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1 **Challenges to achieving appropriate and equitable access to**
2 **Caesarean section: ethnographic insights from rural**
3 **Pakistan**

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16

17

18

19 **Abstract**

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

43

44 **Introduction**

45 Despite progress in preventing maternal deaths over the past two decades, risks to women remain
46 unacceptably high in many low-income countries. Miller et al. (2016) have usefully drawn
47 attention to the situation where preventable maternal morbidity and mortality is now associated
48 with both a lack of access to timely, good quality healthcare for some women, as well as the
49 over-receipt of medical intervention for others experiencing normal pregnancy. Caesarean
50 section (C-section) is a case in point. An important component of emergency obstetric care,
51 addressing many life-threatening maternal and foetal complications (Dahlke et al., 2013), C-
52 section prevalence has risen markedly in recent decades across the globe, including low income
53 countries (Betran et al., 2007), reflecting important gains in facility-based births and skilled
54 attendance. While it is suggested that a C-section rate of 5-19% of all births is likely to be
55 appropriate, many countries now have rates that far exceed this recommendation (World Health
56 Organization, 1985; Molina et al., 2015; World Health Organization, 2015). Several countries
57 also show significant differentials between sub-groups of their population, with some sections
58 experiencing worryingly high levels of C-section while other population groups remain under-
59 served (Ronsmans, Holtz, and Stanton, 2006). High rates of C-section raise concerns about
60 unnecessary surgical intervention, and the extent to which women can engage in informed shared
61 decision-making with professionals (Castro, 1999; Shoaib, Memon, and Javed, 2012), as well as
62 iatrogenic risks to both mothers and babies (Liu et al., 2007). Very low rates indicate that women
63 are not receiving the emergency care they need, resulting in potentially avoidable still births,
64 maternal and neonatal deaths (Islam and Yoshida, 2009).

65
66 To-date few studies have explored in detail the factors that shape patterns of C-section receipt.
67 Available evidence presents a complex picture. Several studies reveal an apparent contradiction
68 between women's voiced preference for vaginal delivery and high rates of C-section (Angeja et
69 al., 2006). For example, in Chile, where the C-section rate is 60%, 78% of women voiced a
70 preference for vaginal delivery (Aslam, Gilmour, and Fawdry, 2003). Indeed, women's
71 expressed preference for vaginal births has been documented widely (Koken et al., 2007;
72 Fenwick, Gamble, and Mawson, 2003; O'Dougherty, 2013). Such evidence raises concerns that
73 women across varied settings lack choice and control in their mode of delivery (Castro, 1999;
74 Shoaib et al., 2012; Barros et al., 2011). Other studies from high and middle-income countries

75 suggest that elective C-sections are carried out for the convenience of physicians, rather than in
76 response to a medical need (Barros et al., 2011). Notably, Barros et al. (2011) found that in
77 Brazil, where the C-section rate exceeds 45%, most procedures took place on Tuesdays and
78 Wednesdays and least on Sundays (Barros et al., 2011). Studies in some settings suggest that
79 women's personal preferences for C-section are influencing physicians' decision to operate
80 (Cecilia De Mello, 1994; Wax, Cartin, Pinette, and Blackstone, 2004; Gonen, Tamir, and
81 Degani, 2002). At the same time, however, vast inequities exist in C-section rates in sub-groups
82 within populations, especially in low and middle-income countries (Ronsmans et al., 2006).
83 Some of the commonly reported barriers to C-section in these contexts include poverty, high
84 costs of health services, and inadequate and inappropriately equipped health facilities (Borghi et
85 al., 2006; Essendi, Mills, and Fotso, 2010; Paxton, Bailey, Lobis, and Fry, 2006). An emerging
86 body of literature suggests a lack of recognition of the need for surgical intervention, women's
87 refusal of the procedure, and complex decision-making processes, as common obstacles to timely
88 receipt of C-section (Aziken, Omo-Aghoja, and Okonofua, 2007; Ugwu and de Kok, 2015;
89 Chigbu and Iloabachie, 2007; Damschroder et al., 2009)

90

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

95

96 Pakistan presents a useful case study within which to develop a more holistic understanding of
97 these influences on C-section rates, offering the potential for both specific findings in addition to
98 generalizable insights. Medical guidelines for C-sections in the country are similar to those
99 endorsed by the International Federation of Obstetrics and Gynaecologist (FIGO 2019).

100 Obstetricians and physicians trained in surgery are the only cadre of providers licensed to
101 conduct the procedure (Pakistan Medical and Dental Association 2019). Similar to other settings,
102 Pakistan's C-section rates have also changed dramatically in recent decades. The national C-
103 section rate was at a dangerous low of 2.9% in 1990, but increased to 7.3% in 2007, and 14.1%
104 in 2013 (Pakistan - Demographic and Health Survey 1990-1991; National Institute of Population
105 Studies, 2006-2007; National Institute of Population Studies, 2012-2013). Within the country,

106 significant differentials exist, with 26.6% of births in 2012/3 in urban Islamabad Capital
107 Territory being delivered by C-section, compared to 1.3% in rural Balochistan (National Institute
108 of Population Studies, 2012-2013). The rate for the highest wealth quintile was 33.9%, compared
109 to 4.3% in the lowest wealth quintile (National Institute of Population Studies, 2012-2013).

110

111 These patterns of receipt raise important questions about the factors that constrain or support
112 appropriate and equitable C-section provision; a topic that remains unexplored. The present
113 paper reports on a detailed qualitative investigation that provides insight into the socio-cultural
114 and political economic characteristics of a local health system context within which divergent
115 patterns of C-section receipt are produced.

116

117 **Methods**

118 The data presented in this paper are drawn from the qualitative component of a large mixed-
119 methods investigation into inequitable access to midwifery services in rural Pakistan. Data
120 collection took place in rural and urban areas of two districts of Punjab, Jhelum and Layyah, over
121 a nine-month period between November 2012 and July 2013. These districts were selected
122 because they span the range of development in Punjab, with Jhelum being a relatively well-
123 developed district, and Layyah one of the least developed. Sixty four percent of the population in
124 Jhelum is literate compared to 37% in Layyah (Literacy Rate of Pakistan District wise - CSS
125 Forums, n.d.). Rates of skilled birth attendance are 86% in Jhelum and 52% in Layyah (Mumtaz,
126 Levay, and Jhangri, 2015). Overall, national survey data indicate that C-section rates in Punjab
127 ranged from 25% in urban centres, to 14% in rural areas, although similar data are not available
128 at the district level (National Institute of Population Studies, 2012-2013).

129

130 The work was underpinned by the principles of institutional ethnography, a framework that gives
131 a central place to ways in which patients and practitioners describe their experiences, but which
132 situates such accounts within an understanding of broader socio-cultural, political and economic
133 structures that constrain and direct people's practices (Campbell and Gregor, 2002). The research
134 team was comprised of three female and 1 male researcher(s). This included XX, an
135 anthropologist and the primary data collector, and YY, a public health physician with three years
136 of clinical experience in both urban and rural settings in Pakistan and qualitative research

137 training. Both have extensive experience conducting qualitative research in rural Pakistan and
138 long-standing interests in reproductive health, gender and health inequalities.

139

140 Module 1 focused on health care providers, and employed both observation and interviews.
141 Loosely structured interviews were conducted with 11 physicians, 18 Lady Health Visitors
142 (LHV)/midwives/nurses, 38 community midwives and 15 Traditional Birth Attendants (TBA).
143 LHVs are a cadre of health workers trained to provide facility-based midwifery services in rural
144 areas. Community midwives (CMW) are a new cadre of providers trained to provide domiciliary
145 care. Table 1 lists the socio-demographic characteristics of these respondents. Facility-based
146 respondents (physicians, nurses, midwives and LHVs) were randomly selected from 12 public
147 sector facilities (two small-town district hospitals, 8 rural Basic Health Units, two semi-urban
148 Rural Health Centres) and 3 small-town private hospitals with surgical facilities. CMWs were
149 randomly selected from personnel databases of District Health Offices. All providers were
150 interviewed multiple times for a total of 91 interviews. Separate pre-tested interview guides were
151 used for each group of respondents. Information was elicited on maternal health services they
152 provided broadly and constraints and challenges of care provision. Repeat interviews were
153 conducted to explore in greater depth emerging themes. Ten CMWs also were accompanied and
154 observed during home visits, allowing for the documentation of 59 patient-provider interactions.
155 In addition, 20 hours of observation (over a 4-week period) were undertaken in the obstetrics
156 ward of District Hospital, Layyah and 6 hours in Jhelum.

157

158 Table 1 **Provider respondent demographics**

159

	Physicians (N=11)	Midwives/ Nurses /LHVs (N=18)	Community Midwives (N=38)	Traditional Birth Attendants (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. of years trained (mean)	6.4	2.4	1.5	0.1
Work in public sector only	2	8	0	0
Work in private sector only	2	0	37	11
Work in public and private sector	7	10	1	4
Conduct C-section procedures	7	0	0	0

160

161 Module 2 collected data from women and other family members. With the objective to elicit
 162 narratives of rural women's experiences seeking maternal health care, in-depth interviews were
 163 conducted with women aged 15-49 years who had given birth in the last 3 years (n=78); their
 164 husbands (n=35) and mothers-in-laws (n=18). Older women were included in the sample as they
 165 are often the primary decision-makers regarding younger women's receipt of maternity care.
 166 Women were free to talk about all their pregnancies' experiences. Table 2 lists the socio-
 167 demographic characteristics of these respondents. Pre-piloted loosely structured guides were
 168 used for each group. Interviews were not narrowly focused on C-sections, but rather covered the
 169 whole experience of seeking and receiving maternal health care. Initially, women who had given
 170 birth in the preceding three years were identified by the local Lady Health Workers (LHW) who
 171 maintain household registers, including data on all births. These respondents were asked to
 172 recommend other potential participants who, if recruited to the study, subsequently
 173 recommended more potential participants, thereby forming a snowball sample (Hammersley,
 174 1998). To understand wider sociocultural influences on women's maternal health seeking
 175 behaviours, including operative deliveries, we conducted 18 focus group discussions with six to
 176 ten participants in each, separately for women and men. Interview and focus group participants

177 were recruited with the assistance of LHW. Representation of all castes and socio-economic
 178 groups was ensured.

179

180 Table 2 **Patient and family member respondent demographics**

181

	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

182

183

184 All interviews and group discussions were audio-recorded (except for 5 interviews where
 185 permission was withheld, and detailed field notes were taken instead), and translated verbatim
 186 into English with an emphasis on retaining conceptual equivalence. Observational field-notes
 187 were recorded using a structured template and expanded on immediately after observational
 188 periods. The first author checked a random sample of transcripts for completeness and accuracy.
 189 In both modules, preliminary analysis proceeded concurrently with data collection in order that
 190 data saturation could be judged (Mayan, 2009). A database of transcribed notes was prepared and
 191 ATLAS-TI (Atlas.ti Scientific Software Development GmbH, n.d.), was used to manage the
 192 large volume of data. Data were coded inductively using a social constructivist, interpretative
 193 approach (Mayan, 2009). This approach views knowledge as a co-created construction of both a
 194 subjective and an objective reality. It acknowledges there are multiple realities and truths, which
 195 are a consequence of individual characteristics including but not limited to race, class, and
 196 gender (Mayan, 2009).

197

198 Two data coders separately developed a coding tree, which was then merged and applied
199 systematically to all transcripts and observational notes. Using a latent content analysis approach,
200 data was coded, and major domains and themes were identified. This approach is useful for
201 classifying large amounts of textual data into an efficient number of categories that represent
202 similar meanings (Mayan, 2009). Data from different sources (observations, interviews, focus
203 group discussions) were used to generate a comprehensive and rich understanding of factors that
204 shaped access to C-section. Data analysis was an on-going and iterative process throughout all
205 phases of data collection, as early identification allowed investigation of unanticipated concepts
206 and variables in the subsequent data collection activities. Researcher bias and interpretive
207 accuracy was assessed by triangulation of findings, research team peer debriefing and respondent
208 validation. An audit trail using personal memos and journaling was also maintained to ensure
209 dependability and confirmability, as advocated by Tuckett (2005).

210

211 Ethics clearance was obtained from the National Bioethics Committee (No. 4-
212 87/11/NBC/RDC/32/7 dated January 26, 2011, Pakistan and the University of ZZZ, Human
213 Ethics Research, Health Panel B (No. Pro00019042, dates August 0, 2011). Voluntary and
214 informed participation, confidentiality, and safety of participants constituted key principles of
215 researcher-respondent interaction. Written consent was obtained from health care providers and
216 verbal consent from community members. The latter was documented and signed by the
217 researcher. Both ethics committees approved verbal consent because in a context of low
218 educational levels, signing documents can be erroneously assumed to indicate transfer of land or
219 property.

220

221 **Results**

222 We identified three sets of important meanings attached to C-section held by patients, family
223 members and healthcare providers. Each of these could be seen as rooted in wider sociocultural,
224 economic and political processes operating within families, communities, and the wider
225 healthcare system.

226 1) Receipt of C-Section conflicted in several important ways with prevailing gendered values
227 and norms that shaped notions of appropriate female behaviour and positioned pregnant women
228 as dependent and lacking power. C-section was perceived as socially risky and morally corrupt.

229 2) Significant power differentials between service users and healthcare providers, and a climate
230 of mistrust, fuelled scepticism that C-sections benefit physicians rather than patients. Coupled
231 with financial constraints, C-section was therefore commonly perceived as an expensive
232 procedure of uncertain value for patients that carried significant physical risks.

233 3) Physicians perceived the surgical procedure as a symbol of obstetric skill and status,
234 distinguishing themselves from lesser qualified cadres of healthcare provider with whom they
235 were in competition. Organisational cultures and wider system characteristics encouraged
236 physicians to see C-section as a legitimate source of financial profit and provided no governance
237 or supervisory constraints on their promotion of the procedure.

238

239 **The gendered context of C-section**

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

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

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

252 *"Toba toba* (a religious expression asking for forgiveness from Allah), a male doctor is
253 *always there and he is doing the surgery and doing stitches... and the lady's shirt is*

254 pulled up till here [up to her chest] *so then what is left behind then ... toba, toba...* ”
255 (Mother-in-law)

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

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

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

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

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

278 In this social climate, labouring women who required a C-section for safe childbirth were placed
279 in a quandary. While often aware of the importance of a C-section for addressing certain
280 complications, a desire to maintain a positive relationship with family members, particularly
281 husbands and mothers-in-laws, created a reluctance to accept this mode of delivery. When asked
282 whether they would have a C-section if it were recommended by a doctor, women struggled to

283 respond. They hesitantly stated that they would only undergo the procedure if it became “a
 284 compulsion” but were unable to elaborate further. We observed numerous instances where
 285 physicians recommended C-sections and patients or families either refused outright or negotiated
 286 for vaginal delivery. More commonly, we witnessed them leaving against medical advice to seek
 287 care from an alternative provider (often a TBA or midwife) who was willing to deliver vaginally.

288

289 An additional factor that contributed to women’s avoidance of C-sections, was the widely
 290 acknowledged understanding that a woman who delivers by C-section will no longer be able to
 291 deliver vaginally. In addition, respondents expressed the opinion that a woman can undergo only
 292 three C-sections, thus limiting her parity to three children. In a context of strong preference for
 293 sons, C-sections were therefore seen as a potential threat to a woman’s ability to have the desired
 294 number of sons. A woman without a son is also considered a ‘failed woman.’

295

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

297 Negative perceptions of C-sections held by women and their family members were further
 298 fuelled by a lack of trust in healthcare professionals. In a context of limited literacy and lack of
 299 opportunities to access information, women and their families relied upon providers to
 300 recommend the best course of medical action. However, relationships between providers and
 301 patients, particularly poor women, were characterised by significant power differentials. We
 302 observed many instances of providers’ abusive and disrespectful behaviours towards patients.

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

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

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

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

340 Women shared with us stories of normal vaginal deliveries taking place either en-route to the
 341 clinic for a scheduled C-section or on the operating theatre bed while waiting for the physician to
 342 arrive and perform the surgery. These stories compounded the view that physicians often
 343 performed these procedures unnecessarily. This distrust resulted in situations of ambiguity and
 344 confusion for women and their families, during a particular time of vulnerability, when they
 345 needed trusted expert guidance most. Both interviews and observational work illustrated women
 346 and their families were confused and fearful when faced with the decision of a C-section. Such
 347 fear impaired their ability to make informed decisions. Importantly, the costs of C-section were
 348 prohibitive for poor patients. In the private healthcare system, C-sections were unregulated and
 349 generally expensive, ranging from PKR. 10,000 to 50,000 (a typical day labourer earned Rs
 350 11,000 per month). Even in public sector facilities, costs were incurred for drugs, surgical
 351 supplies and living expenses of an attendant.

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

356

357 **Provider understandings: status and profit**

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

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

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

367 *"Going to a doctor means an operation (C-section)"* (Midwife)

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

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

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

382 “*She said to me ‘If I don’t earn Rs.80,000-85,000 (approx.: US\$1000) in a day, I can’t*
 383 *sleep at night.*” (Physician)

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

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

394 “*We went to Dr. X for a check-up, she said ‘oh ho, you will have to get the operation*
 395 *done’.* We caught her dishonesty and called Ami. She said to go to the other hospital even
 396 if you have to spend more money. Ami said maybe at the other hospital they will say it is

397 normal. Then we came here, and they said there was still another two weeks to go and
398 then I had a normal delivery. Sometimes doctors get greedy.” (Mother)

399

400 **Discussion**

401 Principal findings and contribution to the literature

402 Findings from this research lead us to suggest that, as in many parts of the world, both under-
403 and over-receipt of C-sections is occurring within the same location (Miller et.al 2016). Access
404 to C-sections for women in our field sites was limited by gender norms that prize female
405 seclusion and stoicism, leading to a reluctance to accept the procedure among women and their
406 family members. They also struggled to make informed decisions in a context characterised by
407 inadequate and inconsistent information. At the same time, physicians, particularly those with
408 obstetric surgical skills, tended to recommend and conduct unnecessary C-sections, while
409 midwives, Lady Health Visitors and traditional birth attendants discouraged the procedure even
410 when the birth was complicated. This combination of influences, together with disrespectful
411 healthcare professional behaviours, and high financial costs of the surgery, has led to
412 misunderstanding and mistrust of C-sections. This leads to both missed opportunities when
413 women who genuinely need a C-section but refuse to undergo the procedure, as well as
414 medically unjustified procedures which can increase the risk of morbidity and mortality for
415 birthing mothers and new-borns, with increasing burdens to the healthcare system (Liu et al.,
416 2007; Chatterjee and Laxminarayan, 2013).

417

418 A number of our findings align with the current body of literature documenting reasons
419 underlying under- and over-receipt of C-sections. For example, the finding that gender norms
420 that prize women’s stoicism during childbirth and prevent uptake of C-sections has been reported
421 from diverse contexts such as Uganda (Kabakyenga et.al, 2011) and Nigeria (Ugwu and de Kok,
422 2015). Similarly, the finding that physicians conducted un-necessary intrapartum ‘emergency’ C-
423 sections is supported by Kalish’s research from the United States (Kalish et.al, 2004). Aimed at
424 exploring the incidence of emergency intra-partum C-sections, the researchers found that 13% of
425 a sample of 422 intrapartum C-sections had been conducted without a clear medical indication.
426 The authors concluded these unnecessary intrapartum C-sections were imposed on the patient

427 under the guise of an ‘emergency’, an experience that was common to our respondents.

428

429 Our study has added nuance to a growing body of literature on women’s level of involvement in
430 decision-making around delivery by C-section. This decision-making literature shows that
431 women’s level of involvement varies by reason for C-section. C-sections are divided into
432 elective and emergency procedures. Elective C-sections are described as operative deliveries in
433 which the decision is made before the onset of labour. A systematic review of 92 studies reveals
434 that, worldwide, women have a larger role in elective C-section decisions, compared to
435 emergency C-sections (Sivnathajothy and Mumtaz, 2019). Our data from rural Pakistan,
436 however, do not fit in this clean dichotomy of decision-making. None of our respondent
437 differentiated between elective and emergency C-sections, although a number of respondents had
438 been recommended the procedure before the onset of labour. More importantly, our data show
439 women rarely made the decision alone. The decision to proceed with the C-section was made by
440 the physicians and approved of or not by the husband and other elder women in the family.

441

442 Strengths and limitation

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

458 the study illustrates the value of detailed qualitative investigation into the socio-cultural and
459 political economic, influences on C-section rates, demonstrating the importance of moving
460 beyond a narrow focus on clinician competencies and facility readiness.

461

462 Implications for Policy and Practice

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

471

472 There is also a need to improve the practice of evidence-based medicine among physicians, as
473 has been noted elsewhere (Langer and Villar, 2002; Villar, Carroli, and Gülmezoglu, 2001).
474 Physicians in rural areas could be supported by making available updated evidence in user
475 friendly formats such as the WHO's reproductive health library (Sexual and Reproductive
476 Health, n.d.). We also recommend further research to assess the feasibility of introduction of
477 audit systems that measure physician-level C-section rates and making this information widely
478 available in formats easily accessible to rural populations (Dekker et al., 2018). Evidence shows
479 that providers known to be supportive of vaginal deliveries are more trusted and accessed by
480 patients (McGrath and Phillips, 2009). Research should also assess if physicians could be
481 rewarded for having C-section rates more aligned with WHO standards as one indicator of their
482 practising evidence-based, good quality care (World Health Organization, 2015).

483

484 However, empowering women and their families to make informed decisions, building their trust
485 in physicians, ensuring poor women's access to the procedure when indicated, and reducing
486 unnecessary procedures, is a longer term project that will require more radical interventions. The
487 first, we suggest is a need to revisit the business ethos of the prevailing private health care
488 system. Our findings suggest financial profit underlies both unscrupulous promotion of needless

489 C-sections by physicians and recommending avoidance of the procedure when clinically
490 indicated by midwives, Lady Health Visitors and traditional birth attendants. Currently, over
491 70% of maternal health care services in Pakistan are provided by the private sector (National
492 Institute of Population Studies, 2012-2013). Given the dominance of the private health care
493 sector, which has been further buoyed by the the recent push to privatize the health care system
494 in low and middle-income countries by the International Monetary Fund, we recommend, as a
495 first step, research to assess the feasibility of introducing of price caps and regulations to limit
496 the financial incentive for physicians to prescribe needless C-sections (Stuckler and Basu, 2009).
497 This would benefit patients as price caps would prevent costs from becoming prohibitive,
498 especially for low income households. Coupled with rigorous auditing of practices and sanctions
499 for poor performance, this might go some way to reducing unnecessary procedures. Further
500 research is also required to explore other potential of strategies to control un-necessary C-
501 sections.

502

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508

509 **Conflict of interest**

510 The authors have no competing interests to declare.

511

512 **Contribution of authorship**

513 ZM was responsible for conception and design of the study, data collection, and analysis and
514 manuscript development. SS contributed to data analysis, and manuscript development. AB
515 collected the data. All authors approved the final version of the manuscript.

516

517 **Ethical approval**

518 Ethics approval was obtained from the University of Alberta Health Research Ethics Board (ID:
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526

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