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HEALTHCARE WORKFORCE SUSTAINABILITY AND PATIENT-CENTRED HEALTHCARE DELIVERY: THE ROLES OF ORGANIZATIONAL GOVERNANCE, EMPLOYEE WELL-BEING, AND INSTITUTIONAL SUPPORT

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ABSTRACT

The sustainability of the healthcare workforce is critical to the health systems' ability to deliver safe, responsive and patient-centred healthcare services. A lack of workforce staffing, occupational stress, and resources are important to consider, as they can affect workforce stability and the quality of care that is provided. This study draws on Social Exchange Theory and Job Demands–Resources (JD–R) model to explore the link between organisational governance, employee well-being, institutional support, healthcare workforce sustainability and patient-centred healthcare delivery. The questionnaire responses were analysed using quantitative, explanatory, cross-sectional design for which 420 health care professionals working in public and private health care institutions in Lahore, Rawalpindi and Islamabad in Pakistan were used. The analysis included descriptive statistics, reliability and validity test, confirmatory factor analysis, testing of structural model and bootstrapped mediation analysis. Organizational governance, employee well-being and institutional support were all positively related to healthcare workforce sustainability, which was positively related to patient-centred healthcare delivery. Workforce sustainability also mediated the relationships between each organizational factor and patient-centred delivery. Overall, the results contribute to the developing body of knowledge on workforce sustainability as a critical organizational process between institutional factors and perceived care processes. They emphasize the importance of incorporating accountable governance, employee well-being, and viable institutional support into strategies for the healthcare workforce and for quality improvement.

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Introduction

The healthcare sector across the globe is increasingly under pressure to deliver high quality services amidst staffing challenges, stress, turnover, and growing patient expectations. According to the World Health Organization (WHO, 2022), workforce shortages and inequitable distribution of workers is a key threat to sustainable health systems. Consequential challenges are related to the financial and technological resources required for healthcare delivery, but also to the presence, capacity, motivation, and health of healthcare professionals.

These are highlighted by the Global workforce reporting and the fact that they are not equally distributed. Shortages are estimated differently across regions and recruitment and retention are specifically challenging in rural and remote areas (WHO, 2024). Workforce sustainability should then not be interpreted as the hiring of workers; it should be interpreted as having the capacity to retain, develop and support an adequately skilled workforce in the long term.

Sustainability of the healthcare workforce is more than just keeping enough staff. It includes retention, professional development, occupational health, organizational commitment, and the ability of institutions to keep a continuity of service. There is a strong connection between work conditions and patient outcomes. As such, Aiken et al. (2014) demonstrated nurse staffing and educational preparation were linked to hospital mortality, highlighting the role of nurse workforce characteristics in healthcare quality.

Another key component of healthcare-system sustainability is organizational governance. Governance has a mechanism for accountability, transparency, ethical leadership, participatory decision making and resource allocation. Leadership and governance are one of the key building blocks of the healthcare system as identified by WHO (2007). Formal governance arrangements can, however, have only a limited impact where: employees lack support, workloads are excessive and occupational exhaustion is too high.

In an emotionally demanding, responsible, and resource-poor work environment like health care, employee well-being is especially vital. The Job Demands – Resources model is a model that explains how an excessive amount of Job demands can lead to exhaustion while adequate levels of resources can lead to increased motivation and engagement (Bakker & Demerouti, 2007). West et al. (2016) also highlight organizational interventions as areas where there is a need to prevent and reduce health care professional burnout.

Supervisory assistance, professional development, psychological safety, recognition, and access to the required tools can enhance employees' ability to maintain a positive performance. Organizational support theory suggests that employees who feel their organization values their inputs and cares for their welfare are more likely to become attached to their organization and help their organization achieve its goals (Eisenberger et al., 1986).

While previous research has explored healthcare burnout, staffing issues, and patient outcomes, these factors are largely studied individually. This study combines these organizational factors in a

holistic model and their link with patient-centred healthcare delivery and how these factors contribute to the sustainability of the healthcare workforce.

The study has three objectives: (1) explore the relationship between organizational governance, employee well-being, and institutional support with healthcare workforce sustainability; (2) explore the relationship between healthcare workforce sustainability and patient-centred healthcare delivery; and (3) explore if the relationship between the three organizational factors and patient-centred delivery is mediated by healthcare workforce sustainability.

Literature Review and Hypothesis Development

Theoretical foundations

Social Exchange Theory (Blau, 1964) explains the relationship between the healthcare institutions and staff members. If organisations act in a fair, supportive and caring way towards their employees, then the employees can respond with increased commitment, cooperation, and continued efforts to achieve organisational objectives. In health care contexts, this perspective could account for some of the relationships found between the governance practices and institutional support and the employees' willingness to stay on the job and participate in service delivery.

The JD-DR model builds on this line of thinking and incorporates the concepts of job demands and job resources. Stressful workloads, emotional stress and time constraints are common occurrences for healthcare professionals. These demands can be managed and sustained by having supportive leadership, staff autonomy, development, and adequate staffing (Bakker & Demerouti, 2007). Combined, both views indicate that good institutional practices are linked to workforce sustainability through the relationships of fair treatment, good health and access to adequate resources.

Recent reviews of intervention support the need for organizational strategies in terms of employee well-being. Cohen et al. (2023) noted that the workplace interventions focused on improving well-being and reducing burnout for nurses, physicians and allied health workers. The authors of Aust et al. (2024) reviewed the literature on workplace mental-health interventions in organizations and found inconsistencies in results of the interventions on different outcomes. Boskma et al. (2025) also discussed interventions, delivered by organizations, for health professionals' well-being. Taken together, these reviews suggest that approaches to improving well-being should focus on the individual's coping strategies, but also on the design of work, the leadership of teams and organizations, how their social resources are configured, and the conditions within the organization.

Organizational governance and healthcare workforce sustainability

Organizational governance includes accountability, transparency, ethical leadership, involvement of stakeholders, and the decision-making process within the organization. Good governance can enhance the allocation of resources, clarify professional duties and provide employee-friendly working environments which help to retain staff. WHO (2007) puts governance at the very heart of

health-system performance. Participatory leadership and transparency in procedures could assist healthcare institutions to address staff concerns, foster trust, and ensure stability.

H1: Organizational governance is positively associated with healthcare workforce sustainability.

Employee well-being and healthcare workforce sustainability

Employee well-being includes psychological health, occupational satisfaction, work–life balance and the ability to handle work demands. Burnout can be linked to decreased job satisfaction, increased intent to leave, and diminished ability to provide quality service. According to Maslach and Leiter (2016), burnout is a reaction to prolonged work-related stress, which includes a feeling of exhaustion, cynicism and lessened job efficiency. The relationship between healthcare workers' well-being, burn out and patient safety is also reported by Hall et al. (2016).

H2: Employee well-being is positively associated with healthcare workforce sustainability.

Institutional support and healthcare workforce sustainability

Institutional support is defined as the employees' perceptions of their organization's appreciation of and need for their involvement and support for the use of resources to enable effective professional practice. Support can range from enough equipment, to being listened to, to job development, training, recognition and mental health. Eisenberger et al. (1986) laid the groundwork as an important construct in understanding employee–organization relations. Later meta-analytic research finds a positive association between organizational support and positive attitudes and behaviors of employees (Rhoades & Eisenberger, 2002).

H3: Institutional support is positively associated with healthcare workforce sustainability.

Workforce sustainability and patient-centred healthcare delivery

Patient-centred health care focuses on respecting patient values, collaborating to make decisions, communicating well, responding and coordinating. Patient-centredness is considered one of the core aspects of quality health-care by the Institute of Medicine (2001). A sustainable workforce can contribute to a patient-centred approach by ensuring patient knowledge and experience is retained, turnover is minimised, continuity is maintained and professional relationships are enhanced. Further evidence of the relevance of the nurse workforce to the quality of health care comes from evidence connecting nurse staffing with patient outcomes (Aiken et al., 2014).

The importance of communication and patient experience is also a key component of patient-centred delivery that has recently been highlighted. In their study, Kim et al. (2024) examined the patient and provider experiences and identified communication as a patient experience element. Selected interventions in the area of organizational and service management can lead to better patient-experience measures, although the evidence base is limited, according to Jesus et al. (2025). The results of these findings should prompt discussion of interpersonal skills of individual clinicians in addition to institutional structures and conditions for the work.

H4: Healthcare workforce sustainability is positively associated with patient-centred healthcare delivery.

Mediating role of workforce sustainability

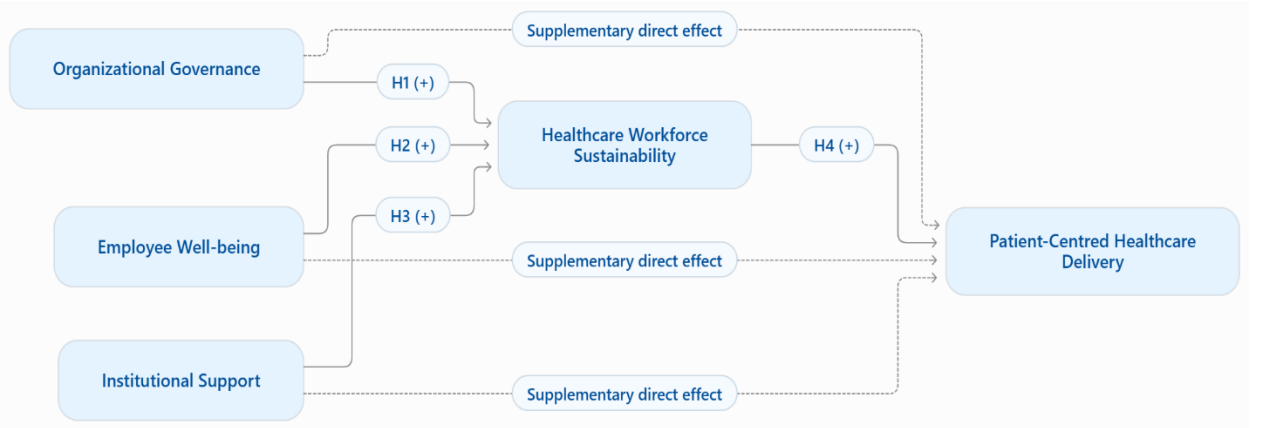
Although the optic of workforce sustainability is present everywhere, it is not yet fully developed. Other potential relationships between patient-centred delivery and organizational governance, employee well-being and institutional support can also be explored. Good governance can create equitable and predictable work arrangements; healthy staff can help ensure staff engagement; and institutional assistance can enhance staff capacity to provide responsive services. Hence, it is suggested that the workforce sustainability is a mediator between organizational conditions and patient-centred healthcare delivery.

The relationships between organizational governance, employee well-being and institutional support with patient-centred healthcare delivery are mediated by the sustainability of the healthcare workforce, H5a–H5c.

Conceptual framework

The conceptual framework places the concept of healthcare workforce sustainability as the mediating variable between organizational governance, employee well-being, and institutional support, and patient-centred healthcare delivery. It also has direct links between each organizational predictor and patient-centred delivery, to evaluate whether the relationships are completely or partially mediated by workforce sustainability.

Figure 1 Conceptual framework



The framework is composed of five constructs:

1. Organizational governance: institutional accountability, transparency, ethical leadership and participatory decision-making practices which can contribute to workforce sustainability.

2. Employee well-being: employee psychological and occupational wellbeing, work-life balance and job satisfaction as a contributing factor towards workforce sustainability.
3. Institutional support: organizational resources and support mechanisms available to health care professionals.
4. Healthcare workforce sustainability: the proposed mediator representing workforce stability, retention and professional continuity.
5. Patient-centred healthcare delivery: including the outcome construct that captures the perceptions of professionals regarding communication, participation, respect for preferences and care coordination.

To assess the potential for direct effects in addition to the indirect effects on workforce sustainability, the direct effects of organizational governance, employee well-being, and institutional support to patient-centred delivery are represented.

Research Methodology

Research design and population

The research design was descriptive and explanatory, with a cross sectional approach, using a quantitative method. Physicians, nurses, allied healthcare workers and healthcare administrators working in public and private hospitals were the target population. These professional groups were added as they are either directly or indirectly involved in organizing, managing and providing healthcare services.

Research setting and design

The study was carried out in the public and private health care institutions at Lahore, Rawalpindi and Islamabad, Pakistan. The urban environments encompass both primary and secondary health services as well as tertiary health services, and are staffed by multi-disciplinary teams who are engaged in clinical services, administration and service co-ordination. The incorporating of institutions of various ownership allowed for analysis of organizational governance, well-being of employees and institutional support in the context of different healthcare-management settings.

Sampling and participants

A non-probability purposive sampling approach was used to recruit healthcare professionals with relevant experience of organizational practices and service delivery. To participate, the individual had to be working in a participating healthcare facility and have one year's professional experience. 500 questionnaires were sent, and 420 (84.0%) were found to be complete and usable, and thus retained. A final sample of 105 physicians (25.0%), 168 nurses (40.0%), 84 allied healthcare professionals (20.0%) and 63 healthcare administrators (15.0%) were selected.

Data collection procedure

Structured, self-administered questionnaires were used to gather data from January to April 2026. The questionnaire was circulated via institutional contacts and departmental co-ordination and paper copies distributed to eligible healthcare professionals. Items were measured on a 5 point Likert scale from strongly disagree to strongly agree. The time provided for completing the questionnaire was adequate and procedures to ensure confidentiality of completed questionnaires were followed. Questionnaires were preliminary checked for completeness and suitability of the answers, and 420 usable questionnaires were analyzed.

Ethical considerations

Participation was voluntary. Prior to filling out the questionnaire, the participants were briefed with the purpose of the study, the nature of their involvement in the study and that their responses will be treated in a confidential manner. All participants gave informed consent. No personally identifiable information was requested in the questionnaire and the responses were analysed on a group basis. The autonomy, right to privacy and the right to withdraw from participation of the participants was respected. Before the data collection process, institutional ethics approval was obtained from the relevant institutions.

Measurement of variables

Governance of the organization was put into action by being transparent, accountable, and led by ethical people and decision-making processes were participatory. Employee wellbeing included psychological wellbeing, work–life balance, job satisfaction, and manageable occupational stress. Institutional support included supervision, professional development, recognition and resources. The sustainable nature of the healthcare workforce was measured using four indicators: intention to stay, perceived stability of the healthcare workforce, continuity of one's profession, and sustainability of one's job. Patient-centred healthcare delivery was assessed using a conceptual framework of (Santana et al., 2018) healthcare professionals' perceptions of communication, patient participation, respecting preferences and care coordination. As the patient-centred care measure was evaluated via the professionals' reports, it reflects the professionals' perception of how the patient-centred care was delivered rather than the actual experience of the patient.

Data analysis

Data analysis was conducted through application of statistical software which is used for data processing to obtain descriptive data, internal consistency, measurement validity, confirmatory factor analysis (CFA), structural relationship and mediation effect. The internal consistency was examined using Cronbach's alpha and composite reliability (CR). Convergent validity was checked by the factor loading of the items on the respective factors, and averaged variance extracted (AVE), while measurement-model fit was determined by standardized CFA indices. The structural model was assessed by using the standard values of path coefficients, test statistics and significance levels. Bootstrapping with 5000 resamples and 95% CI was used to assess indirect effects. The estimated

relationships are viewed as statistical associations, as the design is cross-sectional. To measure the discriminant validity, the Fornell-Larcker criterion and the heterotrait–monotrait (HTMT) ratio were used.

Results

Respondent characteristics

The sample of the study included 420 healthcare professionals from public and private healthcare institutions. As per Table 1, the population of women was 55.7% and men were 44.3%. The largest professional group was nurses (40.0%), followed by physicians (25.0%), allied healthcare professionals (20.0%) and healthcare administrators (15.0%). The public-sector institutions comprised 55.0% of the sample and private-sector institutions made up 45.0% of the sample. When asked about professional experience, 30.0 percent had less than five years experience, 40.0 percent had between five to 10 years experience and 30.0 percent had over 10 years of experience.

Table 1. Respondent characteristics (N = 420)

Characteristic	Category	n	%
Gender	Male	186	44.3
	Female	234	55.7
Profession	Physicians	105	25.0
	Nurses	168	40.0
	Allied professionals	84	20.0
	Administrators	63	15.0
Institution	Public	231	55.0
	Private	189	45.0
Experience	Under 5 years	126	30.0
	5–10 years	168	40.0
	Over 10 years	126	30.0

Descriptive statistics and measurement reliability

Means, standard deviations, and reliability estimates of the five constructs of the study are presented in Table 2. The mean scores ranged from 3.48–3.83, with institutional support being the lowest. There was some variation in respondents' assessments, with standard deviations ranging from 0.65 to 0.76. Relability of Cronbach's alpha for the scales ranged from 0,88 to 0,92 and composite reliability for the scales ranged from 0,90 to 0,94. Convergent validity was supported by all AVE values that were higher than .50.

Table 2. Descriptive statistics and reliability

Construct	Mean	SD	α	CR	AVE
Organizational governance	3.72	0.68	.88	.90	.69
Employee well-being	3.54	0.74	.90	.92	.73
Institutional support	3.48	0.76	.89	.91	.71
Workforce sustainability	3.61	0.70	.91	.93	.75
Patient-centred delivery	3.83	0.65	.92	.94	.77

Measurement model assessment

The confirmatory factor analysis showed that the measurement model is a good fit with the observed data. The fit indices were: $\chi^2/df = 1.84$; comparative fit index (CFI) = .963; Tucker–Lewis index (TLI) = .956; root mean square error of approximation (RMSEA) = .045; standardized root mean square residual (SRMR) = .041. Factor loadings ranged between .72 and .91, which were standardized. In conjunction with the reliability and AVE values given in Table 2, the results confirm the internal consistency and convergent validity of the measurement model.

Discriminant validity

Table 3. Fornell–Larcker discriminant-validity matrix

Construct	1	2	3	4	5
1. Organizational governance	**.831**				
2. Employee well-being	.540	**.854**			
3. Institutional support	.580	.620	**.843**		
4. Workforce sustainability	.610	.660	.640	**.866**	
5. Patient-centred delivery	.490	.550	.520	.630	**.877**

The numbers along the diagonal line of Table 3 are the square root of average variance extracted (AVE), and the off diagonal numbers are the correlation between the constructs. If each diagonal value is greater than the inter-construct correlations then there is support for discriminant validity.

The Fornell–Larcker assessment shows that the square root of the Average Variance Extracted (AVE) of each construct is greater than the correlations between the constructs. The diagonal correlations range from .831 to .877, while the inter-construct correlations fall in the range from .490 to .660. The results are consistent with the discriminant validity of the five-construct measurement model.

Table 4. Heterotrait–monotrait (HTMT) ratios

The HTMT ratios reported in Table 4 are all below the commonly applied .85 threshold, providing additional support for discriminant validity.

Construct pair	HTMT
Organizational governance–Employee well-being	.61
Organizational governance–Institutional support	.66
Organizational governance–Workforce sustainability	.69
Organizational governance–Patient-centred delivery	.57
Employee well-being–Institutional support	.72
Employee well-being–Workforce sustainability	.76
Employee well-being–Patient-centred delivery	.63
Institutional support–Workforce sustainability	.74
Institutional support–Patient-centred delivery	.60
Workforce sustainability–Patient-centred delivery	.78

Structural model and hypothesis testing

All four hypothesized direct relationships are supported by the results of the structural model. Healthcare workforce sustainability was positively related to organizational governance ($\beta = .24$, $t = 4.58$, $p < .001$) which supported H1. The findings that employee well-being was associated with workforce sustainability—$\beta = .35$, $t = 6.72$, $p < .001$—were consistent with hypothesis 2 (H2). Support from institutions was also a positive correlate of workforce sustainability ($\beta = .29$, $t = 5.46$, $p < .001$), supporting H3. Last, but not least, patient-centred delivery of healthcare was positively linked to workforce sustainability ($\beta = .51$, $t = 9.18$, $p < .001$), which supports H4.

Table 5. Structural relationships, including direct effects on patient-centred delivery

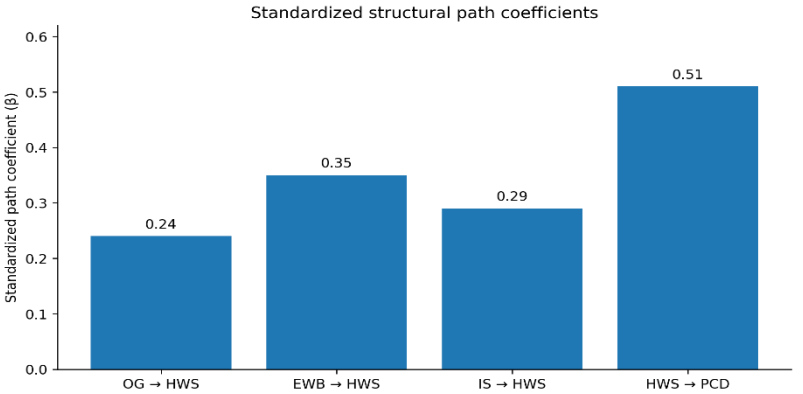
Hypothesis	Structural path	β	SE	t	p	95% CI	Decision
H1	OG → HWS	.24	.052	4.58	< .001	[.137, .343]	Supported
H2	EWB → HWS	.35	.052	6.72	< .001	[.248, .452]	Supported
H3	IS → HWS	.29	.053	5.46	< .001	[.186, .394]	Supported
H4	HWS → PCD	.51	.056	9.18	< .001	[.401, .619]	Supported
E1	OG → PCD	.07	.045	1.56	.119	[−.02, .16]	Not supported
E2	EWB → PCD	.10	.047	2.13	.034	[.01, .19]	Supported
E3	IS → PCD	.05	.044	1.14	.255	[−.04, .14]	Not supported

Note. β = standardized path coefficient; SE = standard error; CI = confidence interval.

The results showed that organizational governance (β = .24, p < .001), employee well-being (β = .35, p < .001), and institutional support (β = .29, p < .001) have positive relationships with workforce sustainability. Patient-centred delivery is also strongly associated with workforce sustainability, p < .001 (β = .51).

In the supplementary direct effects, employee well-being was positively related to the patient-centred delivery (β = .10, p = .034). The direct effect of organisational governance (β = .07, p = .119) and institutional support (β = .05, p = .255) were not statistically significant, however. The relationships between organizational governance and institutional support with patient-centred delivery appear to be passed down through workforce sustainability, while employee well-being seems to still have direct and indirect links.

Figure 2. Standardized structural path coefficients



Mediation analysis

To explore the mediation effects, the relationships between organizational governance, employee well-being, and institutional support on patient-centred healthcare delivery were tested by using mediation analysis. The indirect effect of organisational governance (through workforce sustainability) was .12 (95% CI [.07, .19]). The indirect effect of employee well-being was .18 (95% CI [.11, .26]), while the indirect effect of institutional support was .15 (95% CI [.09, .22]). All of the confidence intervals do not contain 0, suggesting a statistically significant indirect effect. Therefore, H5a, H5b and H5c were endorsed.

When viewed as direct and indirect-effect together, results are similar to indirect-only mediation in organizational governance and institutional support, as the direct-effects results were not statistically significant, but the indirect-effects confidence intervals were not zero. The direct and indirect effects were all positive and significant for the employees' well-being, consistent with complementary partial mediation.

Table 6. Bootstrapped mediation results

Hypothesis	Indirect path	Effect	95% CI
H5a	OG → HWS → PCD	.12	[.07, .19]
H5b	EWB → HWS → PCD	.18	[.11, .26]
H5c	IS → HWS → PCD	.15	[.09, .22]

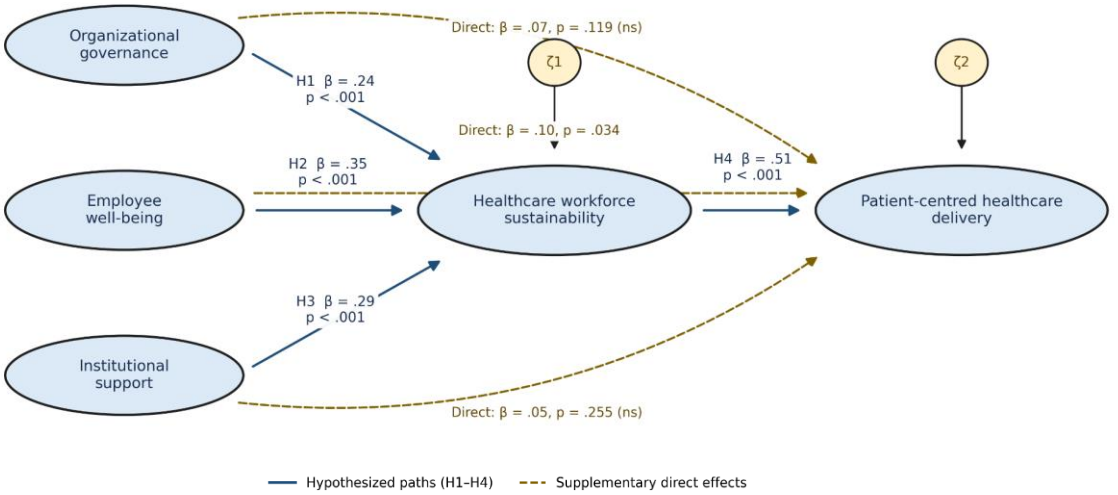


Figure 3. Structural Model Path Diagram

Discussion

The findings align with the framework for organizational governance, employee well-being and institutional support to healthcare worker sustainability and healthcare worker sustainability to patient centered healthcare delivery. All organizational predictors were positively related to workforce sustainability and workforce sustainability was positively related to patient-centred delivery. The substantial indirect effects also suggest that the pathway of workforce sustainability is a relevant connection between organizational conditions and the perceived care practices. The findings when taken together, relate organizational management to a capacity of staff to provide responsive care.

Staff sustainability was the other factor positively correlated with organizational governance ($\beta = .24$, $p < .001$). This is in line with the focus of WHO (2007) in the health system on leadership and governance as key health system functions. Clear management, accountability, ethical leadership and employee involvement can create reliable management processes and boost trust in management. The outcome is also consistent with Alkan et al.'s (2024) review paper, which revealed that leadership involvement and organizational practices are linked to healthcare workforce development, recruitment and retention. Governance can help to support workforce sustainability if employee issues are part of institutional planning, allocation of resources, monitoring of performance,

and accountability for managers. While its association is smaller than the other two, it is still a component of the organizational environment, governance.

The strongest connection with workforce sustainability among the three organizational predictors was with employee well-being ($\beta = .35$, $p < .001$). This discovery is congruent with the JD–R model that suggests the job resources enable employees to handle demanding job conditions and stay engaged (Bakker & Demerouti, 2007). The emotional and operational demands placed on healthcare workers can be quite significant, and if these needs are not met by sufficient staffing, autonomy, supportive supervision, and time for recuperation, they are likely to lead to exhaustion and disengagement. The findings are also aligned with prior studies indicating that work interventions can have an impact on well-being and burnout, with variations depending on context and outcomes (Aust et al., 2024; Cohen et al., 2023). Similarly, Boskma et al (2025) highlight the need for managing the work environment rather than focusing on individual employees' wellbeing. The results thus further substantiate the importance of employee wellbeing in the sustainability of the workforce.

Workforce sustainability was significantly positively linked with the institutional support ($\beta = .29$, $p < .001$). This discovery is consistent with organizational support theory that suggests employees' attitudes toward their organization are influenced by their beliefs that their organization values their contributions and cares about their welfare (Eisenberger et al., 1986; Rhoades & Eisenberger, 2002). Support in healthcare manifests itself in practical arrangements in the organization such as access to equipment, responsive supervision, professional development, recognition, and appropriate staffing. Empirical evidence has also emerged recently to indicate that organizational support and involvement of a workforce leader are relevant to workforce retention (Alkan et al., 2024). The findings imply that formal governance processes are necessary, but that workers feel supported in the work is also important for the sustainability of the workforce.

The patient-centred care delivery approach had the strongest positive direct relationship with workforce sustainability ($\beta = .51$, $p < .001$). The discovery links workforce management to one of the essential elements of the quality of healthcare. For stable teams, this can help maintain institutional knowledge, help with coordination, minimize breaks in professional relationships, and help to improve communication with patients. Systems are needed to listen to patients, to explain options, to coordinate services, and to respond to patient preferences in order to provide patient centred care. More recent studies include communication as a key element of patient experience and patient-centred care (Kim et al., 2024). Few studies exist on the impact that organizational and service-management methods could have on the patient journey, but these have shown some influence (Jesus et al., 2025). The result aligns with the perspective that workforce continuity and the organizational context are pertinent to patient-centred services.

The direct relationships are complemented by the mediation results. The most significant indirect effect was on employee well-being (.18), followed by institutional support (.15), and organizational governance (.12). In this pattern, the link between the well-being of employees and the delivery of a patient-centred approach is passed down, at least in part, via workforce sustainability. Improved

staff health could lead to more stable and engaged staff, and this could help to ensure continuity and responsiveness when caring for patients. In the same way, institutional support can help improve employees' capacity to stay in their jobs and work effectively, and governance can create a framework for improved workforce management consistency. These results are in line with the Social Exchange Theory and the JD–R model, but the cross-sectional design does not allow to draw causality.

The supplementary direct effects are provided as additional insight into the mediation pattern. The associations between governance, institutional support and patient-centred delivery seem to be related to workforce sustainability, whereas employee wellbeing has an indirect association through workforce sustainability and a small direct association. This distinction is relevant since the presence of a substantial indirect effect does not, in isolation, constitute evidence of complete mediation, but rather the joint consideration of the direct and indirect effects.

The results have implications for the definition and monitoring of performance in health care institutions. Addressing workforce sustainability should not be limited to workforce-related metrics or to addressing a vacancy, but should also include considerations related to patient-facing service delivery. Governance, employee wellbeing and institutional support should not be treated as one-off and separate actions, but as complementary. Staffing levels, lack of supervision or an in-fair decision making process can limit the impact of retention strategies. The integrated approach of holding people accountable, providing a supportive work environment and offering professional supports is more consistent with the types of relationships found in the model.

These results need to be interpreted with the measurement and design of the study in mind. Patient-centred delivery was measured indirectly, based on the perception of healthcare professionals. The findings are therefore about experiences of patient-centred practices, and do not provide evidence for any improvement in patient experience or clinical outcomes. There is also no temporal precedence in this cross-sectional design. longitudinal studies with linked employee and patient data would be required to explore if there are measurable changes in patient experience over time after employment factors are changed to increase the sustainability of the workforce.

Theoretical and Practical Implications

Theoretical implications

The study advances research in healthcare management by bringing together the three concepts of organization governance, employees' well-being, and institutional support under a single umbrella of workforce sustainability and patient-centred delivery. Social Exchange Theory, as a theory, is able to explain the employees' reaction to fair governance and supportive institutional treatment in the form of commitment and continued contribution. The JD–R model outlines why resources and supportive work conditions can contribute to employee well-being in challenging work contexts. These views offer a complementary description of organizational and employee aspects of workforce sustainability. The study also establishes and confirms the mediating role of workforce sustainability between internal factors of the organisation and perceived patient-centred practices.

Practical and policy implications

The results suggest that workforce sustainability should be considered as a strategic performance priority for healthcare administrators. Governance processes should facilitate open decision making, accountability, ethical leadership, and effective employee engagement. Agricultural labor issues must be integrated into governance reviews, allocation of resources and institutional monitoring of performance. Safe processes need to be put in place for staff to voice concerns regarding workload, patient safety, staffing levels, and operational challenges. Organizational well-being strategies such as workload reviews, predictable scheduling as available, psychological support, supervision, adequate rest and professional development are all strongly related to employee well-being and workforce sustainability. Interventions should focus on coping with the individual in addition to the workplace situation (Aust et al., 2024; Boskma et al., 2025; Cohen et al., 2023).

The inclusion of workforce sustainability indicators within healthcare quality-monitoring systems should be included in policymaking. Relevant indicators are employee turnover, absenteeism, staffing adequacy, burnout, intentions to leave and patient-reported experiences. These priorities align with the prioritization of WHO (2022) to focus on workforce planning, employment, protection, and performance.

Limitations and Future Research

Numerous limitations in the findings should be noted. First, the cross-sectional design will only be able to capture relationships at one point in time, and will not be able to establish temporal precedence or causation. Longitudinal data might be explored on whether governance, employee wellbeing, and institutional support come before workforce sustainability, and patient-centred delivery. Secondly, the measures are based on self-reports from healthcare professionals. These perceptions represent important factors in understanding conditions in the organization, but may be subject to common-method variance and are not necessarily a true reflection of the patients' experiences. Future research may be able to integrate patient-reported experience measures, clinical quality measures, and administrative workforce measures as part of employee surveys. Third, other mechanisms such as organizational commitment, team climate, psychological safety, work engagement and care coordination could be explored in future research. Multilevel designs would allow for differences between individual perceptions and hospital-level governance and resource conditions.

Conclusion

The purpose of this study was to explore the relationships between organizational governance, employee well-being, institutional support, healthcare workforce sustainability and patient-centred healthcare delivery. The results suggest that all three organizational factors are positively related to workforce sustainability and workforce sustainability is positively related to patient-centred delivery. The mediation analysis also shows statistically significant indirect relationships between governance, employee well-being, and institutional support and patient-centred care as a result of the workforce sustainability. These findings highlight the need to consider workforce

sustainability as a strategic priority for delivering high-quality health care. Good governance, good care for employees and sound institutional support can help to provide conditions where health professionals are able to provide responsive and continuous services. To enhance patient-centred care, healthcare organizations should establish priorities for their staff as a part of their governance, management, and quality-improvement practices. Further research is required in both a longitudinal and multi-source fashion to determine the relationship of these organizational factors to patient-reported experience and clinical outcomes.

Declarations

Competing interests. The authors declare no competing interests.

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Submission declaration. The authors confirm that the manuscript is original, has not been published previously, and is not under consideration for publication elsewhere.

Ethics approval and informed consent: Informed consent was obtained from participants before they began the voluntary questionnaire. Formal institutional ethics approval / exemption determination was obtained from relevant institutions for this study.

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