

Caesarean section trends in Jordan: A cross sectional study of 2.5 million births over 33 years

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Objectives: According to the WHO, the ideal caesarean section (CS) rate is 10-15%. Over the years, the CS rate has increased worldwide. The aim of this study is to examine CS trends in various healthcare sectors in Jordan and highlight common indications.

Methods: This is a cross-sectional study of 2.5 million births in various healthcare sectors in Jordan between 1982 and 2015. Temporal trends (5-year intervals) in the CS rate were compared across healthcare sectors and England (BirthChoiceUK data). Common CS indications were established from prospectively collected data -based on 3,799 CS births- in 2 hospitals (governmental and private). A p -value ≤ 0.05 was considered statistically significant. Linear regression was performed to predict future CS rates (R^2 value ≥ 0.9).

Results: The CS rate in Jordan demonstrated an upward trend over the study period; $6.5 \pm 1.3\%$ in 1984-1988, $6.3 \pm 0.6\%$ in 1989-1993, $9.3 \pm 1.0\%$ in 1994-1998, $12.5 \pm 1.0\%$ in 1999-2003 and $18.8 \pm 2.5\%$ in 2004-2008. This was significantly lower than the CS rate in England during comparative periods; $10.3 \pm 0.3\%$ ($p=0.002$), $12.3 \pm 1.2\%$ ($p \leq 0.001$), 16.4 ± 1.3 ($p \leq 0.001$), $21.0 \pm 1.2\%$ ($p \leq 0.001$) and $23.9 \pm 0.8\%$ ($p=0.009$), respectively. Between 2009 and 2013, the CS rate in Jordan ($26.9 \pm 2.7\%$) increased to become comparable with England ($24.9 \pm 0.4\%$). Since then, the CS rate in England appears to display a very slowly rising trend (26.2% in 2014) while it continued to display a steep upward trend in Jordan (29.1% in 2014). CS births were significantly higher in private versus academic ($p=0.002$), private versus governmental ($p=0.024$), academic versus governmental ($p < 0.001$) and academic versus military ($p < 0.001$). In 2014, the CS rate was 37.6% in the private sector, 37.5% in academic, 34.6% in military and 25.7% in governmental hospitals. Between 2003 and 2014, the highest upward trend was seen in the private sector (193.8% increase) while the lowest was observed in governmental hospitals (83.6% increase). The most common indications were previous CS (33.6% , two or more previous CS; 24%), abnormal presentation (20.3%) and patient request (15.2% ; private sector only).

Conclusions: The high CS rate in Jordan can be partially explained by previous CS, breech deliveries are no longer vaginally delivered and patient request. Other potential indications (e.g. fetal monitoring not routinely backed by scalp pH in Jordan, fear of litigation, staff time constraints and potential financial gain) require further investigation. The CS rate in Jordan is on an alarming and sustained uptrend. If this trend continues, it is expected to reach 50% by 2026 (even earlier (2019) in the private sector).