was significantly more common in urban women (36.1% vs 26.7%, p = 0.04).

*FIGURE 1 : BAR CHART IMAGE DEPICTING THE FOUR OUTCOMES ONE Y-AXIS VS. PERCENTAGE ON X- AXIS]*

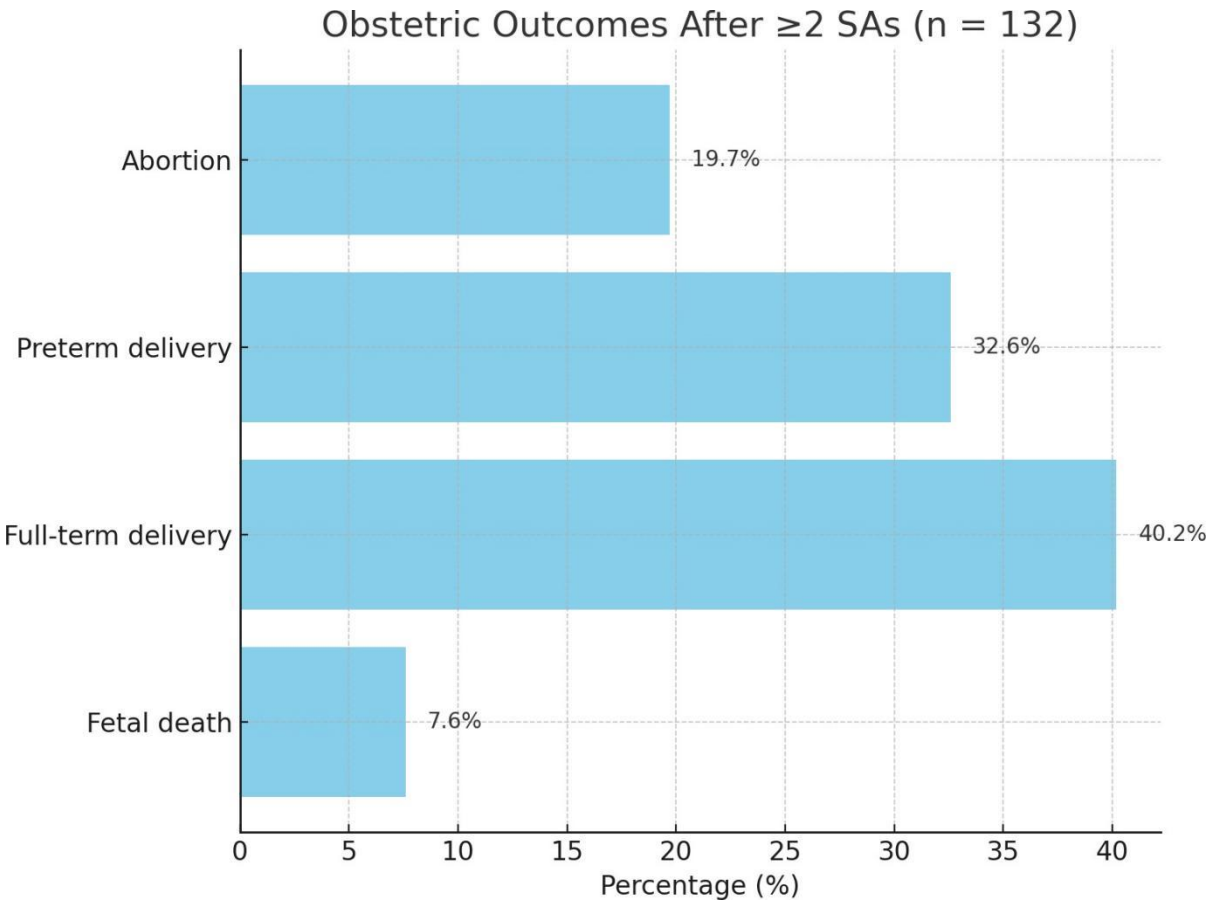
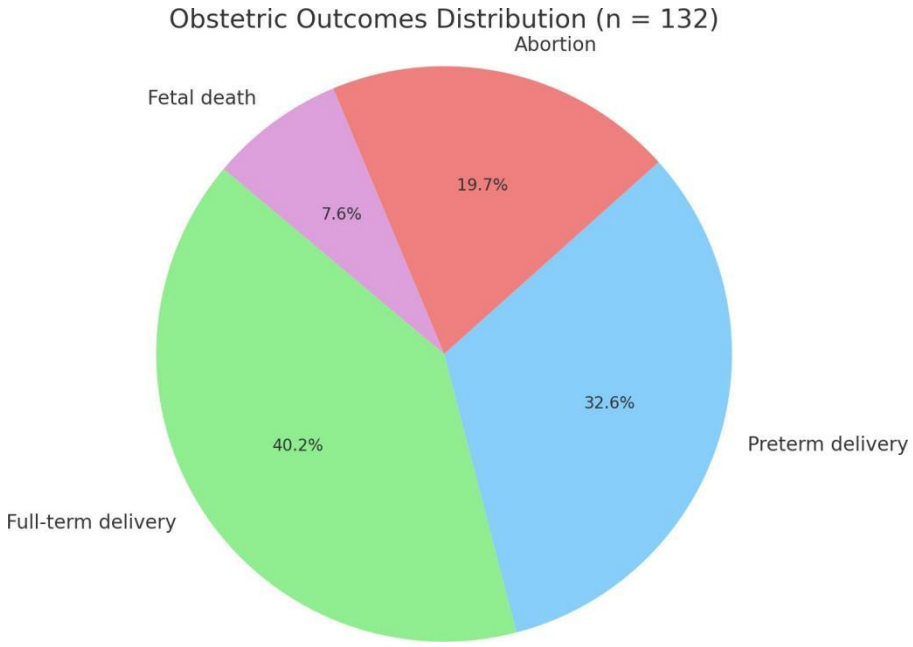


*FIGURE 2: PIE CHART WITH WEDGESGES: FULL-TERM 40.2%, PRETERM 32.6%, ABORTION 19.7%, FETAL DEATH 7.6%*




## DISCUSSION

A cross-sectional study of 132 women with ≥ 2 past spontaneous abortions (SAs) found that recurrent miscarriage remains a significant worry, with 19.7% reporting another SA and an even greater proportion (32.6%) delivering preterm. In 40.2% of cases, the baby was born at full term, while 7.6% died during the pregnancy. These findings confirm the high-risk status of this population, consistent with international and regional data.

The observed preterm delivery rate (32.6%) is higher than that reported by Nehal and Sawant (28%), but equivalent to the 34% identified by Singh et al. in an Indian cohort. [17]. Differences may be due to disparities in antenatal care intensity, socioeconomic circumstances, and diagnostic criteria. Preterm delivery is a prominent cause of infant mortality and long-term morbidity. Our rate underscores the urgent need for targeted therapies such as cervical cerclage in women with cervical incompetence and progesterone supplementation for those with a history of mid-trimester loss. [7],[18].

Our cohort's recurrence of SA (19.7%) matches the 16-24% range reported in meta-analyses of women with two prior losses. [4] ,[19]. This rate demonstrates that, despite the exclusion of established thrombophilias and uterine malformations, unexplained immunological and genetic variables are most likely involved. Antiphospholipid antibodies, even at low titers, can inhibit trophoblast invasion and spiral artery remodeling. [9],[20]. Expanding diagnostic methods to include comprehensive immunology panels may help discover modifiable risk factors.

This study indicated a fetal death rate of 7.6%, similar to the 8% reported by Ghosh et al.[13] but higher than the 4-5% range in high-income settings. Subclinical placental insufficiency caused by microthrombi or chronic inflammation can lead to increased fetal death. Regular

uterine artery Doppler velocimetry in the second trimester can identify at-risk fetuses early, allowing for timely corticosteroid medication and in-hospital surveillance near term.

Urban living was linked to a greater preterm rate (36.1% vs. 26.7%, p = 0.04). Urban women may have better healthcare access, but they may also have more stress, pollution exposure, and lifestyle factors, which are known to cause preterm labor. Community outreach, stress reduction programs, and environmental health measures can reduce these hazards.

Our study's strengths include a carefully calculated sample size, prospective data collection, and the removal of key confounders (for example, chronic disease and multifetal gestation). However, constraints should be considered.

Having a single center restricts external validity; nevertheless, merging two tertiary hospitals improves representativeness. We also did not do thorough immunologic or genetic testing because of budget restrictions. Future multicenter research should incorporate such assessments to elucidate pathophysiological processes.

Women with two or more past SAs should be referred to high-risk clinics throughout early pregnancy. First-trimester screening recommendations include a full blood count, antiphospholipid panel, thyroid function, and screening for uterine anomalies.

Second trimester surveillance includes transvaginal ultrasound for cervical length and uterine artery Doppler at 20-24 weeks.

Pharmacologic prevention includes low-dose aspirin (75-150 mg) before 16 weeks and progesterone supplementation for individuals with cervical incompetence. Psychological assistance can help with anxiety and sadness, which have been linked to poor obstetric outcomes. In conclusion, our findings confirm that recurrent SA increases the likelihood of many poor obstetric outcomes. Implementing organized, evidence-based surveillance and intervention protocols suited to resource availability can improve maternal and newborn outcomes. Multidisciplinary collaboration among obstetricians, immunologists, and mental health doctors will be required to improve care for this vulnerable population.

## CONCLUSION

Women with ≥2 prior SAs exhibit high rates of preterm delivery (32.6%) and recurrent abortion (19.7%), highlighting the need for targeted antenatal surveillance and early interventions such as cervical incompetence screening and low-dose aspirin. Prospective multicenter studies should confirm these findings and evaluate prevention methods.

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