Modeling Predictors of Health System Responsiveness among Chronic Care Centers in Tier Three Hospitals in Kenya

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Abstract

This study sought to model predictors of health system responsiveness among diabetic and hypertensive patients in Kenyan primary hospitals. Responsiveness in the health system hinges on service provision and system demands, but there are noted deficiencies in Kenya prompting this study. The study explored how valuations, accountability, access, structural factors, organizational culture, and perceptions of justice impact responsiveness. This cross-sectional survey provided baseline data for an intervention study. From a sampling frame of 853 patients, 323 were sampled using the Fishers et al. formula. Of these, 308 questionnaires were completed: 130 from Gatundu, 98 from Uasin Gishu, and 80 from Kimilili Hospitals. Data was collected through structured questionnaires using a five-point Likert scale, after which scores were summed up and divided into favorable and unfavorable using the demarcation threshold formula. Only 38.3% of respondents reported favorable responsiveness. Three predictors; accountability, structural and organizational culture had majority in the unfavorable, while valuations, access, and justice had majority in the favorable category. Following conditional backward binomial logistic regression, the final model included four significant predictors of responsiveness; namely, structural, accountability, organizational culture, and justice perceptions. Using the Nagelkerke statistic, the model explained 15.7% variation in responsiveness. The model achieved a 79.5% success rate in predicting unfavorable responsiveness and a 46.6% success rate in predicting favorable responsiveness, with an overall correct prediction rate of 66.9%. The probability of experiencing favorable responsiveness given positive experiences in the predictors was 68.5%. In conclusion, responsiveness remains low. Critical predictors identified in this study serve as intervention targets for improving responsiveness. With 15.7% explained variation in responsiveness, there's room for further model enhancement. The study recommends managers to adopt a holistic, patient-centered care approach, and suggests implementation studies to validate the model across diverse contexts and identify additional predictive factors for responsiveness improvement.

Keywords: *Responsiveness, Chronic conditions, Diabetes Mellitus, Hypertension, Primary hospital*

1.0 Introduction

Addressing responsiveness which focuses on non-clinical aspects during client interactions with health systems is crucial for improved health outcomes, especially for patients with chronic conditions who frequently engage with the system. This study focused on responsiveness levels and predictors among diabetic and hypertensive patients. Responsiveness includes respect for human dignity, autonomy, clarity of communication, and confidentiality, along with aspects of customer focus like prompt response, quality amenities, choice, and access to social support networks (Khan et al., 2021).

Diabetes Mellitus, a major global health concern, is characterized by high blood sugar levels due to insulin insensitivity or impaired production. Urbanization and sedentary lifestyles contribute to its increasing prevalence. Currently, about 9.3% of the world's population, or 734 million people, are affected by diabetes. Projections indicate this could rise to 10.4% (822 million) by 2040 (Sifunda et al., 2023). In Kenya, diabetes affects around 3.6% of adults, with estimates suggesting a rise to 4.4% by 2035 if the trend is not halted (Onteri et al., 2023).

Hypertension is a condition characterized by abnormally high blood pressure (BP), typically defined as systolic BP $\geq$140 mmHg and/or diastolic BP $\geq$90 mmHg (Haile et al., 2023). It affects an estimated 1.5 billion people worldwide, and about 22 % Kenyan population, with higher rates observed in individuals with diabetes mellitus.(Charchar et al., 2024).

As the prevalence for chronic conditions increases so is the need for more responsive health systems due to more client interactions and public expectations (Tunsi et al., 2023). The client-provider interface, essential for responsiveness, however, faces challenges including strained or disrespectful interactions (Drossman & Ruddy, 2020). Additional obstacles include physical mishandling, lack of consent and verbal abuse (Kruk et al., 2018). Despite improvement efforts including implementing accountability mechanisms like rights charters to improve responsiveness, clients and providers in Kenya often neglect these measures (Masese et al., 2016). There have been wide variations in responsiveness, where generally wealthy countries report higher responsiveness (Ali et al., 2015;Röttger et al., 2014) than the developing countries (Adesanya et al., 2012; Kapologwe et al., 2020; 2020; Peltzer & Phaswana-Mafuya, 2012).

Factors impacting responsiveness hinge on both demand side and supply side reflecting operational environments, resources, institutional arrangements along with elements such as accountability, client interaction, and feedback loops (Khan et al., 2021). This study framed six variables as predictors of health system responsiveness in chronic care centers being valuations of responsiveness, accountability mechanisms, access factors, structural elements, organizational culture, and perceptions of justice.

To inform intervention levers for improving responsiveness, this study sought to determine the influence of the predictors of responsiveness with a view to generate an efficient predictive model for responsiveness.

Kibiriti, Tenambergen and Mapesa

2.0 Materials and Methods

This cross-sectional survey collected data between September and December 2020. The study sites included primary/tier three hospitals representing urban, peri-urban, and rural counties in Kenya. The urban facility was Gatundu Level Five Hospital in Kiambu County, the peri-urban facility was Uasin Gishu Hospital in Uasin Gishu County, and the rural hospital was Kimilili Hospital in Bungoma County (Macharia et al., 2021).

Sample Size

The confidence level adopted is 95% as is the convention for most social studies. The sampling frame was 853 reflecting clients enrolled in care for diabetes mellitus, hypertension or both. These entailed 430 enrolled in care in Gatundu, 256 from Uasin Gishu and 167 in Kimilili hospitals respectively. The sample size was determined by the formula by Cochrane (Taherdoost, 2017).

$$n=z^2pq/d^2$$

Where;

n= is sample size

z =is the standard normal deviate at the required confidence level

p= is the proportion in the target population estimated to have characteristics being measured

q=1-p

d=the level of statistical significance set, being 5%.

Since no prior study on responsiveness in tier three hospitals in Kenya existed, there was no available estimate of the proportion in the target population. Therefore, 50% (0.5) was used as the value for 'p', following Fisher et al.'s recommendation for maximum variability. The resultant value was then corrected for a finite population within a defined sampling frame, as advised by Taherdoost,(2017)

$$n=1.96^2*0.5*0.5/0.5^2=384.16$$

The sample sizes for the aggregate of the three facilities is as follows

nf=n/ {(1+n)/N} =384/ {1+(384/853)} =266.

An addition of 10% was done to provide for non-retention (Brewster et al., 2020) and a further 10% added to provide for non-response(Fetene et al., 2022)thus total sample size was 323.

Sampling and sampling procedures

Systematic random sampling was used where every other patient was selected in the study (853/323) to obtain individual respondents.

> *"The factors impacting responsiveness hinge on operational environments, resources, institutional arrangements accountability, client interaction and feedback loops"*

Data collection

Data was obtained using a structured questionnaire containing closed questions. Variables were rated on a 5-point Likert scale, with 1 being the worst and 5 being the best.

Validity and Reliability

Validity ensures accurate measurement for correct result interpretation. Construct validity was ensured through literature review and expert input on data collection tools. Random sample selection reduced

Kibiriti, Tenambergen and Mapesa

selection bias (Hartmann-Boyce & Lindson, 2023). Reliability, indicating consistency in conclusions among different researchers, was achieved through uniformity and thorough review of data collection tools. The Cronbach alpha coefficient determined reliability of scales.

Ethical approval

The study received approval from the Research Ethics Committees of Kenya Methodist University (Approval number KeMU/SERC/HSM/4/2020) and Moi University (Approval number 003643). It also obtained a research license (approval number NACOSTI/P/20/5650) from NACOSTI and clearances from hospital managements. Written informed consent was obtained from all participants, ensuring their right to withdraw at any time.

3.0 Results and Discussion

Response rate

Three hundred and eight questionnaires were duly filled out of three hundred and twenty three administered, yielding a response rate of 95.35% which was satisfactory (Miyakoshi et al., 2021).

Descriptive Results

Analysis of Scale Reliability

The dependent variable Responsiveness was scored through indicators of Promptness, Respect, Involvement, Communication. Choice, Confidentiality, Amenities, Social Support and overall Trust of the facilities with care outcomes. There were a total of 31 questions; thus, the expected minimum aggregate score per respondent would be 31, and maximum score would be 155.

Predictor variables valuations was assessed by role awareness, importance of responsiveness, and enforcement influence. Accountability was gauged through utility of service charters, transparency, and equity. Access factors encompassed geographical, sociocultural, financial, and organizational aspects. Structural factors were evaluated by commodities availability, staffing, and environment; while organizational culture indicators included customer focus and team spirit. Justice perceptions were rated on fairness in procedures, treatment of individuals, and costs (Dowhaniuk, 2021; Killett et al., 2016; Lindqvist et al., 2015; Mengstie, 2020).

Valuations and accountability mechanisms each consisted of four questions, with expected score sums ranging between 4 and 20 per respondent. Access, structural, organizational culture, and justice perceptions had 5, 3, 7, and 6 questions respectively, resulting in score sums expected to range between 5 and 25, between 3 and 15, between 7 and 35, and between 6 and 30 respectively. Cronbach's alpha, used to assess internal consistency, and was computed for each scale with the minimum acceptable level set at 0.6. The results are summarized in Table 1.

Descriptive Measures

Descriptive analysis included means, median and standard deviation. Normality of the distributions was assessed by Z Scores for skewness. The standard error for skewedness for all variables was 0. 139. The results are summarized in table 1.

Kibiriti, Tenambergen and Mapesa

Table 1

Descriptive Statistics

Variable	Questions	Min	Max	Median	Mean	% Mean	Standard deviation	Skewedness	Z score skewedness	Cronbach;s Alpha
Valuations	4	4	20	12	12.4	62	3.6	0.048	0.345	0.740
Accountability	4	4	18	9.5	9.7	48.5	3.0	0.318	2.288	0.739
Access	5	7	25	17	16.7	66.8	3.7	0.097	0.698	0.796
Structural	3	3	15	8	8.3	55.3	2.6	0.212	1.525	0.687
Organizational Culture	7	9	35	21	21.5	61.4	5.0	0.194	1.396	0.829
Justice Perceptions	6	10	30	21	21.2	70.6	4.6	0.182	1.309	0.873
Responsiveness	31	59	149	98	98.8	63.7	18.8	0.231	1.662	0.936

Min-Minimum, Max-Maximum

Cronbach's alpha ranged from 0.739 for accountability to 0.936 for responsiveness, demonstrating acceptable reliability levels. All variables' data was normally distributed as no Z scores for skewedness exceeded 3 as guided by Doane & Seward (2016). Mean responsiveness was 63.7%. Justice perceptions had the highest mean score at 70.6%, while accountability had the lowest at 48.5. These findings align with observations from studies in South Africa (Peltzer & Phaswana-Mafuya, 2012), Ethiopia (Negash et al., 2022) and Tanzania (Kapologwe et al., 2020), indicating similar levels of responsiveness. However, these findings show comparatively lower responsiveness than developed countries as found in Spain, Germany and Thailand (Ali et al., 2015; Tille et al., 2019).

Modeling Predictors of Responsiveness
Building on the method by Fetene et al. (2022), which categorized quality and satisfaction as favorable or unfavorable, and considering responsiveness as a quality element in healthcare, all variables were classified as favorable or unfavorable by splitting the sum of the variables per respondent using a demarcation threshold formula: [{(highest rating – lowest rating)/2} + lowest rating]. Favorable outcomes were coded as '1' and unfavorable outcomes as '0'. The results are presented in Table 2.

Table 2
Categorization of Predictors and Responsiveness

Variable	Min	Max	Range	Demarcation Threshold Value	Favorable	Unfavorable
Valuations	4	20	16	12	181(58.8%)	127(41.2%)
Accountability	4	18	14	11	120(39%)	188(61%)
Access	7	25	18	16	184(59.7%)	124(40.3%)
Structural	3	15	12	9	135(43.8%)	173(56.2%)
Organizational Culture	9	35	26	22	142(46.1%)	166(53.9%)
Justice Perceptions	11	30	19	20.5	170(55.2%)	138(44.8%)
Responsiveness Levels	59	149	90	104	118(38.3%)	190(61.7%)

Fewer persons, 118 (38.3%) had favorable responsiveness. These agree with previous findings that most clients were likely to get unfavorable experiences, especially in Kenya and other low income countries (Kruk et al., 2018). This pattern is replicated on three predictors; Accountability, Structural and organizational culture that all had majority ratings in the unfavorable category.

Modelling Steps

A backward conditional binomial logistic regression was conducted to determine the percentage of respondents classified correctly, overall accuracy of prediction, explained variance in responsiveness, and identify critical predictors. The omnibus test was used to assess model fit.

Out of 308 respondents, the majority (190) demonstrated unfavorable responsiveness. The intercept-only model correctly classified 61.7% of outcomes. Model 1, including all predictors, and Model 2, which removed valuations, both correctly classified 81.6% of unfavorable and 39% of favorable outcomes, with an overall correct classification of 65.3%. Model 3, with only four variables after removing valuations and access, correctly classified 79.5% of unfavorable outcomes and 46.6% of favorable outcomes, showing a slight improvement in prediction compared to the previous two models. Results are summarized in Table 3.

Kibiriti, Tenambergen and Mapesa

Table 3

The Regression Models

Model Steps	Variables in the model		Predicted Responsiveness Categories		Percentage Correct
			Unfavourable	Favourable	
Step 0	Responsiveness Categories	Unfavourable	190	0	100%
		Favourable	118	0	0
	Overall Percentage				61.7
Model 1	Valuations	Unfavourable	155	35	81.6
	Accountability	Favourable	72	46	39
	Access				
	Structural				
	Organisational Culture				
	Justice				
	Overall Percentage				65.3
Model 2	Accountability	Unfavourable	155	35	81.6
	Access	Favourable	72	46	39
	Structural				
	Organisational Culture				
	Justice				
	Overall Percentage				65.3
Model 3	Accountability	Unfavourable	151	39	79.5
	Structural	Favourable	63	55	46.6
	Organisational Culture				
	Justice				
	Overall Percentage				66.9

The omnibus test for model fit for every step of modeling is shown in the table 4.

Table 4

Omnibus Test of Models Fit and Model Summary

		Chi-square	Df	Sig.	Nagelkerke R Square
Step 1	Model	39.997	6	.000	.166
Step 2	Model	39.952	5	.000	.165
Step 3	Model	37.795	4	.000	.157

df: degrees of freedom

The omnibus test of model fit for all models was significant, indicating a good fit of the model to the data. To observe changes in models, the initial step '1' model is

Kibiriti, Tenambergen and Mapesa

presented in Table 5 for comparison with the final model in Table 6.

Table 5

Results of step 1 model

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Valuations	.-058	.272	0.045	1	0.832	0.944	0.554	1.609
Access	.398	.269	2.188	1	.139	1.488	.879	2.521
Accountability	.550	.264	4.357	1	.037	1.734	1.034	2.908
Structural	.754	.260	8.420	1	.004	2.160	1.277	3.537
Organisational Culture	.545	.269	4.111	1	.043	1.724	1.018	2.918
Justice	.502	.273	3.372	1	.066	1.652	.967	2.822
Constant	-1.815	.293	38.405	1	.000	.193		

B-Beta (β) weights. S.E-Standard error, d.f-Degrees of freedom. Exp (B)-The odds, CI Confidence interval

Valuations (P=0.832) and access factors (P=0.139) did not significantly predict responsiveness (P>0.05), while accountability (P=0.037), structural factors (P=0.04), organizational culture (P=0.043), and justice perceptions (P=0.066) had barely significant effects.

Thus, the final model included the four, accountability, structural, organizational culture and justice perceptions all showing significant effects (P<0.05) on responsiveness.

Table 6

The Final model

	B	S.E.	Wald	Df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Accountability	.523	.259	4.085	1	.043	1.687	1.016	2.802
Structural	.770	.257	8.976	1	.003	2.160	1.305	3.574
Organisational Culture	.605	.263	5.275	1	.022	1.831	1.093	3.069
Justice	.530	.268	3.916	1	.048	1.698	1.005	2.870
Constant	-1.647	.249	43.708	1	.000	.193		

Kibiriti, Tenambergen and Mapesa

B-Beta (β) weights. S.E-Standard error, d.f-Degrees of freedom. Exp (B)-The odds, CI Confidence interval

The odds for all the predictors are above 1; showing that with favorable experiences on the predictors, the likelihood of having favorable responsiveness too increases. The odds of having favorable experiences matched for favorable responsiveness were highest for structural factors followed by organizational culture then justice perceptions and lastly accountability mechanisms.

The logit for the odds of having favorable responsiveness is computed as follows:

Y (Logit) $= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_{4=-}$ 1.647+ (1*0.523) + (1*0.770) + (1*0.605) + (1*0.530) =0.781

Exponentiating this logit of 0.781 corresponds to the odds of 2.1836. Thus, the probability, Pr (favourable) that one will experience favourable responsiveness conditional on favourable experiences among the predictors is computed as follows

Pr (favourable)= {odds/1+odds) =2.1836/1+2.1836.
=2.1836/2.1836*100=68.5%.

This model had pseudo r-square of 0.157 using the Nagerlkerke statistic, and this implies that the fit of the model to the data possibly could be improved with the addition of further predictors. The model was 66.9 % successful in overall prediction, 79.5% successful for predicting unfavourable responsiveness, and 46.6% successful for predicting favourable responsiveness.

Access factors and valuations had no significant impact on health system responsiveness. Client perceptions of their agency in receiving responsive care are pivotal, influencing demand (Gilad & Assouline, 2024). These findings contradict other studies that identified barriers such as income levels (Corscadden et al., 2018; Rahaman et al., 2024). Access factors might not have been significant predictors due to minimal barriers or because the study focused on the interaction interface on clients already in the hospital, thus their focus could mainly be on the care they receive.

That structural factors were significant predictors is consistent with previous findings which found for instance that higher budget on health is positively correlated with responsiveness (Murante et al., 2017). The findings are similar to those of Israel (2023) which noted that commodity supply impacts responsiveness.

Regarding accountability, the study's findings align with research in Nigeria, where accountability dampened responsiveness due to constraints like corruption and political interference (Uzochukwu et al., 2018). Similarly, in Kenya, clients praised accountability mechanisms like service charters, but paid them little attention (Masese et al., 2016).

This study found organizational culture significantly predicted responsiveness. Top performing organizations share such features as a positive organizational culture that embraces change which accelerate quality of care; thereby, effectively affecting responsiveness of health systems (Hendsun & Achmadi, 2022). The findings also agree with another study that noted

Kibiriti, Tenambergen and Mapesa

constricting environments limited the voice of providers in reporting medical errors (Levine et al., 2020), effectively denting responsiveness.

The finding that justice is a significant predictor are consistent with research findings that customer perceptions of justice influence organizational engagement and trust (Choi & Lotz, 2018). Justice is perceived as an act that is understood to be morally correct based on ethics, law, or social beliefs (Pekurinen et al., 2017). Distributive justice refers to the perception of fairness regarding the outcomes of decision-making and the allocation of resources, whereas procedural justice refers to procedures, which are processes leading to outcomes related to specific types of normatively accepted principles. It reflects perceptions in social elements.

4.0 Conclusions

Responsiveness is generally low. The odds of experiencing unresponsiveness are higher than experiencing responsive health care. Four variables, structural, accountability organizational culture, and justice perceptions were significant predictors of responsiveness. However, the explained variation of 15.7% in responsiveness implies the model could be improved further.

5.0 Recommendations

The study recommends holistic patient centered approach to care and implementation studies to test the validity of this model in different contexts and identify other factors that may be useful in predicting responsiveness more effectively.

Study contribution

The study has identified critical levers; the significant predictors for intervention that would form a basis for quality improvement efforts towards improving responsive health systems.

References

Adesanya, T., Gbolahan, O., Ghannam, O., Miraldo, M., Patel, B., Verma, R., & Wong, H. (2012). Exploring the Responsiveness of Public and Private Hospitals in Lagos, Nigeria. *Journal of Public Health Research*, *1*(1), jphr.2012.e2. https://doi.org/10.4081/jphr.2012.e2

Ali, F. M. H., Nikoloski, Z., & Reka, H. (2015). Satisfaction and responsiveness with health-care services in Qatar—Evidence from a survey. *Health Policy*, *119*(11), 1499–1505. https://doi.org/10.1016/j.healthpol.2015.09.012

Brewster, S., Bartholomew, J., Holt, R. I. G., & Price, H. (2020). Non-attendance at diabetes outpatient appointments: A systematic review. *Diabetic Medicine*, *37*(9), 1427–1442. https://doi.org/10.1111/dme.14241

Charchar, F. J., Prestes, P. R., Mills, C., Ching, S. M., Neupane, D., Marques, F. Z., Sharman, J. E., Vogt, L., Burrell, L. M., & Korostovtseva, L. (2024). Lifestyle management of hypertension: International Society of Hypertension position paper endorsed by the World

Hypertension League and European Society of Hypertension. *Journal of Hypertension*, *42*(1), 23–49. https://doi.org/DOI: 10.1097/HJH.0000000000003563

Choi, L., & Lotz, S. L. (2018). Exploring antecedents of customer citizenship behaviors in services. *The Service Industries Journal*, *38*(9–10), 607–628.

Corscadden, L., Levesque, J. F., Lewis, V., Strumpf, E., Breton, M., & Russell, G. (2018). Factors associated with multiple barriers to access to primary care: An international analysis. *International Journal for Equity in Health*, *17*(1), 28. https://doi.org/10.1186/s12939-018-0740-1

Doane, D. P., & Seward, L. W. (2016). Applied statistics in business and economics (Fifth edition). McGraw-Hill Education. file:///C:/Users/User/Desktop/RESEARCH%20AND%20STATS/Applied%20Statistics%20in%20Business%20and%20Economics%20(David%20Doane,%20Lori%20Seward)%20(z-lib.org).pdf

Dowhaniuk, N. (2021). Exploring country-wide equitable government health care facility access in Uganda. *International Journal for Equity in Health*, *20*(1), 38. https://doi.org/10.1186/s12939-020-01371-5

Drossman, D. A., & Ruddy, J. (2020). Improving patient-provider relationships to improve health care. *Clinical Gastroenterology and Hepatology*, *18*(7), 1417–1426. https://doi.org/10.1016/j.cgh.2019.12.007

Fetene, M. B., Bayable, S. D., Wendimu, E. S., Belehu, K. D., Almaw, A. A., Dula, P. K., & Bejiga, B. Z. (2022). Perioperative patient satisfaction and its predictors following surgery and anesthesia services in North Shewa, Ethiopia. A multicenter prospective cross-sectional study. *Annals of Medicine and Surgery*, *76*, 103478. https://doi.org/10.1016/j.amsu.2022.103478

Gilad, S., & Assouline, M. (2024). Citizens' choice to voice in response to administrative burdens. *International Public Management Journal*, *27*(1), 38–59. https://doi.org/10.1080/10967494.2022.2072988

Haile, T. G., Mariye, T., Tadesse, D. B., Gebremeskel, G. G., Asefa, G. G., & Getachew, T. (2023). Prevalence of hypertension among type 2 diabetes mellitus patients in Ethiopia: A systematic review and meta-analysis. *International Health*, *15*(3), 235–241. https://doi.org/10.1093/inthealth/ihac060

Hartmann-Boyce, J., & Lindson, N. (2023). Assessing and minimizing risk of bias in randomized controlled trials of tobacco cessation interventions: Guidance from the Cochrane Tobacco Addiction Group. *Addiction*, *118*(9), 1811–1816. https://doi.org/10.1111/add.16220

Hendsun, H., & Achmadi, H. (2022). Antecedent Hospital Environment, Communication and Responsiveness in Hospitals during the Covid-19 Pandemic According to Patient Perceptions of

11

Willingness to Recommend. *Budapest International Research and Critics Institute-Journal (BIRCI-Journal)*, *5*(1). https://doi.org/10.33258/birci.v5i1.4384

Israel, B. (2023). Mediating effect of integrated health commodities procurement system on the relationship between responsiveness and health service delivery. *International Journal of Health Governance*, *28*(3), 284–298. https://doi.org/10.1108/IJHG-03-2023-0028

Kapologwe, N. A., Kibusi, S. M., Borghi, J., Gwajima, D. O., & Kalolo, A. (2020). Assessing health system responsiveness in primary health care facilities in Tanzania. *BMC Health Services Research*, *20*, 1–10. https://doi.org/10.1111/hex.12081

Khan, G., Kagwanja, N., Whyle, E., Gilson, L., Molyneux, S., Schaay, N., Tsofa, B., Barasa, E., & Olivier, J. (2021). Health system responsiveness: A systematic evidence mapping review of the global literature. *International Journal for Equity in Health*, *20*(1), 112. https://doi.org/10.1186/s12939-021-01447-w

Killett, A., Burns, D., Kelly, F., Brooker, D., Bowes, A., La Fontaine, J., Latham, I., Wilson, M., & O'NEILL, M. (2016). Digging deep: How organisational culture affects care home

Kruk, M. E., Gage, A. D., Arsenault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., Adeyi, O., Barker, P., Daelmans, B., & Doubova, S. V. (2018). High-quality health systems in the Sustainable Development Goals era: Time for a revolution. *The Lancet Global Health*, *6*(11), e1196–e1252. https://doi.org/10.1016/S2214-109X(18)30386-3

Levine, K. J., Carmody, M., & Silk, K. J. (2020). The influence of organizational culture, climate and commitment on speaking up about medical errors. *Journal of Nursing Management*, *28*(1), 130–138. https://doi.org/10.1111/jonm.12906

Lindqvist, R., Smeds Alenius, L., Griffiths, P., Runesdotter, S., & Tishelman, C. (2015). Structural characteristics of hospitals and nurse-reported care quality, work environment, burnout and leaving intentions. *Journal of Nursing Management*, *23*(2), 263–274. https://doi.org/10.1111/jonm.12123

Lusambili, A. M., Naanyu, V., Wade, T. J., Mossman, L., Mantel, M., Pell, R., Ngetich, A., Mulama, K., Nyaga, L., Obure, J., & Temmerman, M. (2020). Deliver on Your Own: Disrespectful Maternity Care in rural Kenya. *PLOS ONE*, *15*(1), e0214836. https://doi.org/10.1371/journal.pone.0214836

Macharia, P. M., Mumo, E., & Okiro, E. A. (2021). Modelling geographical accessibility to urban centres in Kenya in 2019. *PLoS One*, *16*(5), e0251624. https://doi.org/10.1371/journal.pone.0251624

Masese, C. O., Tenambergen, W. M., & Muiruri, L. (2016). *Utilization of Service Charters in Public Hospitals in Kenya: A Case of*

Thika Level 5 Hospital, Kiambu County.
https://www.ijsrp.org/research-paper-0616/ijsrp-p5434.pdf

Mengstie, M. M. (2020). Perceived organizational justice and turnover intention among hospital healthcare workers. *BMC Psychology*, *8*(1), 19. https://doi.org/10.1186/s40359-020-0387-8

Miyakoshi, N., Suda, K., Kudo, D., Sakai, H., Nakagawa, Y., Mikami, Y., Suzuki, S., Tokioka, T., Tokuhiro, A., & Takei, H. (2021). A nationwide survey on the incidence and characteristics of traumatic spinal cord injury in Japan in 2018. *Spinal Cord*, *59*(6), 626–634. https://doi.org/10.1038/s41393-020-00533-0

Murante, A. M., Seghieri, C., Vainieri, M., & Schäfer, W. L. (2017). Patient-perceived responsiveness of primary care systems across Europe and the relationship with the health expenditure and remuneration systems of primary care doctors. *Social Science & Medicine*, *186*, 139–147. https://doi.org/10.1016/j.socscimed.2017.06.005

Negash, W. D., Atnafu, A., Asmamaw, D. B., & Tsehay, C. T. (2022). Does health system responsiveness differ between insured and uninsured outpatients in primary health care facilities in Asagirt District, Ethiopia? A Cross-Sectional Study. *Advances in Public Health*, *2022*. https://doi.org/10.1155/2022/3857873

Onteri, S. N., Kariuki, J., Mathu, D., Wangui, A. M., Magige, L., Mutai, J., Chuchu, V., Karanja, S., Ahmed, I., & Mokua, S. (2023). Diabetes health care specific services readiness and availability in Kenya: Implications for Universal Health Coverage. *PLOS Global Public Health*, *3*(9), e0002292. https://doi.org/10.1371/journal.pgph.0002292

Pekurinen, V. M., Välimäki, M., Virtanen, M., Salo, P., Kivimäki, M., & Vahtera, J. (2017). Organizational justice and collaboration among nurses as correlates of violent assaults by patients in psychiatric care. *Psychiatric Services*, *68*(5), 490–496. https://doi.org/10.1176/appi.ps.201600171

Peltzer, K., & Phaswana-Mafuya, N. (2012). Patient experiences and health system responsiveness among older adults in South Africa. *Global Health Action*, *5*(1), 18545. https://doi.org/10.3402/gha.v5i0.18545

Rahaman, M., Das, P., Chouhan, P., Roy, A., & Saha, J. (2024). Determinants of accessing healthcare services for outpatient care: A study on older adults in India. *International Journal of Healthcare Management*, *17*(1), 85–95. https://doi.org/10.1080/20479700.2022.2157072

Röttger, J., Blümel, M., Fuchs, S., & Busse, R. (2014). Assessing the responsiveness of chronic disease care-is the World Health

13

Organization's concept of health system responsiveness applicable? *Social Science & Medicine*, *113*, 87–94. https://doi.org/10.1016/j.socscimed.2014.05.009

Sifunda, S., Mbewu, A. D., Mabaso, M., Manyaapelo, T., Sewpaul, R., Morgan, J. W., Harriman, N. W., Williams, D. R., & Reddy, S. P. (2023). Prevalence and psychosocial correlates of diabetes mellitus in South Africa: Results from the South African National Health and Nutrition Examination Survey (SANHANES-1). *International Journal of Environmental Research and Public Health*, *20*(10), 5798. https://doi.org/10.3390/ijerph20105798

Taherdoost, H. (2017). Determining sample size; how to calculate survey sample size. *International Journal of Economics and Management Systems*, *2*. http://www.hamta.org

Tille, F., Röttger, J., Gibis, B., Busse, R., Kuhlmey, A., & Schnitzer, S. (2019). Patients' perceptions of health system responsiveness in ambulatory care in Germany. *Patient Education and Counseling*, *102*(1), 162–171. https://doi.org/10.1016/j.pec.2018.08.020

Tunsi, A., Alhelal, R., Mujalled, R., Alhadrami, E., Alsulami, R., Alhofaian, A., Alaamri, M., & Babkair, L. (2023). Chronic Illness Patients' Perceptions of Quality of Care During Hospitalization: A Qualitative Study. *SAGE Open Nursing*, *9*, 237796082211507. https://doi.org/10.1177/23779608221150706

Uzochukwu, B., Onwujekwe, E., Mbachu, C., Okeke, C., Molyneux, S., & Gilson, L. (2018). Accountability mechanisms for implementing a health financing option: The case of the basic health care provision fund (BHCPF) in Nigeria. *International Journal for Equity in Health*, *17*(1), 100. https://doi.org/10.1186/s12939-018-0807-z

Kibiriti, Tenambergen and Mapesa