

## Web Appendix B. Maternity service quality measurement instrument

Topics	Dimensions	Theoretical Constructs
Topic1_30_5_57_7_Capacity_Related_Concerns	Limited care capacity Not enough patient rooms available Limited space in wards No patient privacy Overcapacity in hospital ward No comfort on the ward Staff shortages Overburdened midwives Doctors' English level Difficulties with language understanding (for foreign patients)	<b>Tangible</b> Physical aspects (Brahmbhatt et al., 2011) Infrastructure (Padma et al., 2009, 2010) Responsiveness (Anbori et al., 2010)
Topic10_27_Insufficient_Amenities	Parking situation Conditions of the toilets Conditions over floors, walls Appropriate washing facilities The bathrooms are not fit for purpose	<b>Tangible</b> Tangible (S. Andaleeb, 2008) Physical aspects (Brahmbhatt et al., 2011)
Topic12. Night-time Care Conditions	The noise in the wards Patients needed more help at night Wards are short staffed Allowing partners to stay with mother to help	<b>Tangible</b> Physical aspects (Brahmbhatt et al., 2011) Responsiveness (Abuosi & Atinga, 2013; Ahmadi, 2017; Lam & Woo, 1997; Lin et al., 2004) Empathy/Access (Adams et al., 2009) NIGHT TIME CARE CONDITIONS (author's construct)
Topic18. Labour Ward_Access	Appropriate facilities accessibility	<b>Tangible</b> Physical aspects (Brahmbhatt et al., 2011) Tangibles (Lin et al., 2004)
Topic2_49_48_62_50_60. Staff Attitude	Not enough nurses working Nurses rudeness Nurses simply don't have the time to help you Staff attitude Doctors lack empathy Consultant brash and condescending Inappropriate questions to the patient of a personal nature Check-ups in hospital felt quite rushed Appointments were very rushed	<b>Empathy</b> Empathy (Processes) (D. H. Lee, 2017; D. Lee & Kim, 2017) Communication with nurses (Webster et al., 2011)
Topic20. Deficit of Hospital Resources	Lack of resource in hospital Hospital understaffed	<b>Tangible</b> Responsiveness (Anbori et al., 2010) Tangibles (Abuosi & Atinga, 2013)
Topic32_3_23. Appointment Management System	Needs ticketing system for appointments Appointments wrong times Appointments without patients knowledge Appointment waiting times	<b>Process</b> Convenient and Fair Process (Otalora et al., 2018)

Topics	Dimensions	Theoretical Constructs
	Long delays in doctors' appointments Very quick check up	Process of healthcare Administrative procedures (Siddiq et al., 2016) Process (Brahmbhatt et al., 2011)
Topic35. Quality of Food	The food in the hospital is sub standard Not provided with a healthy breakfast or supper No fruit, hot breakfast porridge or eggs provided Very small portions and processed food	<b>Tangible</b> Food and beverage (Aborumman & Aborumman, 2011) Tangibles (Ahmadi, 2017) Physical aspects (Brahmbhatt et al., 2011)
Topic36. Management of Visiting Times	Visiting times are only available now in the evening Limiting visits to the baby's grandparents only Too many visitors in ward with other patients outside of visiting times Visiting hours are NEVER adhered to or enforced Too noisy during the visiting at the ward.	<b>Process</b> Process (Brahmbhatt et al., 2011) Process of healthcare administrative procedures (Siddiq et al., 2016)
Topic54. Insensitive Care Conditions	Sleep is very difficult in the wards Needed for mums to get milk The neonatal is up stairs Pregnant woman put onto a ward with women who either had had miscarriages	<b>Empathy</b> Empathy (Abuosi & Atinga, 2013; Lam, 1997; Lin et al., 2004)
Topic8_Doctors'_Pre-visit_Preparation	Doctors not reading case notes Communication between doctor team on care and history Doctors during the antenatal appointments could read files properly No communication or agreement on timings across the board	<b>Process</b> of clinical care (Padma et al., 2009, 2010)
Topic11_Labour_Postnatal_Support_and Delayed_Appointments	Frequency in delays or cancellation Timeliness	<b>Process</b> Service Reliability (Otalora et al., 2018) Responsiveness (Büyüközkan et al., 2011) Process (Büyüközkan et al., 2011) Process of healthcare administrative procedures (Siddiq et al., 2016)
Topic21_Care_Under_Exceptional_Circumstances	Medical staff understand clearly patients' specific needs	<b>Empathy</b> Empathy (Abuosi & Atinga, 2013) Physician–Patient Relationship (Otalora et al., 2018)
Topic26_37_53_Access_to_Pain_Relief	Pain control More options for pain relief Offering pain relief such as gas & air at an early stage Staff do not respond to complaints of pain (contractions) Epidural pain relief	<b>Pain management</b> (Webster et al., 2011)

Topics	Dimensions	Theoretical Constructs
Topic28_Discharge_Issues	Discharge late evening Conflicting information from staff on discharge Lack of information from staff on discharge	<b>Process</b> Process (Brahmbhatt et al., 2011)  Process of healthcare administrative procedures (Siddiq et al., 2016)
Topic43_63_Need_for_Increased_Breastfeeding_Support	System does not support breastfeeding Unnecessary pressure put on mothers to breastfeed Breastfeeding support after baby is born needs a lot of work	<b>Competency</b> Professionalism/Skill/Competence (Ramsaran-Fowdar, 2005)
Topic52_29_31_Information_Support_and_Individualised_Options	Method of birth could be agreed upon earlier in the pregnancy Information on all available delivery options is not provided Disappointing attitude of consultant towards a natural birth Doctors and nurses provide a clear and understandable information Respect for patients personal choices More respect given to personal choices of parents Birth plan was not taken into consideration Emergency could have been avoided with just 1 minute bedside scan at the clinic appointment Should listen to the woman knew that the movements weren't the right way	<b>Empathy</b> Empathy (Abuosi & Atinga, 2013; Al-Damen, 2017; Anbori et al., 2010; Lam, 1997; Lin et al., 2004; Ramsaran-Fowdar, 2005) Personalization (Isa et al., 2014; Karami et al., 2016; Raajpoot, 2004) Reliability (Brahmbhatt et al., 2011) Responsiveness (Ahmadi, 2017)
Topic56_38_Holistic_Care_Experience	Primary quality; technical quality Treatment process and its outcome Reliability Understanding of illness Unsatisfactory comprehensive care Midwives have no experience to put cannula Midwives are extremely patronising and unkind Advice about diet is not up to dated and glucometer is faulty	<b>Process</b> Credibility (Pakdil & Harwood, 2005; Parasuraman et al., 1990; Zeithaml et al., 1990) (Zeithaml et al. 1990) Process of clinical care (Padma et al., 2009, 2010)
Topic13_17_25_46_34_Insufficient_Care_Checks (Pre and Postnatal)	Ensuring that all checks tests have occurred Missed tests Ineffective process checks Caring for midwives after delivery Explaining how birth was and how feeding was going Midwives could deliver your medical information instead of the doctors Post delivery mental health checks More emphasis on mental health (baby blues, postnatal depression, supports available and coping mechanisms) at antenatal stage and by public health nurse and GP after the birth Patient Check-up Postnatal Not asked any questions about myself Checking not only the child, but also the pregnant woman herself	<b>Process</b> Process of clinical care (Padma et al., 2009, 2010) Process (Brahmbhatt et al., 2011)

Topics	Dimensions	Theoretical Constructs
	<p>Need for more prenatals scanningc</p> <p>Insufficient number of scans</p> <p>The need to go to private hospitals for additional scans</p> <p>Necessary scan which can detect potential issues at an early stage</p> <p>Confidentiality when having a scan (list of other patients names came up on the monitor)</p>	
Topic14_33_44_Ineffective_Post_Care	<p>More care for women who had c-section</p> <p>The baby with mother after c-section</p> <p>Monitoring of baby post birth</p> <p>Insufficient number of scans</p> <p>The need to go to private hospitals for additional scans</p> <p>Necessary scan which can detect potential issues at an early stage</p> <p>Confidentiality when having a scan (list of other patients names came up on the monitor)</p> <p>Postnatal care management</p> <p>Launch a maternity baby app with useful notifications throughout pregnancy, and in first days postnatal</p> <p>Short postnatal check</p> <p>Communication in the initial days post-natal</p>	<p><b>Reliability</b></p> <p>Service Reliability (Otalora et al., 2018)</p> <p>Empathy (Ramsaran-Fowdar, 2005)</p>
Topic39_Detection_and_Treatment_of_Infections	<p>Public health nurse capability to treat post op wound infection</p> <p>Incorrect treatment of patients after detection of infection</p>	<p><b>Reliability</b></p> <p>Reliability (Adams et al., 2009; Ramsaran-Fowdar, 2005)</p>
Topic4_40_51_61_64_9_Care_Consistency	<p>Needs to be more consistency in the advice given and more systematic</p> <p>Getting opposite advice from both which heightened my anxiety</p> <p>More time with midwives doctors to explain thing</p> <p>Connectivity between opinions of GP and midwives measurments did not relate</p> <p>Conflicting advice from some caregivers</p> <p>Not given appropriate advice regarding pumping</p> <p>Mixed advice regarding feeding baby</p> <p>Mixed support for breastfeeding across the midwives</p> <p>Nurse gave conflicting information at a crucial time</p> <p>Each nurse had her own way of doing things</p> <p>Inconsistent care during labour stages</p> <p>Lack of space in the delivery suite</p> <p>Women left in the annex (or labour ward) until very far into labour</p> <p>The annex and the delivery wards need to be expanded to combat overcrowding</p>	<p><b>Reliability</b></p> <p>Reliability (Lin et al., 2004)</p> <p>Empathy (Ramsaran-Fowdar, 2005)</p> <p>CARE CONSISTENCY (author's construct)</p>
Topic42_59_Rushed_Care	<p>Midwives rush to give birth</p> <p>Another appointment ticked of</p> <p>Different opinions from different doctors towards induction process</p>	<p><b>Reliability</b></p> <p>Reliability (Lin et al., 2004; Peprah &amp; Atarah, 2014)</p>

Topics	Dimensions	Theoretical Constructs
	More information about what happens during induction process Option of induction is suggested too quickly	Empathy (Ramsaran-Fowdar, 2005)
Topic45_55_Integrated_GP_Care_Services	No notes are shared between the hospital and GP Continuity of Care	<b>Process (Coordination)</b> CO-ORDINATED CARE (author's construct)
Topic15_16_19_58_6_Ineffective communication	Ineffective communication of pregnancy changes Keep update with the correct information More information regarding details of what happened in theatre after the delivery More Information about physical changes post pregnancy Need active listening by doctors Doctor need to train in listening to patients Questions or concerns were not always addressed Dissatisfactory communication with consultant Any questions about how the procedure went were answered Qquestions that were asking wasn't taken seriously Better and clearer communication between midwives and the patient during labor Communication with staff just before the labour Staff should learn to talk better to the patients and listen to them	<b>Communication</b> Communication (S. Andaleeb, 2008; S. S. Andaleeb, 2000, 2001; Pakdil & Harwood, 2005; Zeithaml et al., 1990) Empathy (Büyüközkan et al., 2011) Communication / interpersonal relationship (Peprah & Atarah, 2014)
Topic41_47_Partner_Participation	The participation of the couples To allow the husband to stay longer with the mother and child	<b>EMOTIONAL/MORAL SUPPORT</b> (author's construct)

## References

- Aborumman, S. A. K., & Aborumman, A. ad H. (2011). Healthcare Service Quality: Comparing Public and Private Hospitals in Jordan. *International Business Management*, 5, 247–254.
- Abuosi, A. A., & Atinga, R. A. (2013). Service quality in healthcare institutions: establishing the gaps for policy action. *International Journal of Health Care Quality Assurance*, 26(5), 481–492. <https://doi.org/10.1108/IJHCQA-12-2011-0077>
- Adams, J. L. T. R., Iii, J. L. T., & Adams, S. R. (2009). *Incorporating patients ' assessments of satisfaction and quality : an integrative model of patients ' evaluations of their care*. 11(4), 272–286.
- Ahmadi, R. (2017). Analysis of Healthcare Services Quality Using Servqual - Fuzzy Method. *International Journal of Economics & Management Sciences*, 06(06). <https://doi.org/10.4172/2162-6359.1000485>
- Al-Damen, R. (2017). Health Care Service Quality and Its Impact on Patient Satisfaction “Case of Al-Bashir Hospital.” *International Journal of Business and Management*, 12(9), 136. <https://doi.org/10.5539/ijbm.v12n9p136>
- Anbori, A., Ghani, S. N., Yadav, H., Daher, A. M., & Su, T. T. (2010). Patient satisfaction and loyalty to the private hospitals in Sana’a, Yemen. *International Journal for Quality in Health Care*, 22(4), 310–315. <https://doi.org/10.1093/intqhc/mzq029>
- Andaleeb, S. (2008). Caring for children: A model of healthcare service quality in Bangladesh. *International Journal for Quality in Health Care*, 20(5), 339–345. <https://doi.org/10.1093/intqhc/mzn024>
- Andaleeb, S. S. (2000). Public and private hospitals in Bangladesh: service quality and predictors of hospital choice. *Health Policy and Planning*, 15(1), 95–102. <https://doi.org/10.1093/heapol/15.1.95>
- Andaleeb, S. S. (2001). Service quality perceptions and patient satisfaction: A study of hospitals in a developing country. *Social Science and Medicine*, 52(9), 1359–1370. [https://doi.org/10.1016/S0277-9536\(00\)00235-5](https://doi.org/10.1016/S0277-9536(00)00235-5)
- Brahmbhatt, D. M., Baser, D. N., & Joshi, P. N. (2011). Adapting the Servqual Scale to Hospital Services: an Empirical Investigation of Patients’ Perceptions of Service Quality. *INternational Journal of Multidisciplinary Research*, 1(8), 27–42.
- Büyüközkan, G., Çifçi, G., & Güleriyüz, S. (2011). Strategic analysis of healthcare service quality using fuzzy AHP methodology. *Expert Systems with Applications*, 38(8), 9407–9424. <https://doi.org/10.1016/j.eswa.2011.01.103>
- Isa, A., Saud, M., & Ismail, M. (2014). Achieving Service Quality Satisfaction: An Eastern Perspective. *Conference on International, October 2015*. [https://www.researchgate.net/profile/Mara\\_Ridhuan/publication/296674969\\_Human\\_rights\\_disclosure\\_before\\_and\\_after\\_the\\_global\\_financial\\_crisis/links/56d7d19608aee1aa5f75d025.pdf#page=442](https://www.researchgate.net/profile/Mara_Ridhuan/publication/296674969_Human_rights_disclosure_before_and_after_the_global_financial_crisis/links/56d7d19608aee1aa5f75d025.pdf#page=442)
- Karami, M., Maleki, M. M., & Dubinsky, A. J. (2016). Cultural values and consumers’ expectations and perceptions of service encounter quality. *International Journal of Pharmaceutical and Healthcare Marketing*, 10(1), 2–26. <https://doi.org/10.1108/IJPHM-09-2014-0051>
- Lam, S. S. K. (1997). SERVQUAL: A tool for measuring patients’ opinions of hospital service quality in Hong Kong. *Total Quality Management*, 8(4), 145–152. <https://doi.org/10.1080/0954412979587>
- Lam, S. S. K., & Woo, K. S. (1997). Measuring service quality: a test-retest reliability

- investigation of SERVQUAL. *Market Research Society. Journal of the Market Research Society*, 39(2), 381–396.
- Lee, D. H. (2017). HEALTHQUAL: a multi-item scale for assessing healthcare service quality. *Service Business*, 11(3), 491–516. <https://doi.org/10.1007/s11628-016-0317-2>
- Lee, D., & Kim, K. K. (2017). Assessing healthcare service quality: a comparative study of patient treatment types. *International Journal of Quality Innovation*, 3(1), 0–15. <https://doi.org/10.1186/s40887-016-0010-5>
- Lin, H. C., Xirasagar, S., & Laditka, J. N. (2004). Patient perceptions of service quality in group versus solo practice clinics. *International Journal for Quality in Health Care*, 16(6), 437–445. <https://doi.org/10.1093/intqhc/mzh072>
- Otalora, M. L., Rosenbaum, M. S., & Orejula, A. R. (2018). Understanding health care service quality in developing Latin America. *Health Marketing Quarterly*, 35(3), 167–185. <https://doi.org/10.1080/07359683.2018.1514733>
- Padma, P., Rajendran, C., & Lokachari, P. S. (2010). Service quality and its impact on customer satisfaction in Indian hospitals: Perspectives of patients and their attendants. *Benchmarking*, 17(6), 807–841. <https://doi.org/10.1108/14635771011089746>
- Padma, P., Rajendran, C., & Sai, L. P. (2009). A conceptual framework of service quality in healthcare: Perspectives of Indian patients and their attendants. *Benchmarking: An International Journal*, 16(2), 157–191. <https://doi.org/10.1108/14635770910948213>
- Pakdil, F., & Harwood, T. N. (2005). Patient satisfaction in a preoperative assessment clinic: An analysis using SERVQUAL dimensions. *Total Quality Management and Business Excellence*, 16(1), 15–30. <https://doi.org/10.1080/1478336042000255622>
- Parasuraman, A., Berry, L. L., & Zeithaml, V. A. (1990). Guidelines for conducting Service quality research. *Marketing Research*, 2(4), 34–44.
- Peprah, A. A., & Atarah, B. A. (2014). Assessing Patient's Satisfaction using SERVQUAL Model: A Case of Sunyani Regional Hospital, Ghana. *International Journal of Business and Social Research*, 4(2), 133–143. <https://doi.org/10.18533/ijbsr.v4i2.404>
- Raajpoot, N. (2004). Reconceptualizing Service Encounter Quality in a Non-Western Context. *Journal of Service Research*, 7(2), 181–201.
- Ramsaran-Fowdar, R. R. (2005). Identifying health care quality attributes. *Journal of Health and Human Services Administration*, 27(4), 428–443.
- Siddiq, A., Baloch, Q. B., & Takrim, K. (2016). Quality of healthcare services in public and private hospitals of Peshawar, Pakistan : a comparative study using servqual. *City University Research Journal*, 06(02), 242–255.
- Webster, T. R., Mantopoulos, J., Jackson, E., Cole-Lewis, H., Kidane, L., Kebede, S., Abebe, Y., Lawson, R., & Bradley, E. H. (2011). A brief questionnaire for assessing patient healthcare experiences in low-income settings. *International Journal for Quality in Health Care*, 23(3), 258–268. <https://doi.org/10.1093/intqhc/mzr019>
- Zeithaml, V. A., Parasuraman, A., & Berry, L. L. (1990). *Delivering quality service: balancing customer perceptions and expectations*. New York : London: Free Press.