

THE ROLE OF WORK STRESS AND PROFESSIONALISM AS MEDIATORS OF THE INFLUENCE OF WORK SHIFTS AND WORK ENVIRONMENT ON THE WELFARE OF PHARMACEUTICAL PERSONNEL IN HOSPITALS THROUGHOUT KENDARI CITY

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Abstract

The welfare of pharmaceutical personnel is an important aspect in maintaining the quality of service and patient safety in hospitals. This study aims to analyze the influence of work shifts and work environment on the welfare of pharmaceutical personnel with work stress and professionalism as mediation variables. The research uses a quantitative approach with an explanatory design. The research was carried out on pharmaceutical personnel at Bahteramas Hospital and Kendari City Hospital. The research sample amounted to 110 pharmaceutical personnel who were selected using the saturated sampling technique. Data were collected through questionnaires and analyzed using Partial Least Squares Structural Equation Modeling with the SmartPLS application. The results of the study showed that the work environment had a positive and significant effect on professionalism with a coefficient of 0.557 and on welfare of 0.354. Professionalism also had a positive and significant effect on welfare with a coefficient of 0.543. On the other hand, shift work has no significant effect on work stress, professionalism, or welfare. The work environment has no significant effect on work stress, while work stress has no significant effect on welfare. Professionalism partially mediates the influence of the work environment on welfare with an indirect influence coefficient of 0.302. The research model was able to explain 67.9 percent of the variation in the welfare of pharmaceutical personnel. The findings confirm that improving the work environment and strengthening professionalism need to be a priority for hospital management.

Keywords: Shift Work; Work Environment; Job Stress; Professionalism; Pharmacy Personnel Well-Being

1. Introduction

The welfare of health workers is an important concern in hospital management because the quality of service is not only determined by the sophistication of technology and the availability of facilities. The psychological condition of health workers who carry out services also determines the organization's ability to maintain the quality of service and patient safety. In this context, welfare is not just a stress-free condition, but related to the ability of health workers to maintain positive emotions, involvement, work relationships, job meaning, and achievements in carrying out their professional roles.

Pharmacists have a strategic position in the hospital service system. They ensure the safety of drug use, the accuracy of dispensing, the provision of drug information, the management of pharmaceutical preparations, and the support of clinical decisions. The job demands high accuracy because mistakes can have consequences for patients. In addition to technical competence, pharmacists must maintain rigor, communication, compliance with procedures, and professional responsibilities in dynamic service situations.

One of the important characteristics of pharmaceutical jobs in hospitals is shift work. Pharmaceutical services must last for 24 hours so that the work schedule is divided into different periods. This system requires pharmaceutical personnel to adjust sleep patterns, rest times, social life, and service rhythms. Theoretically, shift work can be a job demand because it requires physical and psychological energy. However, the impact on well-being is not always the same for every worker. Adaptability, work experience, team support, and schedule management can change how shift demands are felt by individuals.

The work environment is also a relevant factor. The work environment in pharmaceutical services is not limited to the physical aspect. Relationships between employees, supervisor support,

communication, clarity of roles, sense of security, facilities, and organizational systems also determine the work experience. A supportive environment can make it easier for pharmaceutical personnel to carry out their duties, while an uncondusive environment can increase obstacles and energy requirements to complete work.

Work stress is placed as one of the mechanisms that can explain the relationship between working conditions and welfare. Stress arises when individuals assess the demands of work beyond the resources they have. In pharmaceutical services, stress can come from patient queues, demands for accuracy, coordination with other professions, administrative work, and serious consequences of mistakes. If it is continuous, stress can interfere with concentration, energy, work relationships, and well-being.

This research also places professionalism as a positive mediator. Professionalism reflects competence, ethics, responsibility, dedication, service orientation, and commitment to professional standards. Professionalism can be a personal resource because it helps pharmaceutical personnel maintain the meaning of work and a sense of achievement when facing demands. Thus, professionalism provides a different explanation from work stress. Stress describes the path of health impairment, while professionalism describes the path of motivational resource.

The research gap arises because most previous studies have used more than one mediator, especially work stress. Studies that integrate negative and positive mechanisms simultaneously are still limited, especially in pharmaceutical personnel. Research on doctors and nurses is also more dominant than research on pharmaceutical personnel. In addition, empirical evidence from hospitals in developing countries and local contexts in Indonesia still needs to be strengthened.

This study developed a dual mediation model with shift work and work environment as exogenous variables, work stress and professionalism as mediation variables, and welfare as endogenous variables. The purpose of the study was to examine the direct influence of shift work and work environment on work stress, professionalism, and welfare, as well as to examine the role of work stress and professionalism in explaining the indirect influence on the welfare of pharmaceutical personnel in hospitals throughout Kendari City.

2. Literature Review

Job Demands-Resources Theory or JD-R Theory is used as the main theory. This theory explains that every job has job demands and job resources. Job demands include aspects of work that require continuous physical, cognitive, social, or emotional effort. Job resources include aspects that help individuals achieve goals, reduce the impact of demands, and encourage growth and motivation. JD-R explains two main processes, namely the health impairment process and the motivational process.

Shift work is positioned as a job demand. Changes in working hours can disrupt rest time and demand adjustments to the rhythm of service. If these adjustments drain energy, shift work has the potential to increase stress and reduce well-being. However, demands do not always produce negative outcomes. The impact of shift work depends on the intensity of demands and the resources available to workers.

The work environment is positioned as a job resource because it includes organizational support, collegial relationships, facilities, communication, a sense of security, and clarity of roles. These resources help pharmacists control their work and carry out services more effectively. A supportive work environment can also strengthen professionalism because individuals acquire conditions that allow professional standards to be applied consistently.

Occupational Stress Theory explains stress as a response to demands that are considered beyond adaptability. In this study, work stress functions as a mediator in the health impairment pathway. Conceptually, shift work or an unsupportive work environment can increase stress. This pressure then has the potential to decrease well-being. The position of the mediator allows research to test whether the influence of working conditions on well-being takes place through changes in stress levels.

Professionalism does not only show technical skills. Professionalism also includes values, ethics, dedication, service orientation, autonomy, and compliance with professional standards. Within the framework of JD-R, professionalism is positioned as a personal resource. Pharmaceutical personnel with strong professionalism can maintain a sense of ability, meaning of work, and commitment to service. These resources can strengthen well-being even though individuals work in a service system that has high demands.

The concept of well-being in this study is in line with the positive psychology approach. Well-being includes positive emotions, engagement, relationships, meaning, and accomplishment. This approach is important because workers with low stress do not necessarily have high well-being. Well-being requires positive experiences, involvement, supportive relationships, meaning, and achievements. Therefore, the research model tests the path of reducing stress through stress as well as the path of

strengthening resources through professionalism.

3. Research Methods

3.1. Object, Time and Place

The research uses a quantitative approach with an explanatory design. The research objects are shift work, work environment, work stress, professionalism, and welfare of pharmaceutical personnel. The research was carried out on pharmaceutical personnel working at Bahteramas Hospital and Kendari City Hospital. The selection of the location is in accordance with the research focus on hospital pharmacy installations in Kendari City.

3.2. Data Collection Techniques

The research population consisted of pharmaceutical personnel at the research site. The sample amounted to 110 respondents and was determined using the saturated sample technique. Primary data were collected using a questionnaire. The instrument measured five main constructs, namely shift work, work environment, work stress, professionalism, and welfare. The characteristics of the respondents were used to provide an overview of the composition of the sample based on gender, age, and working period.

3.3. Data Analysis Techniques

The analysis was carried out using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS. The analysis stage included the evaluation of the measurement model and the structural model. The measurement model was evaluated through outer loading, Cronbach's alpha, composite reliability, Average Variance Extracted (AVE), and Heterotrait-Monotrait Ratio (HTMT). The structural model was evaluated through R-square, fit model, multicollinearity, effect size, path coefficient, and direct and indirect influence testing. The hypothesis was stated to be supported if the p-value was less than 0.05.

4. Results and Discussion

4.1. Research Results

A total of 110 respondents were used as the basis for the analysis. The composition of respondents was dominated by women as many as 93 people or 83.57 percent, while men as many as 17 people or 16.43 percent. Based on age, the largest group was in the range of 31 to 40 years as many as 44 people or 40 percent. The composition showed that most of the respondents were of productive age and had direct involvement in hospital pharmaceutical services.

Table 1. Characteristics of Respondents

Features	Category	Frequency	Percentage
Gender	Male	17	16,43%
Gender	Women	93	83,57%
Age	≤30 years old	27	24,54%
Age	31–40 years	44	40,00%
Age	41–50 years	28	25,45%
Age	>51 years old	11	10,00%

Source: Primary data, 2026.

The evaluation of the measurement model showed that the research indicators were able to reflect the measured constructs. All indicators had an outer loading above 0.70 and a p-value below 0.05. The strongest indicator in shift work was X1.3 with a loading of 0.940. In work stress, the Z1.4 indicator had the highest loading of 0.893. The strongest professionalism was reflected by Z2.3 with a loading of 0.915. In welfare, indicators Y1.3 and Y1.4 had a loading of 0.913 each.

The results of convergent reliability and validity showed that all constructs had Cronbach's alpha and composite reliability above 0.70 and AVE above 0.50. Thus, the instrument had adequate internal consistency and the construct was able to explain the variation in the indicator. The discriminant validity also met the criteria because the HTMT value between constructs was below 0.90.

Table 2. Reliability and Convergent Validity

Variabel	Cronbach's Alpha	rho_a	rho_c	AVE
Shift Work	0,783	1,214	0,849	0,654
Work Environment	0,750	0,752	0,889	0,800
Work Stress	0,875	0,907	0,914	0,726
Professionalism	0,880	0,895	0,926	0,806
Well-being	0,937	0,941	0,952	0,800

Source: Primary data processed using SmartPLS.

The explanatory ability of the model differs for each endogenous variable. The welfare r-square of 0.679 indicates that shift work, work environment, work stress, and professionalism together explain 67.9 percent of the variation in well-being. The r-square of professionalism of 0.317 indicates that shift work and work environment explain 31.7 percent of the variation in professionalism. The r-square of work stress is only 0.031 so that shift work and work environment have not been the main factors that explain the variation in work stress in the study sample.

Direct influence testing found three significant pathways. The work environment had a positive effect on professionalism with a coefficient of 0.557, t-statistic of 9.350, and a p-value of 0.000. The work environment also had a positive effect on welfare with a coefficient of 0.354, t-statistic of 4.946, and p-value of 0.000. Professionalism had a positive effect on welfare with a coefficient of 0.543, t-statistic of 7.694, and p-value of 0.000.

Table 3. Direct Effect Hypothesis Testing

Relationships	Coefficin	t-statistic	p-value	Verdict
Shift Work → Work Stress	0,167	1,562	0,121	Insignificant
Shift Work → Professionalism	0,075	0,963	0,338	Insignificant
Work Environment → Work Stress	-0,063	0,685	0,494	Insignificant
Work Environment → Professionalism	0,557	9,350	0,000	Signifikan
Shift Work → Wellbeing	0,095	0,988	0,325	Insignificant
Work Environment → Well-Being	0,354	4,946	0,000	Signifikan
Work Stress → Well-Being	-0,100	1,444	0,152	Insignificant
Professionalism → Well-being	0,543	7,694	0,000	Signifikan

Source: Primary data processed using SmartPLS.

4.2. Discussion

In general, the results of the study showed that the motivational pathway was stronger than the work pressure pathway. The work environment had a positive effect on professionalism and welfare, while professionalism had a positive effect on welfare. Shift work and work stress had not shown a significant effect on welfare. The pattern showed that the welfare of pharmacy staff at the two hospitals was more explained by supportive working conditions and professionalism strength than solely shift patterns or stress levels.

The effect of shift work on work stress has a positive coefficient of 0.167 but is not significant. The effect size value of 0.029 indicates a small effect. Descriptively, shift work is in the medium category with an average of 2.736, while work stress is in the low category with an average of 2.545. This condition shows that the shift variation experienced by respondents is not strong enough to produce a significant difference in stress. Pharmaceutical personnel can have the ability to adapt to schedules that have become a routine part of hospital services.

Shift work also did not have a significant effect on professionalism. The coefficient of 0.075 with a p-value of 0.338 showed that professionalism was relatively unchanged following the variation in shift work. Descriptive results showed that professionalism was in the high category with an average of 3.934. This shows that professional values, competence, ethics, and responsibilities can be maintained even though pharmacy personnel work different schedules.

The work environment had no significant effect on work stress with a coefficient of -0.063 and a p-value of 0.494. These findings suggest that improving the work environment did not automatically reduce stress in the study sample. Stress can be affected by other, more specific sources of stress, such as service demands, workload, time pressure, role conflicts, or individual factors. The low R-square of work stress of 0.031 supports the explanation that the two exogenous variables in the model explain only a small part of the stress variation.

In contrast, the work environment has a strong influence on professionalism. The coefficient of

0.557 indicates that the better the work environment, the stronger the professionalism of pharmaceutical personnel. Organizational support, working relationships, sense of security, facilities, communication, and clarity of roles can create conditions that allow pharmaceutical personnel to consistently implement service standards. These findings are in accordance with the motivational process pathway in JD-R because job resources strengthen the positive resources of workers.

Shift work had no significant effect on welfare with a coefficient of 0.095 and a p-value of 0.325. These results show that the existence of a shift system is not enough to explain the high and low level of well-being. In the context of hospitals, shifts are part of a structured service system. If pharmacists have adapted and received adequate support, shift schedules do not necessarily result in a decrease in positive emotions, involvement, relationships, meaning, or achievements.

The work environment has a positive and significant effect on well-being with a coefficient of 0.354. These findings show that well-being can improve when pharmacists work in conditions that support the performance of their duties. A positive work environment reduces barriers, strengthens social support, increases a sense of security, and helps workers carry out their roles more purposefully. Thus, organizational interventions in the work environment have direct practical relevance to well-being.

Work stress has a negative coefficient on well-being of -0.100, but the relationship is not significant with a p-value of 0.152. The negative direction is in line with theoretical expectations, but the strength of the relationship in the sample is not enough to support the hypothesis. Descriptively low work stress may limit the variation needed to produce a strong relationship with well-being. These findings also confirm that well-being is not only determined by the presence or absence of stress.

Professionalism has the greatest positive influence on well-being with a coefficient of 0.543. Professionalism helps pharmaceutical workers maintain a sense of ability, responsibility, work meaning, and achievement. In the context of health services, the ability to carry out work according to professional standards can provide positive experiences that support well-being. These findings strengthen the position of professionalism as a personal resource in the expanded JD-R model.

The mediation analysis showed that work stress did not mediate the influence of shift work or the work environment on well-being. The absence of mediation occurred because the pathway to stress and the stress pathway to well-being were not significant. Thus, the data did not support the health impairment pathway as the main mechanism in this sample. Management cannot assume that any change in shift work or work environment will affect well-being through changes in stress.

Professionalism did not mediate the effect of shift work on well-being. The indirect effect of 0.040 with a p-value of 0.333 was not significant. Although professionalism had a strong influence on well-being, shift work was not shown to affect professionalism. That is, the mediator had a relationship with the outcome but the initial variable was not strong enough to move the mediator.

In contrast to this path, professionalism has been shown to partially mediate the influence of the work environment on well-being. The indirect effect of 0.302 indicates that the work environment improves well-being not only directly, but also through strengthening professionalism. Since the direct influence of the work environment on well-being remains significant, professionalism only partially explains the mechanism of the relationship.

The findings of partial mediation make an important contribution to the research model. The work environment can be understood as a job resource that produces two benefits. First, the work environment has a direct impact on work experience and well-being. Second, the work environment creates conditions that strengthen professionalism as a personal resource. Professionalism then improves well-being through a sense of ability, meaning, responsibility, and achievement.

The practical implication is that hospital management needs to separate stress management strategies and well-being improvement strategies. Improving the work environment remains important, but it cannot be assumed to automatically reduce stress. For stress, hospitals need to identify more specific sources of stress. For well-being, the results of the research provide a stronger basis for strengthening the work environment and professionalism through training, coaching, service standards, clear division of duties, effective communication, and appreciation for professional performance.

Theoretically, the results of the study are more supportive of the motivational process than the health impairment process. Job resources in the form of work environment and personal resources in the form of professionalism have a clearer role in explaining well-being. Subsequent research can test other mediators such as work engagement, psychological capital, or perceived professional support. For stress pathways, more specific work demands constructs can be added so that the model has a higher explanatory ability.

The results of the R-square also provide important information about the focus of model development. The value of 0.679 on well-being shows that the combination of shift work, work environment, work stress, and professionalism has a considerable ability to explain the main outcome.

However, these abilities are not evenly distributed across all endogenous variables. Professionalism has an R-square of 0.317, while work stress is only 0.031. This difference shows that the model is more successful in explaining how work resources shape professionalism than in explaining how work demands form stress. Therefore, the interpretation of the model needs to emphasize the power differences between the two pathways and not conclude that all JD-R mechanisms have the same support.

Respondent characteristics also need to be considered when reading the results of the study. Most of the respondents were women and the largest age group was in the range of 31 to 40 years. This composition describes pharmacists who are of productive age and have been involved in hospital service routines. Although demographic characteristics are not tested as moderators in the model, they are important as an empirical context. The results describe the condition of the sample at two hospitals and cannot be automatically generalized to all pharmacists with different organizational characteristics.

The quality of the measurement model supports the interpretation of structural relationships. All indicators have an outer loading above 0.70 and are significant. The AVE value of the entire construct is also above 0.50. Thus, the indicator has adequate ability to reflect its constructs. HTMT values that are below 0.90 indicate that the constructs used can be empirically distinguished. This condition is important because shift work, work environment, work stress, professionalism, and welfare are interrelated concepts but must still be measured as different constructs so that structural path testing can be interpreted appropriately.

In the construct of professionalism, the Z2.3 indicator had the highest outer loading of 0.915. These results show that the indicator is a strong representation of professionalism in the research data. Descriptively, professionalism is in the high category, while professional decision autonomy is even in the very high category with an average of 4.224. This pattern helps explain why professionalism remains strong even though shift work is in the medium category. Professionalism seems to be more related to professional identity, standards, competencies, and autonomy than changes in daily work schedules.

In the welfare construct, indicators Y1.3 and Y1.4 have the highest outer loading, each of 0.913. The strength of the welfare indicators shows that the research outcomes can be consistently reflected by the indicators used. When professionalism has an influence of 0.543 on welfare, the relationship can be read as evidence that the experience of carrying out the profession well is related to the positive condition of workers. These findings expand the discussion of welfare from just trying to reduce stress to trying to build conditions that allow workers to feel capable and meaningful in carrying out their roles.

The difference between the influence of the work environment on stress and on professionalism also has managerial significance. The work environment has not been shown to significantly reduce stress, but the work environment clearly strengthens professionalism. This means that an organizational intervention can produce benefits through certain mechanisms without having to produce changes in all psychological outcomes. Improved facilities, communication, working relationships, role clarity, and organizational support can help pharmacists better implement professional standards. However, if management's goal is specifically to reduce stress, the organization needs to first identify the most dominant source of stress.

The finding that professionalism mediates the influence of the work environment on well-being provides a basis for linking organizational policies to individual development. Hospitals can improve the work environment while building systems that support professionalism through coaching, training, clarity of responsibility, strengthening service standards, effective communication, and appreciation of professional behavior. The strategy is in line with the model's results because the work environment has a direct influence on well-being and an indirect influence through professionalism. Thus, policies are not only directed at work comfort, but also at conditions that help pharmacists carry out their professional identities consistently.

4.3. Relevance to Research Objectives

The results of the study answered the research objectives in an integrated manner. Of the eight direct relationships, three relationships received empirical support, namely the work environment for professionalism, the work environment for welfare, and professionalism for welfare. In the mediation test, professionalism became a relevant mechanism in the relationship between the work environment and welfare, while work stress did not play a mediator role. Thus, the research gap regarding the use of two mediators can be answered through evidence that the two mediators do not work with the same strength. Professionalism makes a stronger contribution in explaining the welfare of pharmaceutical personnel in the context of this study.

5. Conclusion

The study concluded that the welfare of pharmaceutical workers at Bahteramas Hospital and Kendari City Hospital was more strongly explained by the work environment and professionalism than

shift work and work stress. The work environment had a positive effect on professionalism and welfare, while professionalism had a positive effect on welfare. Shift work had no significant effect on work stress, professionalism, or welfare. The work environment had no significant effect on work stress and work stress had no significant effect on welfare. Work stress did not mediate the effect of shift work and the work environment on welfare. Professionalism also did not mediate the effect of shift work, but partially mediated the influence of the work environment on welfare. The model explained 67.9 percent of the variation in welfare. The findings confirm that hospital management needs to prioritize improving the work environment and strengthening professionalism, while identifying more specific sources of stress. Future research can expand the model with job demands and other personal resources to explain stress and well-being more comprehensively.

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