

The “Saturday Effect” in Obstetrics: A Comparison Between Referral Patterns on Saturday and Other Days of the Week

Anahita R. Chauhan¹ · Sumit Chamariya¹ · Madhva Prasad¹

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Respected Editor,

Through this communication, we wish to highlight that a disproportionate number of obstetric patients are referred from the first- or second-level facilities to tertiary centres on weekends, especially Saturdays [1]. Day-of-the-week linked referral patterns are recognised in Western literature, not necessarily only in obstetrics [2]. However, documentation in contemporary Indian literature is not extensive. Our research question aimed to find if “taking a break during weekends” by doctors leads to increased inter-institutional referrals.

We conducted a prospective observational study at our tertiary-care hospital over 1 year to ascertain if differential referral patterns exist. All obstetric cases referred on Saturdays were compared to those referred on all other days, including Sundays; data regarding reasons for referral, consistency between indication for referral and actual

diagnosis after admission; and maternal and perinatal mortality patterns were analysed.

Of the total 8271 confinements, referrals constituted 38.12%; however on Saturdays, 46.49% cases were referred as compared to only 25.36% on other days, which was *statistically significant*. There was also *statistically significant difference* between reasons for referral on Saturdays versus other days, with referral for non-medical reasons predominating on Saturdays (non-availability of doctors and NICU). Noteworthy is that almost half the cases managed on Saturdays were referred. (Table 1).

In our country, most doctors in public sector work on Saturdays, at least in the morning. To look for differences in referrals based on time of day, 24-h time period from 7 am was divided into 3-h intervals and the time of arrival of referred cases was noted. Majority of patients were referred between 4 pm on Saturdays and 1 am on Sundays, as compared to a more uniform distribution among all time periods on other days; this was *statistically significant* (p value = 0.0347).

Major inconsistencies were observed between reason for referral and actual diagnosis, mainly need for NICU and PIH. 25 and 19.5% of cases referred on other days of the week for presumed need for NICU or a diagnosis of PIH, respectively, did not need NICU nor had PIH; this number increased to 35 and 30% on Saturdays, respectively, for NICU and PIH. This highlights unnecessary transfers on Saturdays. LSCS rate was similar, 32.2 and 28% on Saturdays and other days. Perinatal and maternal mortality rates were comparable other days. The commonest causes

Anahita R. Chauhan is a Professor and HOU in Department of Obstetrics and Gynecology at Seth GS Medical College and KEM Hospital, Mumbai. Sumit Chamariya is a Registrar in Department of Obstetrics and Gynecology at Seth GS Medical College and KEM Hospital, Mumbai. Madhva Prasad is a Assistant Professor in Department of Obstetrics and Gynecology at Seth GS Medical College and KEM Hospital, Mumbai.

✉ Madhva Prasad
madhva@gmail.com

¹ Department of Obstetrics and Gynecology, Seth GS Medical College and KEM Hospital, Acharya Donde Marg, Parel, Mumbai, Maharashtra 400012, India

Table 1 Distribution of referred cases and indications for referral; total confinements 8271; total referrals 3153 (38.12%)

	Saturdays	Other days of week
Confinements	1327	6944
Referrals	617 (46.49%)	2536 (36.52%)
Chi-square (with Yates correction) = 19.83, <i>p</i> value < 0.0001		
Indication for referral	Referral on Saturday	Referral on other days
Non-medical reasons	421 (68.23%)	1707 (67%)
Non-availability of NICU	164	770
Non-availability of doctors	142	387
Lack of infrastructure (water/construction/USG/NST)	35	276
Non-availability of blood bank facility	34	115
No reason specified	46	159
Medical reasons	196 (31.7%)	829 (33%)
Ectopic pregnancy	32	204
Eclampsia/PIH	59	218
Postdatism	45	119
IUFD/abruption	23	111
Multiple pregnancy	19	81
Malformations	18	96
Total	617	2536

Unpaired *t* test: $t = 2.7754$ $df = 22$, standard error of difference = 76.6; the two-tailed *p* value = 0. 011

of maternal mortality were complications relating to preeclampsia, systemic medical disorders in pregnancy and antepartum haemorrhage.

Ruiz analysed the rate of 30-day mortality following emergency admission or elective surgery. It showed a “Friday effect” [3], very similar to the “Saturday effect” highlighted here. Falciglia showed that more inductions for labour take place on weekdays than on weekends [4]. Clark showed a higher occurrence of LSCS during weekdays than on weekends [5]. In our study, we found more patients being referred to referral centres on weekends. It may be postulated that less numbers of patients are provided care at primary and secondary levels during weekends; obstetricians tend to refer away less patients on weekdays than on weekends.

Perinatal mortality has also been shown to be higher during weekends and among those who are referred [1, 6].

To summarise, there is a temporal inconsistency in the pattern of inter-institutional referral, with variation attributable to non-patient factors, thereby establishing a “Saturday effect”. Inter-institutional referral is invariably necessary when problems occur; and timely referral does improve patient outcomes. Here we have attempted to present the other side; an analysis of reduction in unnecessary burden on tertiary-care centres is the need of the hour, not only in terms of patient outcomes but also from a health-care resource management perspective.

Compliance with Ethical Standards

Conflict of interest All the authors declare that they have no conflict of interest.

Ethical statements All procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and with the Helsinki Declaration of 1975, as revised in 2008 (5). Since it was a review of records, no informed consent was obtained from any patients for being included in the study. This article does not contain any studies with animal subjects.

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