



DO JUSTICE PERCEPTIONS MODERATE RESPONSIVENESS VALUATIONS' EFFECT ON HEALTH SYSTEM RESPONSIVENESS? A CROSS-SECTIONAL SURVEY IN CHRONIC CARE CENTERS, TIER THREE HOSPITALS, KENYA

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ABSTRACT

This study determined the moderation effect of justice perceptions on the association between responsiveness valuations and health system responsiveness within diabetic and hypertensive clinics in tier three hospitals in Kenya. Responsiveness, defined as meeting non-health improving expectations, is fundamental to a well-functioning health system. The study employed a cross-sectional descriptive survey conducted at Kimilili, Uasin Gishu and Gatundu hospitals among 308 respondents. Responsiveness domains included promptness, respect, communication, involvement, confidentiality, choice, cleanliness, social support access, and overall trust. Responsiveness valuations were rated in regard to client's awareness of their rights, obligations, legitimacy of expectations and client voice. Justice perceptions were rated on the indicators of non-discrimination, fairness in costs, equity, protecting the vulnerable, the minority communities, and according equal opportunity to all. Data on all variables 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. The predictors valuations, and justice perceptions had majority in the favorable category. Justice perceptions were more positively rated compared to valuations. Bivariate analysis using binomial logistic regression showed significant main effects of justice perceptions ($p=0.001$), while the main effects of responsiveness valuations had no significant influence on responsiveness. The interaction effects of justice perceptions and responsiveness valuations had significant effect on health systems responsiveness. Therefore, we conclude favorable responsiveness was less likely than unfavorable outcomes. Justice perceptions significantly moderate the relationship between responsiveness valuations and health system responsiveness. Health policies should ensure fairness, equity, and transparency. Patient care must reflect justice perceptions and include real-time feedback to build trust and improve outcomes. Practitioners need training in client-centeredness and fairness. Ongoing audits and surveys will enhance health system responsiveness.

KEYWORDS: Health System Responsiveness, moderation effects, Justice perceptions, responsiveness valuations, chronic conditions, Diabetes Mellitus, Hypertension, Kenya

1.0 INTRODUCTION

This study examined health system responsiveness, a key healthcare goal (Ibeneme et al., 2020), which involves meeting legitimate non-health-improving expectations of a people as they interact with the health system (Achstetter et al., 2022). As postulated originally by the World Health Organization, responsiveness includes respect for persons domains such as dignity, autonomy, communication, and confidentiality, and client orientation domains such as promptness, quality amenities, choice, and social support (Adhikari et al., 2024). Further elements suggested for addition include effective care (Forouzan et al., 2016), trust, and coordination (Röttger et al., 2014). Responsiveness is influenced by provider factors such as organizational culture, resources, hospital type, and working conditions (Adesanya et al., 2012; Mirzoev & Kane, 2017; Topp & Chipukuma, 2016). This study focuses on

outpatient diabetes and hypertension clinics in tier three/primary hospitals in Kenya.

Diabetes mellitus, affecting 10.5% of adults globally, is projected to rise to 783 million cases by 2045 due to urbanization and sedentary lifestyles (Kumar et al., 2024). In Kenya, prevalence estimates range from 2.4% to 4.2%, with higher rates in urban areas and wealthier populations (Kiarie et al., 2023; Mohamed et al., 2018; Otieno et al., 2023). Hypertension, affecting 22% of adults worldwide and 27% in Africa, shares risk factors with diabetes, necessitating integrated care (Mogaka et al., 2022; Pengpid & Peltzer, 2020).

The Kenyan government has introduced patient rights charters, improved information systems, and complaint procedures to enhance client engagement (Kagwanja, 2023; Njuguna, 2020). However, limited adherence by clients and providers undermines accountability and responsiveness (Kagwanja, 2023; Khan et al., 2021; Lusambili et al., 2020). This study



particularly examines how justice perceptions moderate the relationship between responsiveness valuations and health system responsiveness.

The two-factor model of organizational justice, widely accepted among researchers, includes distributive and procedural justice (Sweeney & McFarlin, 1993). Distributive justice relates to fairness in decision outcomes and resource allocation, while procedural justice focuses on the fairness of the processes leading to those outcomes. When processes are consistent, unbiased, and ethical, perceptions of procedural justice improve. Rooted in social exchange theory, these perceptions influence interactions between patients and healthcare providers, affecting trust in the system and access to care (Choi & Lotz, 2018).

Justice perceptions; covering distributive, procedural, and interactional fairness can shape how patients evaluate their healthcare experiences, influencing responsiveness assessments (Semyonov-Tal, 2024). Understanding this moderating role is essential for improving responsiveness, strengthening trust, and promoting equitable healthcare delivery. One survey by The World Health Organization found that 5.8% of respondents reported discrimination in healthcare based on socioeconomic and demographic factors, highlighting the role of justice perceptions in mediating health system responsiveness (Valentine et al., 2000).

Responsiveness valuations reflect how individuals perceive the importance of responsiveness in healthcare and its impact on their overall experience (Darby et al., 2003). Unlike clinical assessments, which focus on treatment outcomes, responsiveness evaluations consider patient-reported experiences with the healthcare system. These valuations assume that specific aspects such as dignity, confidentiality, and prompt attention hold significance because they contribute to patient welfare and influence healthcare access, adherence, and outcomes. Additionally, valuations extend beyond importance to include perceptions of legitimacy, patients' ability to influence the healthcare system, and their role in achieving or demanding responsiveness. Assertive patients claim and are more likely to achieve most influence though often times patients are more inclined to oppose actions than

propose courses of action (Lian et al., 2022). Engagement in healthcare decisions, particularly for chronic disease management, is crucial, as poor communication among providers can lead to compromised safety and quality of care. Patients who actively participate in their care report higher satisfaction and better well-being, highlighting the importance of patient engagement and collaborative decision-making (Pieterse & Finset, 2019).

2.0 MATERIALS AND METHODS

This descriptive cross-sectional study aimed to assess the moderation effect of justice perceptions on the relationship between responsiveness valuations and health system responsiveness among patients with diabetes mellitus and hypertension. Data were collected from September to December 2020 from three primary hospitals: Gatundu in Kiambu County (urban), Uasin Gishu in Uasin Gishu County (peri-urban), and Kimilili in Bungoma County (rural) (Macharia et al., 2021).

Sample Size

The sampling frame was 853 patients enrolled in care for diabetes mellitus, hypertension or both. Sample size was determined using the Cochran formula (Taherdoost, 2017);

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

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, 50% was chosen for maximum variability.

q = 1 - p

d = the level of statistical significance set, being 5%, confidence level of 95% as commonly applied in social surveys.

$$n = 1.96^2 * 0.5 * 0.5 / 0.05^2 = 384.16$$

The sample sizes for the finite population

$$n_f = n / \{ (1+n)/N \} = 384 / \{ 1 + (384/853) \} = 266$$

This was a baseline survey for a follow up study, thus to provide for non-retention, 10% was added and a further 10% added for non-response as suggested by Fetene et al., (2022) making the total sample size to 323. The results are summarized in table 1

Table 1

Table Showing Sample Size Distributions

Hospital	Population	Calculated New sample size	Adjusted sample size	Duly filled
Kimilili	167	52	81	80
Uasin Gishu	256	80	108	98
Gatundu	430	134	134	130
Total	853	266	323	308

Sampling and sampling procedures

Systematic random sampling was used where every other patient was selected in the study (853/323) to obtain individual respondents provided was an adult enrolled for care for diabetes, hypertension or both upon consent.

Data Collection

Data was collected via a structured questionnaire using a 5-point Likert scale (1 being worst, 5 being best). Responsiveness was assessed for the indicators Promptness, Respect, Involvement, Communication, Choice, Confidentiality, Amenities, Social Support, and Trust in care processes and outcomes. Responsiveness valuations were rated in regard to



client’s awareness of their rights, their obligations, and their regard for the legitimacy of expectations and how they perceived their power to demand responsive care. Justice perceptions were rated on the indicators of perceptions of non-discrimination, fairness in costs, equity, protecting the vulnerable, the minority communities, and according equal opportunity to all.

Validity and Reliability

Validity ensures the accuracy of construct measurement. Data collection tools underwent thorough review, pretesting, and revisions to enhance validity. Randomizing the sample reduced selection bias. Reliability indicates measurement tool consistency (Amirrudin et al., 2021; Coleman, 2022; Noble & Smith, 2025). Tools were uniform, reviewed with the research team for completeness, and Cronbach’s coefficient alpha was estimated to assess reliability.

Ethical approval

Approval was obtained from the Research Ethics Committees of Kenya Methodist University (Approval No: KeMU/SERC/HSM/4/2020) and Moi University (Approval No: 0003643). A research license was obtained from NACOSTI (License No: NACOSTI/P/20/5650). Permissions were obtained from hospital managements teams while written informed consent was obtained from all participants, who were informed of their right to withdraw at any time.

3.0 RESULTS AND DISCUSSION

A total of 308 questionnaires were duly filled yielding a response rate of 95.35% which was satisfactory as guided by Sileyew, (2019) and Taherdoost & Madanchian,(2025)

Descriptive Analysis for Responsiveness Levels, Responsiveness Valuations and Justice Perceptions

Responsiveness was measured using 31 questions covering domains of Promptness, Respect, Involvement, Communication, Choice, Confidentiality, Amenities, Social Support, and Trust in care outcomes with Scores expected to range from 31 to 155. Valuations included four questions, with expected scores between 4 and 20, while Justice Perceptions had six questions, scores expected to range from 6 to 30. Scale reliability, assessed using Cronbach's alpha coefficient was 0.936 for responsiveness, 0.873 for justice perceptions and 0.740 for responsiveness valuations all indicating sufficient internal consistency as guided by Taber, (2018).

Responsiveness scores ranged from 59 to 149, with a mean of 98.8 (63.7%). Using the demarcation threshold formula by Fetene et al. (2022) – [(highest rating – lowest rating)/2] + lowest rating – responsiveness was categorized as favorable or unfavorable. Scores equal to or above the threshold (104) were considered favorable. Only 118 (38.3%) had favorable responsiveness.

Table 2
Summary Statistics for Responsiveness levels/Descriptions

<i>Statistics</i>	
Mean	98.80(63.7%)
Median	98.00
Mode	106
Std. Deviation	18.799
Range	90

This results are close to observations in south Africa that found mean responsiveness level was 69% for outpatient (Peltzer & Phaswana-Mafuya, 2012), in an Ethiopian study that found mean responsiveness at about 62% (Negash et al., 2022) and in another in Tanzania that noted responsiveness to be 69% (Kapologwe et al., 2020). This results reveal a poor picture compared to studies in developed countries that noted overall good responsiveness for instance in Spain, where 77% of clients rated responsiveness as good (Coronado-Vázquez et al. (2022),

in Qatar a study noted high levels of responsiveness, 82% (Ali et al., 2015) and in Thailand where 80% of women rated responsiveness domains as good (Liabsuetrakul et al., 2012).

For valuations, the scores ranged between 4 and 20 with a demarcation threshold value of 12 while for justice perceptions, the scores ranged between 11 and 19 with a demarcation threshold value of 20.5. The results are summarized in table 3.

Table 3
Descriptive Results for Responsiveness Valuations

<i>Indicator</i>	<i>M</i>	<i>SD</i>
Awareness of client rights	3.00	1.158
Awareness of client Obligations	3.16	1.163
Legitimacy of expectations	3.54	1.222
Client Power	2.66	1.267

M mean SD Standard Deviation



Only legitimacy of expectations was well rated with mean above 3.4. Thus, responsiveness valuations were generally negatively rated. The importance of addressing client expectations and obligations is emphasized by their consistently high ratings. However, there are potential areas of concern related to client voice, awareness of rights and obligations

These findings contrast the expectations and thus has potential to undermine health systems responsiveness. Client perceptions

of their agency in receiving responsive care are crucial, shaping service demand(Gilad & and Assouline, 2024).It portends a policy implication to establish measures that align expectations with actual outcomes in order to enhance the overall responsiveness of health systems.

The summary statistics for justice perceptions indicators are reflected in table 4

Table 4
Summary Statistics for Justice Perceptions

Indicator	M	SD
Non-discrimination	3.65	0.983
Fairness of costs	3.47	1.006
Equity	3.43	1.011
Protecting the vulnerable	3.51	0.987
Protecting the minorities	3.57	0.971
Equal Opportunity	3.56	0.931

M: Mean SD: Standard Deviation

Justice perceptions were more positively rated with all indicators having means scores above 3.4. These findings underscore the critical role of justice perceptions in shaping equitable healthcare access and responsiveness as enshrined in the Kenyan constitution. Procedural justice is undermined when certain patients receive preferential treatment or faster services due to provider biases or affordability constraints.

That justice perceptions are more positively rated is an opportunity to leverage on to promote responsiveness. This appears to reverse the negative trend for instance where a study in Kenya revealed that socially connected individuals, those with relatives in healthcare, or those receiving more provider

visits had better access, health literacy, and outcomes, indicating nepotism and systemic unfairness in healthcare delivery(Gatua, 2024).

Distribution of experiences as either favorable or unfavorable following the demarcation threshold

Following the demarcation threshold formula, the respondents were divided into either having favorable or unfavorable experience on each of the variables. The results are reflected in table 5. Majority had favorable perceptions on both justice perceptions and valuations while the outcome variable responsiveness had majority in the unfavorable category.

Table 5
Categorization Of Responsiveness, Responsiveness Valuations and Justice Perceptions

Variable	Min	Max	Range	Demarcation Threshold Value	Favourable	Unfavourable
Valuations	4	20	16	12	181(58.8%)	127(41.2%)
Justice Perceptions	11	30	19	20.5	170(55.2%)	138(44.8%)
Responsiveness Descriptions	59	149	90	104	118(38.3%)	190(61.7%)

Min: Minimum Max: Maximum

Main Effects and Interaction Effects of Responsiveness Valuations and Justice Perceptions on Health Systems Responsiveness: A Bivariate Analysis

Having dichotomized the data into binary variables, bivariate analysis was done using binary logistic regression. The bivariate modelling of the predictors of responsiveness proceeded in an iterative way first assessing the main effects to ascertain the impact of each independent variable on the dependent variable. This was followed by analyzing the effects of the interaction between justice

perceptions and valuations on the dependent variable responsiveness.

The results show the main effects of justice perceptions (p=0.001) significantly influenced responsiveness, while valuations (p=0.069) were not significantly associated with responsiveness. The interaction effects of justice perceptions and valuations (p=0.001) significantly influenced responsiveness. The results are summarized in table 6



Table 6

Bivariate Analysis Of association between valuations, justice perceptions and Responsiveness

Variable	B	SE	Odds Ratio	P value	R ²
Valuations					
Unfavorable(ref)			1.000		
Favourable	0.440	0.242	1.553	0.069	0.015
Justice perceptions					
Unfavorable (Ref)			1.000		
Favourable	0.850	0.245	2.339	0.001	0.054
Interaction of justice perceptions and valuations					
Unfavorable (Ref)			1.000		
Favourable	0.847	0.243	2.333	0.001	0.053

OR: Odds ratio CI: Confidence interval

That clients' valuations were generally negatively rated is a cause for concern. Clients' perceptions of legitimacy of their demand for responsive care perceptions of their agency in receiving responsive care are crucial, shaping demand (Gilad & Assouline, 2024). Research by Reed et al., (2025) found that subjective evaluations of responsiveness often fail to translate into system-wide improvements unless supported by strong policy interventions. This probably explains why responsiveness valuations did not show a direct significant association with responsiveness in the present study.

Studies indicate variability in how responsiveness is valued across different populations. In Iran, over 90% of respondents rated all responsiveness domains as important, with dignity (97.5%) and quality of basic amenities (98%) ranking highest, while autonomy was valued comparatively less (Rashidian & Russell, 2011). Similarly, a European study found that 51% of respondents preferred joint decision-making in treatment, and most valued the ability to choose their medical providers (Coulter & Jenkinson, 2005). In South Africa, key responsiveness domains included basic amenities, confidentiality, and dignity (Peltzer & Phaswana-Mafuya, 2012). In Kenya, interventions focusing on value clarification, emotional support, and provider-patient education have improved responsiveness (Warren et al., 2023). Vulnerable populations, including minority groups and those from lower socioeconomic backgrounds, often have lower expectations for being treated with dignity and are less likely to challenge violations of responsiveness (Ratcliffe et al., 2020). These findings underscore the need for healthcare systems to actively empower patients and improve responsiveness to enhance satisfaction and health outcomes.

Justice is perceived as an act deemed morally correct based on ethics, law, or social beliefs. Distributive justice pertains to the perceived fairness of decision-making outcomes and resource allocation, while procedural justice focuses on the fairness of the processes leading to these outcomes, guided by normatively accepted principles. It also reflects social perceptions. These findings align with research indicating that customer

perceptions of justice influence organizational engagement and trust (Choi & Lotz, 2018).

According to Lee et al., (2024), justice perceptions; encompassing distributive and procedural justice play a fundamental role in patient trust and system efficiency. Similar studies suggest that patients who perceive fairness in healthcare resource allocation and procedural transparency exhibit higher trust levels and satisfaction ((Ferreira et al., 2023).

The interaction effect found in this study suggests that justice perceptions moderate the effect responsiveness valuations on responsiveness. This aligns with other works which highlight that individual with higher justice perceptions and positive responsiveness valuations are more likely to report higher system responsiveness (Adedinsewo et al., 2023; Khatri et al., 2023). These interactive dynamic underscores the complexity of health system assessments, requiring multifaceted policy and practice interventions. Policies ensuring fair distribution of healthcare resources can enhance public perceptions of justice, consequently improving responsiveness.

4.0 CONCLUSION

Unresponsive care is more likely than responsive care. Justice perceptions not only influence health systems as independent predictors but significantly moderate the effect of responsiveness valuations on health systems responsiveness in chronic care centres.

5.0 RECOMMENDATIONS

Implementing transparent processes in policy development and healthcare priority setting by health system managers can enhance procedural justice and build trust in health systems. Strengthening patient feedback mechanisms through surveys and participatory governance by both practitioners and researchers allows integration of responsiveness into system design. Additionally, legal safeguards against discrimination in healthcare access are essential to fostering a more just and equitable system. These measures collectively contribute to a fairer healthcare environment where patients feel heard and valued.



For managers and trainers, training healthcare workers on equity and justice principles can improve responsive care, while transparent communication about healthcare decisions enhances trust and perceived fairness. Culturally sensitive and context-specific interventions can help address disparities in health systems responsiveness. Moreover, linking health professionals' performance evaluations with responsiveness measures encourages a stronger focus on patient care and satisfaction, ultimately leading to a more responsive healthcare system.

Study Contribution

This study contributes to the discourse on health systems responsiveness by uniquely highlighting the influence of justice perceptions not just as an independent variable but one moderating the influence of valuations on health systems responsiveness among clients with chronic illnesses in primary hospitals in Kenya. This portends need to focus on how the systems is being perceived from the client's perspective.

Conflict of Interest

The authors state that they have no conflict of interest.

Author contribution

The study conceptualization and design were conducted by all authors. Kibiriti Hillary performed data collection, analysis, interpretation, manuscript drafting, and revision. Study supervision and manuscript review were carried out by Wanja Tenambergen and Mapesa Job. All authors have reviewed and approved the final manuscript.

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