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A Comparative Appraisal of Socio-Economic Profiles and Perceptions of Women on Health System Responsiveness of Government and Semi-Government Maternity Services at Childbirth: Evidence from Sri Lanka

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Abstract. *Background.* Health system responsiveness is a multidimensional construct that encompasses the non-clinical aspects pertaining to ways and environments in which individuals are being treated. Medicalization of child birth ensures safe delivery but poses challenges for women, and their socio-demographic characteristics may influence accessing government or private sector maternal services. Nevertheless, their perceptions on responsiveness of those services would reflect a crucial aspect of quality of care provided.

Objective. This study is aimed at comparing socio-economic profiles and perceptions of women on responsiveness of maternal services they received at child birth provided by government and semi-government sectors in Sri Lanka.

Method. A hospital based descriptive cross-sectional study was conducted with comparative components among maternity patients in a government district general hospital and a tertiary care semi-government hospital in Sri Lanka. The total sample comprised of 383 women who delivered their babies at respective institutions (n=193) in government sector and (n=190) in semi-government sector. Data were collected using an interviewer administered questionnaire supported by non-participatory observations.

Results. Women who accessed services from two sectors displayed significant differences in their socio-demographic profiles. The level of overall perceived health system responsiveness at child birth deemed significantly lower for the government sector compared to the semi-government sector ($p<0.05$). Majority of the government hospital users rated "basic amenities" (77.7%) as the most important element in health system responsiveness whilst 97.3% of women who accessed semi-government sector rated "communication" as the crucial element.

Conclusion. Women who accessed government and semi-government sectors for childbirth demonstrated heterogeneous socio-demographic profiles. The perceived health system responsiveness of the semi-government hospital was significantly higher than the government hospital. Reducing the over crowdedness in tertiary health care institutions by improving facilities at lower level maternity services could be able to enhance health system responsiveness in Sri Lankan context.

Key words: Maternal health services, health system responsiveness, parturition, public, private sector, Sri Lanka

Introduction

Child birth denotes a treasured milestone in women's life cycle, but paints the gloomy picture as "one woman dies every 90 seconds due to complications during pregnancy or child birth" and "they are not dying because the health community does not know to prevent deaths; they are dying because the world is failing to help" (Care International, 2015). Medicalization

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of the maternity services becomes essential to ensure safety of lives of mother and the baby, nonetheless creating a challenging situation. Maternity care performance appraisal is underpinned by two dimensions dominated by health outcomes and women's experience on client friendly services by feeling secure, treated with respect, facilities available and accessible etc. (Family Health Beaureau, n.d.).

Respectful care during child birth, has garnered recognition as a universal human right that embraces respect for women's feelings, dignity, choices and preferences (White Ribbon Alliance, 2011; Windau-Melmer, 2013; Reis et al., 2012). Therefore, client experience of performance appraisal of maternity care reflects an independent outcome of performance in the context of similar standards of health outcomes. Moreover, it may affect health outcomes directly or indirectly (Scheerhagen et al., 2015), therefore, quality of care in maternal services has become pivotal as perceived by the service recipients (Sjetne, Iversen, & Kjollesdal, 2015; Pantoja et al., 2020; Okonofua et al., 2017; Karkee, Lee, & Pokharel, 2014; Kc et al., 2020). Studies reported that perceived quality of care significantly differed by type of service facility pertaining to aspects such as supplies and equipment, amenities and interpersonal aspects (Karkee, Lee, & Pokharel, 2014; Kc et al., 2020).

The World Health Organization (WHO) introduced the 'Health System Responsiveness Model' in the year 2000 as an attempt to develop a broader conceptual framework on health systems performance recognizing 'responsiveness' as one of the key goals of the health system of a country (WHO, 2000). Moreover, this model allows inter-country and intra-country comparison of health services across cultures and geographic terrains. The premise of the model underpins the acknowledgement of the possibility of arriving same client experience in different settings by various means (De Silva, 2000; Murray, & Frenk, 2000). Hence it deliberately focuses on the client experiences rather than the characteristics of processes and structures (WHO, 2000; De Silva, 2000; Murray, & Frenk, 2000).

Murray and Frenk (2000) operationalized the 8 main domains of responsiveness model under 2 subcomponents such as *client orientation* which includes major components of consumer satisfaction such as social support during care, quality of health facilities basic amenities, choice and prompt attention. The other component is respect of persons that capture elements of interaction of individuals with the health system which includes dignity, autonomy, confidentiality and communication (Murray & Frenk, 2000). In the ignorance of health institutions on non-health related expectations of service users, conducting comparative studies on public and private hospitals to improve responsiveness of the health system has become a need (De Silva, 2000). Assessing health system responsiveness of maternity care is fraught with many challenges (van der Kooy et al., 2014).

Sri Lanka as a lower-middle-income country (LMIC) possesses a unique public health care delivery model extended to the grass root level which has contributed to many health gains such as a maternal mortality ratio of 32.5 per 100,000 live births which is on par with some developed countries and more than 98% of births attended by professionals (Haththotuwa et al., 2012). There is a hierarchy of public (government) hospitals from tertiary hospitals to primary medical care units in the country that provide maternal health care services free of charge for all socio-economic groups (Perera et al., 2019). Consultant gynecologists and obstetricians employed at almost all base hospital levels upwards and midwives and trained nurses at almost all health care institutions at the level of primary medical care units (Haththotuwa et al., 2012; Perera et al., 2019). Therefore, 85% of Sri Lankan women deliver in health facilities with Consultant Obstetricians and Gynecologists (Haththotuwa et al., 2012). The country is aspiring accomplishment of 100% institutionalized deliveries, therefore it is important to pay attention to maternal service responsiveness.

Previous researches assessed quality of care in maternity services in Sri Lanka in client's perspective with regard to antenatal and postnatal services (Senarath, Fernando, & Rodrigo,

2006; Wickramasinghe, Gunathunga, & Hemachandra, 2019; Lazzerini et al., 2019), however, no study conducted on perceived responsiveness. Against this backdrop, present study aimed for comparative appraisal of perceptions of women on responsiveness of government and semi government maternal services at childbirth within their socio-demographic contexts.

Methodology

A government sector District General Hospital in the Western Province of Sri Lanka namely District General Hospital Kalutara (DGHK) which caters to a mix of urban, rural and estate sectors and ethnic and religious groups that represent the country. Partnership of government and private sector has come to play a quasi-market role in order to bridge the gap between these two sectors (Smith, 2018) and Sri Jayawardanapura General Hospital (SJGH) is one of the leading private public partnership tertiary care hospitals in Sri Lanka. Therefore, it was prudent to include this hospital to represent the semi-government sector in of health care provision. A descriptive cross sectional study was conducted in maternity wards of these two hospitals.

The study population included women receiving care in each of the post natal maternity wards during a specific time period during 2 months of data collection period in the DGHK and SJGH. Non- probability consecutive sampling was carried out among women discharged on the day of data collection who had delivered their babies in respective maternity wards. Those who received care at Intensive care units in both hospitals and stayed in paying wards of SJGH were excluded from the study.

Sample size was calculated using the following formula (Lwanga, Lemeshow, & World Health Organization, 1991):

$$n=\frac{z^2p(1-p)}{d^2} \quad (1)$$

where n – number of participants; z – critical value of specified confidence interval (1.96); p – anticipated population proportion (50%); d – absolute precision required on either side of the proportion (5%).

$$n=\frac{1.96^2 0.5(1-0.5)}{0.05} = 384 \quad (2)$$

Non-response rate of 10% was allocated.

Total sample size ≈ 422

Therefore, it was determined to include approximately 211 women who delivered their babies in each hospital setting.

Data were collected using an interviewer administered pretested questionnaire comprised of socio-demographic/ service accessibility information and items of perceived health system responsiveness of care received. Key informant survey questionnaire of the WHO (https://www.who.int/responsiveness/surveys/en/) was used as a guide in preparing the questionnaire. The questionnaires were administered to the women who delivered their babies following informed consent.

The developed questionnaire was assessed for its content and comprehensiveness by an expert panel. A pre-test was done among a convenient sample of 15 pregnant women from a different hospital to assess clarity and respondent's burden and necessary modifications were made. A pilot study was conducted to identify the limitations and feasibility of data collection which was an 'exit survey'. The data collection period extended from 6th of April to 4th of June 2016 on randomly selected days in each hospital until the required sample size is obtained.

A five point Likert scale was used to assess responses of the close ended questions pertaining to 29-items of health system responsiveness scale which represented 8-domains. The "dignity' domain had 3-items, "confidentiality": 2 items, "choice": 2-items, "prompt attention": 3-items, "autonomy": 2-items, "communication": 8-items, "quality of surrounding

and environment": 6-items and "social support during care": 3-items.The scorings are as follows.

Yes, always	Sometimes	Not sure	Not sometimes	Not at all
5	4	3	2	1

Moreover, pertaining to each domain of health system responsiveness scale, perceived importance of the respondent was assessed as follows:

Extremely important	Quite important	Can't decide	Almost not important	Not at all important
5	4	3	2	1

The responses were aggregated into 3 categories as "high" (score=4,5), "moderate" (score=3) and "low" (scores=2,1).

Data entry and analysis was carried out using SPSS-21 statistical package. Total score of items of health system responsiveness multi-dimensional scale pertaining to each domain was computed. Subsequently, the median score value for each domain was used to dichotomize the respective scores as 'low' (< median score) and 'high' (≥ median score). Respective categories in each domain among two cohorts of women who obtained services from government and semi-government sectors were compared using Chi-Square Test of statistical significance. The ethical clearance for the study was obtained from the Ethics Review Committee of Postgraduate institute of Medicine, Colombo.

Results

The response rate was 90.7% which deemed high. However, the non-respondents comprised of pregnant women who had complicated deliveries and those who belonged to minor ethnic groups.

Table 1. Comparison of demographic profiles of women who delivered their babies at government and semi-government hospitals

Demographic attribute	Government hospital users		Semi-government hospital users		Chi-square value	p-value
Age in years	27.69 (26.95-28.42)*		30.81(26.95-28.42)*			0.0001**
Age group	N	(%)	N	(%)		0.0001¶
18-25 years	74	(38.3)	22	(11.6)		
26-35 years	108	(56.0)	133	(70.0)		
>35-years	11	(5.7)	35	(18.4)		
Total	193	(100.0)	190	(100.0)		
Ethnicity						
Sinhala	130	(67.4)	167	(87.9)		0.0001¶
Tamil	15	(7.8)	10	(5.3)		
Muslim	46	(23.8)	13	(6.8)		
Other	2	(1.0)	0 1	(0.0)		
Total	193	(100.0)	190	(100.0)		
Religion						0.989¶
Buddhists	124	(64.3)	122	(64.2)		
Christian	8	(4.1)	8	(4.2)		

Islam	45	(23.3)	46	(24.2)		
Hindu	16	(8.3)	14	(7.4)		
Total	193	(100.0)	190	(100.0)		
Sector						0.001¶
Urban	96	(49.7)	93	(49.0)		
Rural	80	(41.5)	95	(50.0)		
Estate	17	(8.8)	2	(1.0)		
Total	193	(100.0)	190	(100.0)		
Geographic distance***						
<5 km	31	(16.1)	0	0.0		
5-15 km	18	(9.3)	0	0.0		
15-30km	50	(25.9)	52	27.4		
>30 km	94	(48.7)	138	72.6		0.00001¶

Note: *mean (95% Confidence Interval); **Mann-Whitney U Test; ¶Chi-square Test; ***self-reported distance to the hospital from home

Table 1 demonstrates the demographic profile of two cohorts of women who had child birth at government and semi-government hospital settings. There was a significant difference in mean ages of two cohorts ($p<0.05$) corroborated by break down into age groups as there were significantly older women in age groups of >35-years as well as 26-35 years who accessed the semi-government sector compared to their counter-part at the government hospital setting. Furthermore, there were significant differences in ethnicity and sector among the two cohorts of women as higher numbers belonged to minority ethnic groups and estate sector accessed government hospital setting than the semi-government hospital setting ($p<0.05$). Moreover, significant proportion of women lived over 30 km from the respective hospitals which was more evident for the semi-government hospital.

Table 2. Comparison of socio-economic attributes and distance to maternal care among who delivered their babies at government and semi-government hospitals

Socio-economic attribute	Government hospital users		Semi-government hospital users		
	Number	%	Number	%	p-value**
Educational attainment					0.00001
Primary	89*	46.1	5	2.6	
Secondary	49	25.4	59	31.1	
High School	40	20.7	90	47.4	
Degree/diploma	15	7.8	36	18.9	
Total	193	100.0	190	100.0	
Employment status					0.0001
Unemployed	135	69.9	74	38.9	
Employed	58	30.1	116	61.1	
Total	193	100.0	190	100.0	
Employment status of spouse					0.449
Unemployed	5	2.6	2	1.1	
Employed	188	97.4	188	98.9	
Total	193	100.0	190	100.0	
Monthly household income					0.0001
Upto Rs.5000.00	10	5.2	7	3.7	

Rs.5001- Rs.15000.00	24	12.4	8	4.2	
Rs.15001-Rs.30000.00	99	51.3	20	10.5	
Rs.30001-Rs.60000.00	48	24.9	55	29.0	
>Rs.60000.00	12	6.2	100	52.6	
Total	193	100.0	190	100.0	

Note: *2 did not receive any formal education; Chi square test

Table 2 illustrates the socio-economic profiles and distance to maternal care among two cohorts of women. As evident from the findings, women who delivered their babies at semi-government maternity wards had higher educational attainment, employed more and over a half reported monthly household income above Rs.60000.00 compared to their counterpart who accessed government maternal wards, those differences were statistically significant ($p<0.05$).

Table 3. Comparison of domains of health system responsiveness of maternal care at child birth as perceived by women government and semi-government hospitals

Categorization of perceptions on domains of responsiveness	Government hospital users		Semi-government hospital users		*p-value*
	N	%	N	%	
Dignity					
Low	135	69.9	22	11.6	
High	58	30.1	168	88.4	0.001
Confidentiality					
Low	150	77.7	20	10.5	
High	43	23.3	170	89.5	0.001
Choice					
Low	136	70.5	31	16.3	
High	57	29.5	159	83.7	0.001
Prompt Attention					
Low	121	62.7	52	27.4	
High	72	37.3	138	72.6	0.001
Autonomy					
Low	100	51.8	48	25.3	
High	93	48.2	142	74.7	0.001
Quality of basic amenities					
Low	117	60.6	59	31.0	
High	76	39.4	131	69.0	0.001
Social support during care					
Low	34	17.6	45	23.7	
High	159	82.4	145	76.3	0.142
Overall responsiveness					
Low	167	86.5	17	8.9	
High	26	13.5	173	91.1	0.001

As demonstrated in Table 3, perceptions on domains of health system responsiveness of women who used government and semi-government hospital maternity wards for child birth differed significantly except for 'social support during care'. Accordingly, the women who used semi-government hospital maternity wards perceived significantly higher levels than their

counterpart who accessed maternity wards of the government hospital ($p<0.05$). A spectacular difference in overall responsiveness was evident among respondents, as the overwhelming majority (91.1%) of women who delivered their babies at the semi-government hospital perceived that to be high whilst the opposite was expressed by the majority (86.5%) of women who accessed government hospital.

Table 4. Comparison of perceived importance of elements of responsiveness among women who accessed government sector and semi-government sector hospitals

Element of responsiveness	Government sector		Semi-government sector	
	Frequency	Percentage	Frequency	Percentage
Dignity	Mean 4.21 SD ± 1.216		Mean 4.83 SD ± 0.467	
Low	27	14	0	0
Moderate	33	17.1	7	3.7
High	133	67.9	183	96.3
Confidentiality	Mean 3.06 SD ±1.116		Mean 4.59 ± SD 0.783	
Low	66	34.2	6	3.2
Moderate	40	20.7	17	8.9
High	87	45.1	167	87.9
Choice	Mean 2.44 SD ± 1.206		Mean 4.42 ± SD 1.2	
Low	128	66.3	19	10
Moderate	20	10.4	20	10.5
High	45	23.3	151	79.5
Prompt attention	Mean 3.63 SD ± 1.244		Mean 4.62 ± 0.724	
Low	62	32.1	0	0
Moderate	12	6.2	27	14.2
High	119	61.7	163	85.8
Autonomy	Mean 2.45 ± SD 1.198		Mean 3.48 ± SD 1.394	
Low	129	66.9	38	20
Moderate	23	11.9	72	37.9
High	41	21.2	80	42.1
Communication	Mean 3.33 ± SD 1.115		Mean 4.85 ± SD 0.471	
Low	39	20.2	2	1.1
Moderate	35	18.1	3	1.6
High	119	61.7	185	97.3
Quality of basic amenities	Mean 4.32 ± SD 1.051		Mean 4.85 ± SD 0.463	
Low	18	9.3	5	2.6
Moderate	25	13	3	1.6
High	150	77.7	182	95.8
Social support during care	Mean 4.34 ± SD 1.074		Mean 4.64 ± SD 0.79	
Low	16	8.3	9	4.7
Moderate	38	19.7	10	5.3
High	139	72.0	171	90.0
Total	193	100.0	190	100.0

Table 4 demonstrates the relative importance of the domains of health system responsiveness as rated by women who delivered their babies in two sectors of hospitals. Accordingly, 'quality of basic amenities' was the highest rated by the majority (77.7%), followed by social support during care (72.0%), 'dignity' (67.9%), prompt attention (61.7%) and 'communication' (61.7%) were the highest rated domains perceived by women who

accessed government hospital whilst 'communication' (97.3%), 'dignity' (96.3%), 'quality of basic amenities' (95.8%), 'social support during care' (90.0%),'confidentiality' (87.9%) and 'prompt attention' (85.8%) were among the highest rated domains by women who accessed maternity services of the semi-government hospital.

Discussion

Present study provides valuable insights into the perceptions of women on health system responsiveness of maternal services at childbirth provided by a government and a semi-government hospital in Sri Lanka. The overall perceived health system responsiveness deemed significantly high for the semi-government sector compared to the government reflected across 7 domains of responsiveness scale except for social support domain. The government sector of the country caters to all socioeconomic strata of the population, yet predominantly patronage by low socio-economic groups. Furthermore, the private sector caters both to high and middle socio-economic groups (Smith, 2018). This notion was reflected from the findings of the study as socio-economic profiles of two cohorts of women demonstrated significant differences. Accordingly, older educated women, whom were employed and had higher monthly household incomes accessed the semi-government hospital whilst, significantly high younger women who belonged to ethnic minorities, unemployed with lower incomes obtained services from the government hospital. This may explain the positive influence of education on economical levels and more opportunity to choice (Jeewaratne, 2009).

Nevertheless, the majority of women from both cohorts were in the age groups of 26-35 and their mean ages were higher than the mean age of marriage in Sri Lanka 23.4 (Pantoja et al., 2020). Such a phenomenon is evident in the fourth stage of obstetric transition (Haththotuwa et al., 2012) thus having many implications in maternal and child health outcomes. On the other hand, over-representation of Muslim and estate sector women in the government sector plausibly reflects the diverse ethnic distribution of the main geographic terrain to the District General Hospital Kalutara (DGHK). Overall, the ethno-religious structure of the maternal service recipients of the government sector corroborated the demographic trends of Sri Lanka (Ranasinghe, 2012). Service recipient women in both sectors were mostly from distances more than 30 km, significantly over-represented in the semi-government sector. Therefore, present evidence indicate the need for strengthening of maternal care services of divisional hospitals since travelling more than 30 km for child birth not only contradict the improvements in health services but increases probability of caesarian section rates, unnecessary costly hospital days and other delays due to travelling.

The relatively better performance social support domain in perceived responsiveness of government sector merits further exploration. As observed, the maternal care providers especially the midwives were well trained on breast feeding shared the relevant information with role plays involving the mothers. Moreover, the domains that were perceived to be low in this sector consisted of confidentiality, dignity and choice. The government sector seems poor in providing choice which is an expensive service factor to provide (Windau-Melmer, 2013; De Silva, 2015). Autonomy was perceived by respondents as "they know best" at interviews. Those findings corroborated another similar study that reported lower perceived responsiveness for autonomy and choice (Okonofua et al., 2017). Present findings broadly corroborated findings of a similar study conducted in first referral facilities in Ghana (Srofenyoh, Otchi, & Atinga, 2017). Accordingly, three domains, 'privacy and confidentiality', 'dignity' and 'autonomy' had satisfactory performance. Dignity, prompt attention and continuity of care were ranked as the top three most important domains. Socio-economic factors significantly influenced the rankings as respondents of better socio-economic status preferred to be treated with "dignity" whilst those with poor socioeconomic status prefer "prompt attention" foremost.

The semi- government sector was perceived to be highest for confidentiality. Nurses attending one to one was observed during the study instructing and assisting mothers on breast feeding and on relevant caring procedures. The perceived low responsiveness on quality of basic amenities in government hospital indicated that service recipients were dissatisfied with the basic facilities provided. The WHO health survey 2000 states that in Sri Lanka the most important element rated was quality of basic amenities (White Ribbon Alliance, 2011), which was rated high by both cohorts of women who accessed maternal services in the present study.

When collecting suggestions for improvements of each sector, majority of patients were satisfied in the semi government sector with the conditions available and few suggestions were made which were pertaining to improving cleanliness of the toilets, bystander availability and improvement of quality of food as more patients consumed food from the semi government sector than the government as reported by a previous study (Jeewaratne, 2009; Amarasinghe, 2012). Moreover, majority of women accessed government hospital requested improvements mainly pertaining to the gaps observed such as facilities to rest, availability of beds, availability of bystander at least on the first day following a caesarian section and friendlier staff towards the patients. As Royal College of Obstetricians and Gynaecologists (2008) recommends adequate rest, comments and complaint procedure, opportunity to discuss experience and a policy in place to identify women at risk of domestic abuse with staff trained to communicate and support such situations were observed absent in the government sector.

Achieving the goal of optimal health system responsiveness seemed an upstream swim in maternal services in Sri Lankan context. Nevertheless,accomplishing this goal becomes pertinent as Darby C et al sates “it could be achieved by sharing information preserving human rights and can be improved without heavy investments and could be the first to achieve before other two goals” (Darby et al., 2001).

Conclusion

Sri Lankan women who accessed government and semi-government sectors for childbirth demonstrated heterogeneous socio-demographic profiles which may have influenced their choices. The semi-government sector scored significantly higher than the government sector for overall as well as 7 out of 8-domains of perceived health system responsiveness. Nevertheless. reducing the over crowdedness in tertiary health care institutions by improving facilities at lower level maternity services could be able to enhance health system responsiveness in Sri Lankan context.

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