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Workload and Work Stress as Predictors of Service-Oriented Behavior among Midwives at Community Health Centers

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Abstract
Introduction: *Service-oriented behavior is important in primary health care because it reflects empathy, responsiveness, and attention to patient needs. High work demands in resource-constrained community health centers may reduce midwives' capacity to display these behaviors.* ***Objective:*** *To analyze the effects of workload and work stress on service-oriented behavior among midwives. Method: This quantitative explanatory cross-sectional survey involved 36 midwives working at community health centers in Jayawijaya Regency, Highland Papua. Data were collected using four-point Likert questionnaires and analyzed using multiple linear regression after classical assumption testing.* ***Result and Discussion:*** *Workload had a significant negative effect on service-oriented behavior (β = -0.347; p = 0.026), and work stress also had a significant negative effect (β = -0.368; p = 0.018). The model was significant (F = 7.874; p = 0.002) and explained 32.3% of the variance. These findings indicate that higher job demands and psychological pressure may reduce empathy, helpfulness, and responsiveness in patient interactions.* ***Conclusions:*** *Managing workload and work stress is important for sustaining patient-centered service behavior among midwives.*

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Introduction

Health workers, particularly midwives, are central to primary health-care systems. Midwives provide essential maternal and child health services, including antenatal, intrapartum, and postpartum care. In remote areas such as Jayawijaya Regency in Highland Papua, their role becomes even more important because health-worker shortages, limited infrastructure, and difficult geography can increase the breadth and intensity of their responsibilities. Under these conditions, midwives may also face duties that extend beyond routine maternity care, making the management of workload and psychological strain especially relevant to service quality. These demanding working conditions may influence not only the completion of clinical responsibilities but also how midwives interact with patients and respond to their individual needs.

Within organizational psychology, service-oriented behavior refers to employee behaviors that support high-quality service delivery and respond to the needs of service recipients. Contemporary service research describes service-oriented organizational citizenship behavior as voluntary, customer-focused conduct that strengthens service delivery, participation, and organizational representation (Le-Hoang Long et al., 2022; Tsai et al., 2022). However, service-oriented organizational citizenship behavior (SO-OCB) should be distinguished from routine patient-centered professional responsibilities. Routine responsibilities include mandatory clinical procedures, respectful communication, informed consent, patient education, and adherence to professional standards. In contrast, SO-OCB refers to discretionary behaviors that extend beyond formally prescribed duties, such as voluntarily providing additional assistance, proactively anticipating patient needs, and supporting service improvements. Therefore, routine patient-centered care represents an essential professional obligation, whereas SO-OCB emphasizes additional voluntary contributions to service delivery. In health care, comparable behaviors can be expressed through empathy, courtesy, clear communication, willingness to help, and responsiveness to patient needs. Nevertheless, these behaviors should only be classified as organizational citizenship behavior when they exceed minimum professional requirements rather than merely reflect expected clinical practice. Evidence from service settings also shows that service-oriented citizenship behavior is positively associated with perceived service quality (Harsono et al., 2021).

The Job Demands-Resources (JD-R) theory provides a useful framework for explaining how workload and work stress may influence such behavior. The updated JD-R framework explains that excessive demands consume physical, cognitive, and emotional resources, while adequate job resources support motivation, engagement, and performance (Bakker et al., 2023). Within this framework, workload represents a job demand, whereas work stress reflects a psychological response to perceived demands that may exceed available coping resources. Service-oriented behavior is positioned as a behavioral outcome potentially affected by these conditions. This distinction is theoretically important because workload and work stress represent different constructs and may show different associations with service behavior. Research among health-care workers in Indonesia similarly indicates that higher job demands are associated with burnout and reduced work engagement, whereas job resources can buffer adverse outcomes (Herachwati et al., 2024). Studies among nurses also show that workload can affect perceived job demands, emotional exhaustion, and the quality of patient care (Banda et al., 2022; Maghsoud et al., 2022).

Work-related stress among health and care workers is a continuing global concern. The World Health Organization has emphasized the need for organizational interventions that prevent psychosocial risks and protect mental health at work (Organization, 2022). In midwifery specifically, a recent systematic review found that occupational stress has implications for midwives' health, well-being, performance, and job satisfaction, and that both individual- and organization-level interventions may be beneficial (Anchors et al., 2024). In Indonesia, (Cahyani & Santoso, 2021) reported that a substantial proportion of midwives in remote community health centers experienced moderate to high work stress. These findings indicate the importance of examining whether occupational demands and psychological strain are associated with the interpersonal and service-related behaviors of midwives, particularly in resource-constrained primary-care settings.

Previous empirical findings concerning workload, stress, and health-worker performance are not fully consistent. (Samel et al., 2024) found that leadership, therapeutic communication, and workload significantly influenced midwives' work stress when managing childbirth complications. (Syahputra et al., 2024) reported significant relationships between workload-related factors and midwives' performance in the Integrated Management of Childhood Illness program. In contrast, (Lasri et al., 2022) found no significant relationship between workload or work stress and nurses' performance in their setting. These differences suggest that the effects of job demands may depend on context and on the outcome being studied. Importantly, these studies primarily examined occupational stress or general work performance rather than distinguishing service-oriented behavioral outcomes from technical clinical performance. Consequently, their findings do not directly establish how workload and work stress relate to the interpersonal dimensions of service delivery

A key gap is that previous studies have commonly used work stress or general clinical performance as the dependent variable, while fewer studies have examined service-oriented behavior as an outcome that is directly connected to patients' experience of care. The specific gap addressed in this study is the limited evidence, within the literature reviewed, concerning the simultaneous associations of workload and work stress with service-oriented behavior among midwives working in geographically remote primary-care facilities. Unlike general clinical performance, which emphasizes task completion and technical competence, service-oriented behavior focuses on the interpersonal and responsive aspects of service delivery. This distinction allows the study to examine a behavioral dimension of health-care performance that may not be adequately represented by conventional performance indicators. Midwives in community health centers perform routine clinical services, administrative tasks, community outreach, field work, reporting, record keeping, and cross-sector collaboration. Research in Indonesian community health centers has also shown that workload may reduce nurses' work engagement and performance, supporting the importance of studying job demands in primary-care settings (Andika et al., 2023).

This study therefore examines service-oriented behavior from a behavioral service-quality perspective rather than focusing only on technical performance. Based on JD-R theory, workload is conceptualized as a job demand requiring physical, cognitive, and emotional effort. When these demands exceed available resources, work stress may arise and reduce the psychological energy needed for friendly, patient, empathetic, responsive, and patient-centered service behavior. The research question is whether workload and work stress influence service-oriented behavior among midwives at community health

centers. The hypothesis is that workload and work stress significantly predict service-oriented behavior among midwives.

Method

This study used a quantitative explanatory design with a cross-sectional survey approach. The research was conducted at community health centers in Jayawijaya Regency, Highland Papua. The target population comprised all midwives working at community health centers in the regency. Data collection was conducted from 8 June to 30 June 2026. All accessible midwives in the study setting were invited to participate, and 36 midwives returned complete responses and were included in the analysis. Therefore, the study used incidental (accidental) sampling with a final sample of 36 respondents. Inclusion criteria were active employment at a community health center in Jayawijaya Regency during the data-collection period, at least two years of work experience, direct patient-service responsibilities, and willingness to participate. Midwives who were on leave, undertaking study assignments, inactive during the data-collection period, or not providing direct patient services were excluded where applicable.

Data were collected using questionnaires with a four-point Likert response format: Strongly Appropriate = 4, Appropriate = 3, Inappropriate = 2, and Strongly Inappropriate = 1. The data were processed using SPSS. The analysis included the Shapiro-Wilk normality test, multicollinearity assessment using tolerance and variance inflation factor values, heteroscedasticity assessment based on the reported residual analysis, and multiple linear regression. Statistical significance was evaluated at $p < 0.05$.

Result and Discussion

1. Result

Table 1
Shapiro-Wilk Normality Test

Variable	Statistic	df	Sig.
Unstandardized Residual	.970	36	.412

The Shapiro-Wilk test produced a significance value of 0.412 for the unstandardized residuals. Because this value is greater than 0.05, the residuals were considered normally distributed, indicating that the regression model met the normality assumption.

Table 2
Multicollinearity Test and Regression Coefficients

Model	B	Std. Error	Beta	t	Sig.	Tolerance / VIF
Constant	30.262	1.806	-	16.754	.000	-
Workload	-.182	.078	-.347	-2.335	.026	.930 / 1.075
Work Stress	-.197	.080	-.368	-2.478	.018	.930 / 1.075

Both workload and work stress had tolerance values of 0.930 and variance inflation factor values of 1.075. The tolerance values were above 0.10 and the variance inflation factor values were below 10, indicating no multicollinearity problem between the independent variables.

Table 3
Model Summary and ANOVA

Model	R	R Square	Adjusted R Square	Std. Error	F	Sig.
Regression Model	.568	.323	.282	2.777	7.874	.002
Regression SS / df / MS	121.469	2	60.735			
Residual SS / df / MS	254.531	33	7.713			

The multiple regression model had R = 0.568 and R^2 = 0.323, with an adjusted R^2 of 0.282. The ANOVA result was significant (F = 7.874; p = 0.002), indicating that workload and work stress jointly predicted service-oriented behavior. The two predictors explained 32.3% of the variance in service-oriented behavior.

Table 4
Residual Statistics for Heteroscedasticity Assessment

Variable	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.11	2.58	1.99	.474	36
Residual	-2.270	4.641	.000	1.719	36
Std. Predicted Value	-1.869	1.242	.000	1.000	36
Std. Residual	-1.283	2.622	.000	.971	36

Based on the reported residual assessment, the residual mean was 0.000 and the standard deviation of the standardized residual was 0.971. The original analysis did not identify a residual pattern indicating inconsistent variance; therefore, the regression model was treated as meeting the homoscedasticity assumption.

Table 5
Multiple Linear Regression Test

Predictor	B	Std. Error	Beta	t	Sig.
Constant	30.262	1.806	-	16.754	.000
Workload	-.182	.078	-.347	-2.335	.026
Work Stress	-.197	.080	-.368	-2.478	.018

Workload had a negative regression coefficient (B = -0.182; β = -0.347; p = 0.026), while work stress also had a negative coefficient (B = -0.197; β = -0.368; p = 0.018). Because both significance values were below 0.05, workload and work stress each had a statistically significant negative effect on service-oriented behavior.

Table 6
Respondent Characteristics

a. Age

Age (years)	Frequency	Percent
25	1	2.8
28	4	11.1
29	2	5.6
30	4	11.1
31	2	5.6
33	3	8.3
34	2	5.6
35	3	8.3
36	2	5.6
37	3	8.3
38	3	8.3
40	3	8.3
41	1	2.8
45	1	2.8
47	1	2.8
55	1	2.8
Total	**36**	**100%**

b. Length of Employment

Years	Frequency	Percent
4	1	2.8
5	6	16.7
6	8	22.2
7	3	8.3
8	3	8.3
9	2	5.6
10	5	13.9
12	4	11.1
15	3	8.3
20	1	2.8
Total	**36**	**100%**

c. Education

Education	Frequency	Percent
Diploma III	30	83.3
Professional Program	6	16.7

Total	**36**	**100%**

2. Discussion

The findings show that workload has a significant negative effect on service-oriented behavior. In practical terms, higher workload was associated with a lower tendency for midwives to display patient-focused service behaviors. From the JD-R perspective, this pattern is consistent with the health-impairment process, in which sustained job demands consume cognitive and emotional resources that would otherwise be available for attentive interpersonal service (Bakker et al., 2023). However, this mechanism remains a theoretical explanation rather than an empirically demonstrated pathway in the present study, as cognitive depletion, emotional exhaustion, and resource availability were not directly measured. Moreover, the cross-sectional design prevents determining whether increased workload precedes reduced service-oriented behavior. Similar evidence among nurses indicates that heavy workload can contribute to emotional exhaustion and lower quality of care, partly because staff have less time and psychological capacity to meet all patient needs (Banda et al., 2022; Maghsoud et al., 2022). Nevertheless, these studies examined different professional groups and outcomes, limiting direct comparability with midwives' service-oriented behavior.

The negative effect of work stress on service-oriented behavior suggests that psychological strain may also reduce the quality of interpersonal service. When work stress rises, attention and emotional energy may be directed toward coping with pressure rather than toward additional helping behavior, patience, and positive responses to patients. Although this interpretation is consistent with JD-R theory, the present study did not assess coping strategies, emotional regulation, or psychological resource depletion. Therefore, the proposed mechanisms should be regarded as plausible explanations rather than established mediating processes. Additionally, workload and work stress may be interrelated, but their temporal sequence and potential indirect relationships cannot be established from the current analysis. This interpretation is consistent with research showing that job demands and stress can undermine work-related well-being and performance among health-care workers (Herachwati et al., 2024; Manchana, 2022). It is also consistent with midwifery evidence indicating that occupational stress can affect performance and well-being (Anchors et al., 2024). However, associations reported in previous studies do not confirm that work stress independently causes changes in service-oriented behavior in this population

The simultaneous model explained 32.3% of the variance in service-oriented behavior, meaning that workload and work stress are relevant but not exclusive predictors. The remaining 67.7% of variance was not explained by the regression model, indicating that the two measured predictors provide only a partial statistical account of differences in service-oriented behavior. This unexplained variance should not be attributed exclusively to specific organizational factors without additional empirical evidence. Other job resources and organizational conditions may also shape service behavior. Studies of service-oriented organizational citizenship behavior emphasize the roles of organizational support, psychological empowerment, commitment, fairness, and positive job attitudes (Le-Hoang Long et al., 2022; Tsai et al., 2022). In primary health-care settings, social support, staffing adequacy, leadership, role clarity, and access to resources may therefore be important complementary factors for future research. Importantly, the present study did not measure these job resources or test their potential moderating effects. Thus, although the findings are compatible with the JD-R framework,

they do not provide a comprehensive test of its proposed motivational and health-impairment processes.

These results also help clarify differences in earlier health-workforce studies. (Samel et al., 2024) found workload to be important for midwives' work stress, while (Syahputra et al., 2024) found workload-related factors associated with midwife performance. These discrepancies may reflect differences in occupational roles, organizational environments, workload measurement, sample characteristics, and the operational definitions of performance. Specifically, Samel et al. examined work stress as an outcome, whereas Syahputra et al. and Lasri et al. focused on work performance. The present study instead examined service-oriented behavior, which emphasizes interpersonal responsiveness rather than overall clinical task performance. Therefore, the findings are not directly contradictory because the studies assessed different dependent variables. Conversely, (Lasri et al., 2022) reported non-significant relationships between workload, work stress, and nurse performance. The present study uses a more specifically service-focused outcome, which may be sensitive to emotional and interpersonal resource depletion even when technical task completion remains adequate. Evidence from other service settings likewise indicates that service-oriented citizenship behavior is closely connected with service quality (Harsono et al., 2021).

For community health-center management, the findings imply that maintaining service-oriented behavior requires attention to both job demands and employee well-being. Practical responses may include more balanced workload allocation, adequate staffing, supportive supervision, clearer task prioritization, communication training, and access to stress-management support. Such organizational approaches are aligned with recommendations to reduce psychosocial risks and protect mental health at work (Organization, 2022). However, these recommendations should be interpreted as potential management strategies rather than interventions proven effective by this study. The small sample of 36 midwives, incidental sampling, and cross-sectional design limit statistical precision, generalizability, and causal interpretation. Future longitudinal or intervention studies should incorporate validated measures of emotional exhaustion, coping resources, organizational support, and service-oriented behavior to examine the proposed psychological mechanisms and determine whether reducing workload or work stress is followed by improvements in patient-facing service behavior.

Study Limitations

This study has several limitations. First, the cross-sectional design prevents establishing temporal or causal relationships between workload, work stress, and service-oriented behavior. Second, the sample comprised only 36 midwives recruited through incidental sampling at community health centers in Jayawijaya Regency, limiting statistical precision, representativeness, and generalizability. Third, questionnaire-based self-reports may introduce social desirability and common-method bias. The manuscript does not provide sufficient information on instrument development, construct validity, or internal consistency, making measurement quality difficult to assess. Moreover, service-oriented behavior may overlap with routine professional responsibilities rather than exclusively representing voluntary extra-role conduct. The regression model included only workload and work stress, without adjusting for organizational support, staffing, leadership, or other potential confounders. Finally, proposed psychological mechanisms, including emotional exhaustion and coping, were not directly measured. Future studies should employ larger probability-based samples, validated instruments, longitudinal

designs, and broader organizational measures to clarify these associations in remote primary healthcare settings

Conclusion

Workload and work stress were significant negative predictors of service-oriented behavior among 36 midwives working at community health centers in Jayawijaya Regency, Highland Papua. Workload had $\beta = -0.347$ ($p = 0.026$), while work stress had $\beta = -0.368$ ($p = 0.018$). Simultaneously, both variables significantly predicted service-oriented behavior ($F = 7.874$; $p = 0.002$), with $R^2 = 0.323$. These findings indicate that increasing job demands and psychological pressure may reduce midwives' capacity to display empathetic, helpful, patient, and responsive service behavior. Community health centers should therefore consider workload management, organizational support, and stress-management strategies as part of efforts to maintain patient-centered service quality. Future research should use larger samples and examine additional job resources that may protect service-oriented behavior.

Declaration of AI Use

The authors used ChatGPT (OpenAI) solely as an assistance tool for English language editing, grammatical correction, sentence structure improvement, and typographical error checking. The authors reviewed and verified the final manuscript and take full responsibility for its scientific content, accuracy, and integrity. AI was not used to generate research data or conduct statistical analyses

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