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RESEARCH ARTICLE

Challenges to achieving appropriate and equitable access to Caesarean section: ethnographic insights from rural Pakistan

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Abstract

Access to Caesarean section (C-section) remains inadequate for some groups of women while others have worryingly high rates. Understanding differential receipt demands exploration of the socio-cultural, and political economic, characteristics of the health systems that produce them. This extensive institutional ethnography investigated under- and over-receipt of C-section in two rural districts in Pakistan – Jhelum and Layyah. Data were collected between November and July 2013 using semi-structured interviews from a randomly selected sample of 11 physicians, 38 community midwives, 18 Lady Health Visitors and nurses and 15 Traditional Birth Attendants. In addition, 78 mothers, 35 husbands and 23 older women were interviewed. The understandings of birth by C-section held by women and their family members were heavily shaped by gendered constructions of womanhood, patient–provider power differentials and financial constraints. They considered C-section an expensive and risky procedure, which often lacked medical justification, and was instead driven by profit motive. Physicians saw C-section as symbolizing obstetric skill and status and a source of legitimate income. Physician views and practices were also shaped by the wider health care system characterized by private practice, competition between providers and a lack of regulation and supervision. These multi-layered factors have resulted in both unnecessary intervention, and missed opportunities for appropriate C-sections. The data indicate a need for synergistic action at patient, provider and system levels. Recommendations include: improving physician communication with patients and family so that the need for C-section is better understood as a life-saving procedure, challenging negative attitudes and promoting informed decision-making by mothers and their families, holding physicians accountable for their practice and introducing price caps and regulations to limit financial incentives associated with C-sections. The current push for privatization of health care in low-income countries also needs scrutiny given its potential to encourage unnecessary intervention.

Keywords: Mistrust of C-sections; Unnecessary C-sections; Under- and over-receipt of C-sections

Introduction

Despite progress in preventing maternal deaths over the past two decades, risks to women remain unacceptably high in many low-income countries. Miller *et al.* (2016) have usefully drawn attention to the situation where preventable maternal morbidity and mortality is now associated with both a lack of access to timely, good quality health care for some women, as well as the over-receipt of medical intervention for others experiencing normal pregnancy. Caesarean section (C-section) is a case in point. An important component of emergency obstetric care, addressing many life-threatening maternal and fetal complications (Dahlke *et al.*, 2013), C-section prevalence has risen markedly in recent decades across the globe, including low-income countries (Betrán *et al.*, 2007),

reflecting important gains in facility-based births and skilled attendance. While it is suggested that a C-section rate of 5–19% of all births is likely to be appropriate, many countries now have rates that far exceed this recommendation (World Health Organization, 1985, 2015; Molina *et al.*, 2015). Several countries also show significant differentials between sub-groups of their population, with some sections experiencing worryingly high levels of C-section while other population groups remain under-served (Ronsmans *et al.*, 2006). High rates of C-section raise concerns about unnecessary surgical intervention, and the extent to which women can engage in informed shared decision-making with professionals (Castro, 1999; Shoaib *et al.*, 2012), as well as iatrogenic risks to both mothers and babies (Liu *et al.*, 2007). Very low rates indicate that women are not receiving the emergency care they need, resulting in potentially avoidable stillbirths and maternal and neonatal deaths (Islam & Yoshida, 2009).

To date, few studies have explored in detail the factors that shape patterns of C-section receipt. Available evidence presents a complex picture. Several studies reveal an apparent contradiction between women's voiced preference for vaginal delivery and high rates of C-section (Angeja *et al.*, 2006). For example, in Chile, where the C-section rate is 60%, 78% of women voiced a preference for vaginal delivery (Angeja *et al.*, 2006). Indeed, women's expressed preference for vaginal births has been documented widely (Fenwick *et al.*, 2003; Koken *et al.*, 2007; O'Dougherty, 2013). Such evidence raises concerns that women across varied settings lack choice and control in their mode of delivery (Castro, 1999; Barros *et al.*, 2011; Shoaib *et al.*, 2012;). Other studies from high- and middle-income countries suggest that elective C-sections are carried out for the convenience of physicians, rather than in response to a medical need (Barros *et al.*, 2011). Notably, Barros *et al.* (2011) found that in Brazil, where the C-section rate exceeds 45%, most procedures took place on Tuesdays and Wednesdays and least on Sundays (Barros *et al.*, 2011). Studies in some settings suggest that women's personal preferences for C-section are influencing physicians' decision to operate (Cecilia De Mello, 1994; Gonen *et al.*, 2002; Wax *et al.*, 2004). At the same time, however, vast inequities exist in C-section rates in sub-groups within populations, especially in low- and middle-income countries (Ronsmans *et al.*, 2006). Some of the commonly reported barriers to C-section in these contexts include poverty, high costs of health services and inadequate and inappropriately equipped health facilities (Borghi *et al.*, 2006; Paxton *et al.*, 2006; Essendi *et al.*, 2011). An emerging body of literature suggests a lack of recognition of the need for surgical intervention, women's refusal of the procedure, and complex decision-making processes, as common obstacles to timely receipt of C-section (Aziken *et al.*, 2007; Chigbu & Iloabachie, 2007; Damschroder *et al.*, 2009; Ugwu & de Kok, 2015).

The partial and conflicting nature of the current evidence base indicates the need for detailed, qualitative investigation that examines both service-users' and providers' understandings and practices and situates these within the wider socio-cultural, and political economic, characteristics of prevailing health care systems.

Pakistan presents a useful case study within which to develop a more holistic understanding of these influences on C-section rates, offering the potential for both specific findings in addition to generalizable insights. Medical guidelines for C-sections in the country are similar to those endorsed by the International Federation of Obstetrics and Gynaecologists (FIGO, 2019). Similar to other settings, Pakistan's C-section rates have also changed dramatically in recent decades. The national C-section rate was at a dangerous low of 2.9% in 1990, but increased to 7.3% in 2007, and 14.1% in 2013 (World Bank, n.d.; National Institute of Population Studies, 2008, 2014). Within the country, significant differentials exist, with 26.6% of births in 2012/3 in urban Islamabad Capital Territory being delivered by C-section, compared with 1.3% in rural Balochistan (National Institute of Population Studies, 2014). The rate for the highest wealth quintile was 33.9%, compared with 4.3% in the lowest wealth quintile (National Institute of Population Studies, 2014).

These patterns of receipt raise important questions about the factors that constrain or support appropriate and equitable C-section provision; a topic that remains unexplored. The present paper

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reports on a detailed qualitative investigation that provides insight into the socio-cultural and political economic characteristics of a local health system context within which divergent patterns of C-section receipt are produced.

Methods

The data presented in this paper were drawn from the qualitative component of a large mixed-methods investigation into inequitable access to midwifery services in rural Pakistan. Data collection took place in rural and urban areas of two districts of Punjab, Jhelum and Layyah, over a 9-month period between November 2012 and July 2013. These districts were selected because they span the range of development in Punjab, with Jhelum being a relatively well-developed district, and Layyah one of the least developed. Sixty-four per cent of the population in Jhelum is literate compared with 37% in Layyah (CSS Forum, n.d.). Rates of skilled birth attendance are 86% in Jhelum and 52% in Layyah (Mumtaz *et al*., 2015). Overall, national survey data indicate that C-section rates in Punjab ranged from 25% in urban centres, to 14% in rural areas, although similar data are not available at the district level (National Institute of Population Studies, 2014).

The work was underpinned by the principles of institutional ethnography – a framework that gives a central place to ways in which patients and practitioners describe their experiences, but which situates such accounts within an understanding of broader socio-cultural, political and economic structures that constrain and direct people's practices (Campbell & Gregor, 2002). The research team was comprised of three female and one male researcher(s). This included AB, an anthropologist and the primary data collector, and ZM, a public health physician with three years of clinical experience in both urban and rural settings in Pakistan and qualitative research training. Both have extensive experience conducting qualitative research in rural Pakistan and long-standing interests in reproductive health, gender and health inequalities.

Module 1 focused on health care providers, and employed both observation and interviews. Loosely structured interviews were conducted with 11 physicians, 18 Lady Health Visitors (LHVs)/midwives/nurses, 38 community midwives and 15 Traditional Birth Attendants (TBAs). The LHVs are a cadre of health workers trained to provide facility-based midwifery services in rural areas. Community midwives (CMW) are a new cadre of providers trained to provide domiciliary care. Table 1 lists the socio-demographic characteristics of these respondents. Facility-based respondents (physicians, nurses, midwives and LHVs) were randomly selected from twelve public sector facilities (two small-town district hospitals, eight rural Basic Health Units, two semi-urban Rural Health Centres) and three small-town private hospitals with surgical facilities. The CMWs were randomly selected from personnel databases of District Health Offices. All providers were interviewed multiple times for a total of 91 interviews. Separate pre-tested interview guides were used for each group of respondents. Information was elicited on maternal health services they provided broadly and constraints and challenges of care provision. Repeat interviews were conducted to explore in greater depth emerging themes. Ten CMWs also were accompanied and observed during home visits, allowing for the documentation of 59 patient–provider interactions. In addition, 20 hours of observation (over a 4-week period) were undertaken in the obstetrics ward of District Hospital, Layyah, and 6 hours in Jhelum.

Module 2 collected data from women and other family members. With the objective of eliciting narratives of rural women's experiences seeking maternal health care, in-depth interviews were conducted with women aged 15–49 years who had given birth in the last 3 years (N=78), their husbands (N=35) and their mothers-in-laws (N=18). Older women were included in the sample as they are often the primary decision-makers regarding younger women's receipt of maternity care. Women were free to talk about all their pregnancy experiences. Table 2 lists the socio-demographic characteristics of these respondents. Pre-piloted loosely structured guides were used for each group. Interviews were not narrowly focused on C-sections, but rather covered the whole experience of seeking and receiving maternal health care. Initially, women who had given birth in

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Table 1. Demographic characteristics of respondent providers

	Physicians (*N*=11)	Midwives/Nurses/LHVs (*N*=18)	Community midwives (*N*=38)	TBAs (*N*=15)
Age (mean, years)	43.6	42.6	20.3	56.4
M:F ratio	4:7	0:18	0:38	0:15
No. years trained (mean)	6.4	2.4	1.5	0.1
Worked in public sector only	2	8	0	0
Worked in private sector only	2	0	37	11
Worked in public and private sectors	7	10	1	4
Conducted C-section procedures	7	0	0	0

Table 2. Demographic characteristics of respondent patients and family members

	Mothers (*N*=78)	Husbands (*N*=35)	Mothers-in-law (*N*=18)
Age (mean, years)	28.6	32.3	60.4
Married	78	35	Data unavailable
Education (mean, years)	3.2	7.6	Data unavailable
Poor	33	14	8
Non-poor	45	21	10
Had a C-section birth/wife or daughter-in-law had C-section	12	5	5

the preceding 3 years were identified by the local LHW who maintain household registers, including data on all births. These respondents were asked to recommend other potential participants who, if recruited to the study, subsequently recommended more potential participants, thereby forming a snowball sample (Hammersley, 1998). To understand wider sociocultural influences on women's maternal health seeking behaviours, including operative deliveries, eighteen focus group discussions were conducted with six to ten participants in each, separately for women and men. Interview and focus group participants were recruited with the assistance of LHVs. Representation of all castes and socioeconomic groups was ensured.

All interviews and group discussions were audio-recorded (except for five interviews where permission was withheld, and detailed field notes were taken instead), and translated verbatim into English with an emphasis on retaining conceptual equivalence. Observational field-notes were recorded using a structured template and expanded on immediately after observational periods. The first author checked a random sample of transcripts for completeness and accuracy. In both modules, preliminary analysis proceeded concurrently with data collection in order that data saturation could be judged (Mayan, 2009). A database of transcribed notes was prepared and ATLAS-ti (Atlas.ti Scientific Software Development GmbH, n.d.) was used to manage the large volume of data. Data were coded inductively using a social constructivist, interpretative approach (Mayan, 2009). This approach views knowledge as a co-created construction of both a subjective and an objective reality. It acknowledges there are multiple realities and truths, which are a consequence of individual characteristics including but not limited to race, class and gender (Mayan, 2009).

Two data coders separately developed a coding tree, which was then merged and applied systematically to all transcripts and observational notes. Using a latent content analysis approach,

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data were coded, and major domains and themes were identified. This approach is useful for classifying large amounts of textual data into an efficient number of categories that represent similar meanings (Mayan, 2009). Data from different sources (observations, interviews, focus group discussions) were used to generate a comprehensive and rich understanding of factors that shaped access to C-section. Data analysis was an on-going and iterative process throughout all phases of data collection, as early identification allowed investigation of unanticipated concepts and variables in the subsequent data collection activities. Researcher bias and interpretive accuracy was assessed by triangulation of findings, research team peer debriefing and respondent validation. An audit trail using personal memos and journaling was also maintained to ensure dependability and confirmability, as advocated by Tuckett (2005).

Ethics clearance was obtained from the National Bioethics Committee (No. 4-87/11/NBC/RDC/32/7 dated January 26, 2011, Pakistan) and the University of Alberta, Human Ethics Research, Health Panel B (No. Pro00019042, dated August 4, 2011). Voluntary and informed participation, confidentiality and safety of participants constituted key principles of researcher–respondent interaction. Written consent was obtained from health care providers and verbal consent from community members. The latter was documented and signed by the researcher. Both ethics committees approved verbal consent because in a context of low educational levels, signing documents can be erroneously assumed to indicate transfer of land or property.

Results

Three sets of important meanings attached to C-section held by patients, family members and health care providers were identified. Each of these could be seen as rooted in wider sociocultural, economic and political processes operating within families, communities and the wider health care system.

1. Receipt of C-Section conflicted in several important ways with prevailing gendered values and norms that shaped notions of appropriate female behaviour and positioned pregnant women as dependent and lacking power. Caesarean section was perceived as socially risky and morally corrupt.
2. Significant power differentials between service users and health care providers, and a climate of mistrust, fuelled scepticism that C-sections benefit physicians rather than patients. Coupled with financial constraints, C-section was therefore commonly perceived as an expensive procedure of uncertain value for patients that carried significant physical risks.
3. Physicians perceived the surgical procedure as a symbol of obstetric skill and status, distinguishing themselves from lesser qualified cadres of health care provider with whom they were in competition. Organizational cultures and wider system characteristics encouraged physicians to see C-section as a legitimate source of financial profit and provided no governance or supervisory constraints on their promotion of the procedure.

The gendered context of C-section

Although all the young mothers in the study sample were aware of C-section and its use for addressing birth complications, they expressed a strong preference for vaginal births, preferably at home. This preference was rooted in fears of violating gendered norms of women's seclusion (*purdah*), with consequent negative implications for family honour (*izzat*). Pregnancy and childbirth were associated with a degree of shame (*sharm*), as they indicated sexual activity. A C-section delivery necessitates travel to a facility and was therefore seen as broadcasting that which should be kept hidden. Home births ensured the delivery took place 'within *purdah*'.

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> They think that if they go to the hospital then ... most of all the in-laws would watch them coming and going, so what would they think?! (Community midwife)

Furthermore, it was widely believed that C-sections were performed by male physicians, unlike vaginal deliveries, which were attended by female staff. The prospect of contact with male physicians was viewed with alarm.

> *Toba toba* [a religious expression asking for forgiveness from Allah], a male doctor is always there and he is doing the surgery and doing stitches ... and the lady's shirt is pulled up till here [up to her chest] so then what is left behind then ... *toba, toba* ... (Mother-in-law)

The data suggest experiencing vaginal birth pains was considered essential to a woman's rite of passage to motherhood. So strong was this desire that the concept of pain relief during labour did not exist among respondents. It was observed that birthing women were never offered, nor did they ask for, any form of pain relief. Birth by C-section generated concern among women that they were being robbed of the full childbirth experience and would equate to 'failing as a woman'.

The wider societal view supported this understanding. Women who underwent C-section were accused of using the procedure to avoid the pain of a normal vaginal delivery, and to relieve themselves of their housekeeping responsibilities. Family members derided them as 'weak', 'lazy', 'cowards' or 'not woman enough'. Husbands, in particular, drew comparisons between their wives and their mothers or other elder women whom they viewed as being substantially tougher for not having needed C-section deliveries. Such negative ideas fuelled the belief that, though complications may arise, a *real* woman does not find excuses to avoid having a vaginal delivery for her child.

> She wanted the operation and was excited about it. Women nowadays are so delicate. They are cowards. She had decided she will deliver by C-section in the second month. (Male, focus group discussion)

Women were acutely aware of these negative societal perceptions. Those who had previously undergone a C-section described the difficulty they faced in battling community and family-level stigma.

> They say we just get our abdomen cut and the baby comes out, then we rest on the bed for many days. But I tell them that it is not so easy. Only those women who have experienced it know what it is really like. (Mother)

In this social climate, labouring women who required a C-section for safe childbirth were placed in a quandary. While often aware of the importance of a C-section for addressing certain complications, a desire to maintain a positive relationship with family members, particularly husbands and mothers-in-laws, created a reluctance to accept this mode of delivery. When asked whether they would have a C-section if it were recommended by a doctor, women struggled to respond. They hesitantly stated that they would only undergo the procedure if it became a compulsion but were unable to elaborate further. Numerous instances were observed where physicians recommended C-sections and patients or families either refused outright or negotiated for vaginal delivery. More commonly, they were seen leaving against medical advice to seek care from an alternative provider (often a TBA or midwife) who was willing to deliver vaginally.

An additional factor that contributed to women's avoidance of C-sections was the widely acknowledged understanding that a woman who delivers by C-section will no longer be able to deliver vaginally. In addition, respondents expressed the opinion that a woman can undergo only three C-sections, thus limiting her parity to three children. In a context of strong preference for

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sons, C-sections were therefore seen as a potential threat to a woman's ability to have the desired number of sons. A woman without a son is also considered a 'failed woman'.

A risky procedure of uncertain value: power differentials and mistrust in physicians

Negative perceptions of C-sections held by women and their family members were further fuelled by a lack of trust in health care professionals. In a context of limited literacy and lack of opportunities to access information, women and their families relied upon providers to recommend the best course of medical action. However, relationships between providers and patients, particularly poor women, were characterized by significant power differentials. Many instances of providers' abusive and disrespectful behaviours towards patients were observed.

> We do not know what doctors do, what the hospitals do, what is the medicine . . . We are afraid. (Two family members accompanying a labouring woman, observations in obstetrics ward, district hospital)

> It is okay if after checking the position and all, the doctor thinks there is a need to do an operation. But without examining her, how can she say the baby's heartbeat is not fine and other things that scare us. We feel helpless and get worried . . . we don't know what is happening! (Woman accompanying a labouring woman, observations in obstetrics ward, district hospital)

Against this backdrop, the unpredictability that is inherent in the progression of labour, together with significant variation in health care provider practices, were found to undermine service–user confidence in those who should have been reassuring them and supporting them through labour and delivery. Clearly, complications such as haemorrhage or fetal distress tend to occur without warning and require a quick response. However, it was found that abrupt changes in delivery recommendation – often in favour of a C-section – were often viewed with suspicion by labouring women and their families. Given the high stakes of pregnancy and labour, patients hoped for 'expert' and clear-cut advice from health professionals and struggled to accept unpredicted changes in the course of events. This mistrust was heightened by the multiplicity of delivery attendants (physicians, nurses, midwives, LHVs and TBAs), divergent recommendations regarding mode of delivery and variation in risk thresholds between these practitioners. Patients described situations where shortly after being told by a physician that a C-section was required, a TBA, LHV or even a community health worker had assured them the delivery could be done vaginally. Reports from health care professionals also tended to suggest divergence, and even competition, between cadres of workers, rather than congruence and complementarity. Observational data revealed that similarly trained physicians had markedly differing medical practices. In particular, private sector physicians with no surgical facilities had a low threshold of risk, referring patients for C-sections for absent, yet potential, complications. Even in fully equipped facilities, some physicians had low risk thresholds. In contrast, non-physician providers invariably had a high threshold of risk, illustrated by the following narrative.

> The *dai* (TBA) diagnosed the baby as a breech, but I was confident it was normal. She massaged the abdomen to shift the baby, stating it will move by 10.00 pm and be delivered shortly afterwards. I just kept quiet . . . I knew the baby was normal. When nothing happened that night, the family got worried and took the girl to Dr X, who did an ultrasound and said the baby is a transverse lie. She recommended an immediate C-section. I took the husband aside and told him the baby is normal . . . just go home and I will deliver it. Shortly after arriving home, she delivered a healthy baby girl, normally. (Community midwife)

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Women shared stories of normal vaginal deliveries taking place either en route to the clinic for a scheduled C-section or on the operating theatre bed while waiting for the physician to arrive and perform the surgery. These stories compounded the view that physicians often performed these procedures unnecessarily. This distrust resulted in situations of ambiguity and confusion for women and their families, during a particular time of vulnerability, when they needed trusted expert guidance most. Both interviews and observational work illustrated women and their families were confused and fearful when faced with the decision of a C-section. Such fear impaired their ability to make informed decisions. Importantly, the costs of C-section were prohibitive for poor patients. In the private health care system, C-sections were unregulated and generally expensive, ranging from PKR 10,000 to 50,000 (a typical day labourer earns PKR 11,000 per month). Even in public sector facilities, costs were incurred for drugs, surgical supplies and living expenses of an attendant.

The combination of low levels of trust, inability to access adequate, consistent information and high financial implications support the commonly expressed interpretation that C-sections are frequently needless procedures prescribed by overly cautious (or, as discussed more below, profit-driven) physicians.

Provider understandings: status and profit

While the factors described above tended to discourage women and their relatives from opting for C-section, a range of provider and system-side factors appeared to encourage unnecessary provision of the procedure.

Some obstetricians saw their role as surgeons to mean they were active interventionists. They assumed that a C-section would be performed, both when the patient was referred to their care, and when they came by their own accord. According to one physician who questioned a colleague regarding need for a C-section, the obstetrician's response was:

> I am not a midwife (*dai*), I am a surgeon, who am I to let her remain lying and I'll keep on waiting. [Why would I] let her sit without any reason?! (Physician)

> Going to a doctor means an operation (C-section). (Midwife)

More generally, there were many indications in the study data that some doctors were unethically recommending C-sections, motivated by the money that could be earned. The vast majority of public sector obstetricians moonlighted in private practices. Together with the lack of regulation of the private health care market, this meant that C-sections were a potentially lucrative opportunity for obstetricians.

> Now just see in our area, I can't mention names, but there are doctors who convert a normal delivery into a C-section. A 99% effort is made to deliver the patient by C-section. (Physician)

One physician was mentioned by several respondents as someone who performed C-sections regularly and unnecessarily. According to the respondent, this particular physician had fired her entire staff upon learning a patient had delivered vaginally despite preparations for a C-section. She accused staff of intentionally inducing a normal vaginal delivery, thereby undermining her ability to profit from the procedure. Another physician respondent, talking about the same physician, stated:

> She said to me 'If I don't earn Rs.80,000–85,000 (approx. US$1000) in a day, I can't sleep at night'. (Physician)

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The motivation for profit was not limited to physicians; it also drove midwives to advise against C-sections, when recommended by physicians. Midwives and other non-physician skilled birth attendants are not legally permitted, trained or equipped to perform C-sections. For this group, a C-section delivery represents a loss of income. As illustrated in the quotes in the previous section, these practitioners were at pains to point out to the researchers both their skill at delivering vaginally, and the unnecessary interventions performed by physicians, further illustrating the competitive environment of the local health care system.

The push for unnecessary C-sections, largely driven by unethical provider motives, was not lost on patients. Numerous women cited disingenuous physician motives as key reasons for choosing to decline the procedure.

> We went to Dr X for a check-up, she said 'oh ho, you will have to get the operation done'. We caught her dishonesty and called Ami. She said to go to the other hospital even if you have to spend more money. Ami said maybe at the other hospital they will say it is normal. Then we came here, and they said there was still another two weeks to go and then I had a normal delivery. Sometimes doctors get greedy. (Mother)

Discussion

Principal findings and contribution to the literature

The findings from this research suggest that, as in many parts of the world, both under- and over-receipt of C-sections is occurring within the same location (Miller *et al.*, 2016). Access to C-sections for women in the study field sites was limited by gender norms that prize female seclusion and stoicism, leading to a reluctance to accept the procedure among women and their family members. They also struggled to make informed decisions in a context characterized by inadequate and inconsistent information. At the same time, physicians, particularly those with obstetric surgical skills, tended to recommend and conduct unnecessary C-sections, while midwives, LHVs and TBAs discouraged the procedure even when the birth was complicated. This combination of influences, together with disrespectful health care professional behaviours, and high financial costs of the surgery, has led to misunderstanding and mistrust of C-sections. This leads to both missed opportunities when women who genuinely need a C-section but refuse to undergo the procedure, as well as medically unjustified procedures which can increase the risk of morbidity and mortality for birthing mothers and newborns, with increasing burdens to the health care system (Liu *et al.*, 2007; Chatterjee & Laxminarayan, 2013).

A number of the study's findings align with the current body of literature documenting reasons underlying under- and over-receipt of C-sections. One such finding is that gender norms that prize women's stoicism during childbirth and prevent uptake of C-sections have been reported from diverse contexts such as Uganda (Kabakyenga *et al.*, 2011) and Nigeria (Ugwu & de Kok, 2015). Similarly, the finding that physicians conducted unnecessary intrapartum 'emergency' C-sections is supported by Kalish's research from the United States (Kalish *et al.*, 2002). Aimed at exploring the incidence of emergency intra-partum C-sections, the researchers found that 13% of a sample of 422 intrapartum C-sections had been conducted without a clear medical indication. The authors concluded these unnecessary intrapartum C-sections were imposed on the patient under the guise of an 'emergency' – an experience that was common to the study respondents.

This study has added nuance to a growing body of literature on women's level of involvement in decision-making around delivery by C-section. This decision-making literature shows that women's level of involvement varies by reason for C-section. Caesarean sections are divided into elective and emergency procedures. Elective C-sections are described as operative deliveries in which the decision is made before the onset of labour. A systematic review of 92 studies reveals that, worldwide, women have a larger role in elective C-section decisions compared with

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emergency C-sections (Sivananthajothy & Mumtaz, 2018). The present data from rural Pakistan, however, do not fit in this clean dichotomy of decision-making. None of the study respondent differentiated between elective and emergency C-sections, although a number of respondents had been recommended the procedure before the onset of labour. More importantly, the data show women rarely made the decision alone. The decision to proceed with the C-section was made by the physicians and approved of or not by the husband and other elder women in the family.

Strengths and limitations

Before providing recommendations, it is worth noting the limitations of the study. First, the use of snowball sampling may have resulted in the recruitment of participants with shared socio-economic characteristics, health care beliefs and gendered values. Although not formally assessed, the observations suggest the majority of respondents were poor by international or even national standards. Their access to high-quality C-section care would, therefore, be limited by the well-documented financial and social barriers (Mumtaz *et al.*, 2014). Second, no respondents reported a case of adverse maternal or neonatal outcome when acting against the advice of a physician, suggesting a social desirability bias among women, their families and midwives. It is possible respondents were more willing to discuss instances where vaginal delivery was successful, thereby conforming to the dominant local understandings. Third, the specific findings may not be generalizable to other settings such as urban Pakistan, or contexts where C-section rates differ, and where health care services are located primarily in the public sector. Nevertheless, the central importance of gender norms, provider–patient power differentials and physician motivations in shaping both under- and over-receipt of the procedure, are factors that deserve attention by practitioners and researchers across settings. More generally, the study illustrates the value of detailed qualitative investigation into the socio-cultural and political economic influences on C-section rates, demonstrating the importance of moving beyond a narrow focus on clinician competencies and facility readiness.

Implications for policy and practice

The study data indicate a need for synergistic action at patient, provider and system levels. The simplest is a need to improve knowledge and shift attitudes among both rural women and wider family members of the physiological nature of obstetric complications and the justification of a C-section procedure to protect the life of the woman and the unborn child in certain circumstances. This can be done by improving physician communication with women and their families, skills that need to developed in the medical school curriculum. More respectful treatment of women and their families will also go a long way in ensuring physician recommendations are accepted and followed.

There is also a need to improve the practice of evidence-based medicine among physicians, as has been noted elsewhere (Villar *et al.*, 2001; Langer & Villar, 2002). Physicians in rural areas could be supported by making available updated evidence in user-friendly formats such as the WHO's reproductive health library (World Health Organization, n.d.). Further research is recommended to assess the feasibility of introduction of audit systems that measure physician-level C-section rates and making this information widely available in formats easily accessible to rural populations (Dekker *et al.*, 2018). Evidence shows that providers known to be supportive of vaginal deliveries are more trusted and accessed by patients (McGrath *et al.*, 2010). Research should also assess if physicians could be rewarded for having C-section rates more aligned with WHO standards as one indicator of their practising evidence-based, good quality care (World Health Organization, 2015).

However, empowering women and their families to make informed decisions, building their trust in physicians, ensuring poor women's access to the procedure when indicated, and reducing

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unnecessary procedures, is a longer term project that will require more radical interventions. The first suggestion is a need to revisit the business ethos of the prevailing private health care system. The study findings suggest financial profit underlies both unscrupulous promotion of needless C-sections by physicians and recommending avoidance of the procedure when clinically indicated by midwives, LHVs and TBAs. Currently, over 70% of maternal health care services in Pakistan are provided by the private sector (National Institute of Population Studies, 2014). Given the dominance of the private health care sector, which has been further buoyed by the recent push to privatize the health care system in low- and middle-income countries by the International Monetary Fund, it is recommended, as a first step, that research is done to assess the feasibility of introducing price caps and regulations to limit the financial incentive for physicians to prescribe needless C-sections (Stuckler & Basu, 2009). This would benefit patients as price caps would prevent costs from becoming prohibitive, especially for low-income households. Coupled with rigorous auditing of practices and sanctions for poor performance, this might go some way to reducing unnecessary procedures. Further research is also required to explore other potential of strategies to control unnecessary C-sections.

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