

# Relationships between Work Engagement and Professional Ethics with Organizational Intelligence in Healthcare Workers: Mediated by Organizational Support

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## Abstract

**Background:** Healthcare workers are in close contact with patients and have serious responsibilities for the health and life of people. Moreover, dissatisfaction of employees with their jobs has a negative impact on the quality of services and ultimately leads to dissatisfaction of patients.

**Objectives:** The present study aimed to investigate the relationship between work engagement and professional ethics with organizational intelligence in healthcare workers through the mediating role of organizational support.

**Methods:** The statistical population included all healthcare workers of Ahvaz (Iran) in 2022, 137 of whom were selected through convenience sampling. In this descriptive-correlational study, the Pearson correlation coefficient and mean structural equation modeling were employed for data analysis. The research instruments included the Utrecht Work Engagement Scale, the Professional Ethics Questionnaire, the Organizational Intelligence Questionnaire, and the Survey of Perceived Organizational Support.

**Results:** According to the findings, there was a positive relationship between professional ethics and organizational support ( $\beta = 0.27, P = 0.001$ ). There was a positive relationship between organizational intelligence and work engagement in healthcare workers ( $\beta = 0.22, P = 0.003$ ). There was also a direct relationship between organizational intelligence and organizational support ( $\beta = 0.51, P = 0.001$ ), and a direct relationship between organizational support and work engagement ( $\beta = 0.35, P = 0.001$ ). There was an indirect relationship between professional ethics and work engagement ( $\beta = 0.05, P = 0.002$ ) as well as organizational intelligence and work engagement ( $\beta = 0.10, P = 0.001$ ) mediated by organizational support.

**Conclusion:** The final model had a good fit. The present study's results should be considered an essential step toward identifying the factors affecting the job performance of healthcare workers.

**Keywords:** Work Engagement, Professional Ethics, Intelligence, Organizational Support, Healthcare

## 1. Background

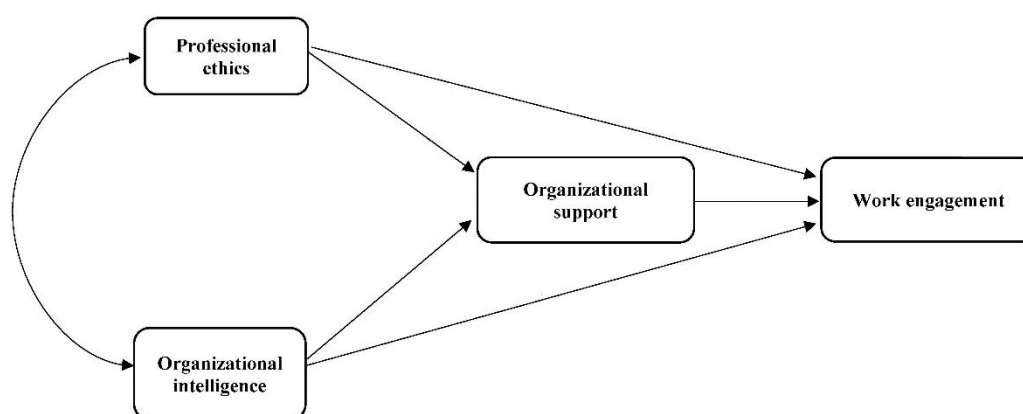
Apart from providing an income, employment fulfills numerous basic human needs such as social connections, self-worth, self-confidence, and personal adequacy or competence.<sup>1</sup> However, many jobs cause mental stress.<sup>2,3</sup> Undoubtedly, managers are not merely responsible for increasing productivity and considering the material resources of an organization, and effective management is impossible without considering human factors and the psychological needs of employees. Management of hospitals and health centers is no exception, and managers should strive to formulate programs to improve mental health and prevent organizational disruptions of employees.<sup>4</sup> According to the report of Matin et al.,<sup>5</sup> healthcare workers are in close contact with other people and have serious health and life responsibilities. Constant contact with patients, incurable diseases, and death make nursing a stressful occupation.

All hospital departments have punctual, caring, and interested employees when they start to work. However, they feel burned out and may eventually decide to quit their jobs due to their numerous hardships and workplace anxiety.<sup>6</sup> Hence, these employees need attention. Currently, with the COVID-19 pandemic, providing care to healthcare workers has been prioritized, and evaluation of their work engagement is crucial.<sup>7,8</sup> With the general tendency towards positive psychology, work engagement known as the opposite concept to work burnout is a response to long-term work-related stress, which manifests as a loss of resources, a negative attitude towards work, and lower performance.<sup>9</sup> Due to their important responsibility in prevention, care, and treatment, healthcare organizations are essential to society, and the dissatisfaction of their employees with their jobs will adversely affect service quality and ultimately lead to dissatisfied patients.<sup>10</sup>

Attention to the opinions and demands of employees is attention to healthcare. High burnout in nurses can be attributed to a high workload, long working hours, insufficient human resources, constant contact with patients and their deaths, rotational shifts, and conflicts with colleagues.<sup>11</sup> Therefore, it is vital to consider the factors for improving their performance and work engagement. However, some researchers have pointed up the stressful working conditions in hospitals.<sup>12,13</sup> Gebeyehu and Zeleke<sup>12</sup> reported that the prevalence of stress is high among healthcare professionals working in public health care. At the same time, medical occupations call for interested, energetic, and engaged people. These people are fully immersed in their jobs and exercise due diligence in their responsibilities. They have a sense of strong and effective communication and consider themselves capable of fulfilling their duties and maintaining their professional ethics.<sup>14</sup>

This study aims to analyze some of the various factors of work engagement among nurses, one of which is professional ethics considered as a basic issue in all societies. Unfortunately, the current Iranian society does not pay sufficient attention to professional ethics. Primarily, professional ethics is a kind of knowledge and wisdom, which is not merely theoretical and unrelated to objective issues, but applied knowledge.<sup>15</sup> Professional ethics, which means respect for the rights of people in a profession, extends beyond law and professional regulations. It is much broader than law, for it does not cover many ethical considerations.<sup>16,17</sup>

Organizational intelligence, another factor of work engagement in healthcare workers, is arguably a mental capacity with the components that affect all aspects of routine life. Known as a theoretical concept, organizational intelligence is very important in organizational theories.<sup>18</sup> Researchers still consider the term a vague topic in organizational development, for they have yet to present a single theory that deals with it. In addition to organizational intelligence, another factor of work engagement in employees is organizational support.<sup>19</sup> Organizational support deals with many organizational variables such as a person's relationships with their supervisors or bonuses and create a safe and positive environment that leads to organizational loyalty.<sup>20</sup> People who positively perceive organizational support will intensify their efforts. A greater perception of organizational support by employees will improve their performance and efficiency.<sup>21</sup> Organizational perception reduces work pressure and the tendency to quit jobs. Supportive actions by leaders and the organizational atmosphere can create perceived support.<sup>22</sup> Employees who experience a great deal of organizational support feel that they should contribute to the organization with appropriate behaviors and attitudes.<sup>23</sup> This is to bring their actions in line with the interests of their organization and thereby compensate the organization for its support. Evaluating the relationship between work engagement and professional ethics with organizational intelligence in healthcare workers is one of the most important innovations of this study.



**Figure 1.** The Conceptual Model of the Research.

## 2. Objectives

Therefore, based on the issues outlined above, the present study aimed to investigate the relationship between work engagement and professional ethics with organizational intelligence in healthcare workers through the mediating role of organizational support. The conceptual model of the research has been presented in Figure 1.

## 3. Methods

The statistical population of this path analysis correlation

study included all healthcare workers of Ahvaz (Iran) in 2022. The convenience sampling method was employed to select the health centers of Ahvaz to explain the research rationale to managers and obtain their consent followed by distributing questionnaires among employees. Finally, 137 employees who fully completed the questionnaires were included in the study. Given the number of research variables, we selected 137 healthcare workers as the research sample to test the proposed model and analyze the research hypotheses. The inclusion

criteria of the research included the age range between 20-50 years and not having mental disorders. The exclusion criteria also included not answering all the questions and unwillingness to continue cooperation.

### 3.1. Research Instruments

#### 3.1.1. The Utrecht Work Engagement Scale (UWES)

This scale was developed by Schaufeli et al.<sup>24</sup> UWES has 17 items in three dimensions: vigor (6 items), dedication (5 items), and absorption (6 items). Answers are scored on a five-point Likert scale (ranging from “5” for “strongly agree” to “1” for “strongly disagree”). This questionnaire has a minimum score of 17 and a maximum score of 85 with scores closer to 85 representing a higher level of work engagement.<sup>24</sup> Torabinia et al.<sup>25</sup> reported a high degree of test-retest reliability ( $r = 0.89$ ) for the UWES.

#### 3.1.2. The Professional Ethics Questionnaire

This questionnaire was designed by Cadozier.<sup>26</sup> The Professional Ethics Questionnaire contains 16 items for measuring professional ethics characteristics based on responsibility, justice and fairness, loyalty, respect, and sympathy towards others. This questionnaire is scored on a Likert scale from very high (5) to very low (1) levels. It has a minimum score of 16 and a maximum score of 80 with higher scores representing greater professional ethics.<sup>26</sup> Rasouli et al.,<sup>27</sup> reported a reliability of 0.86 based on Cronbach's Alpha coefficient for the questionnaire.

#### 3.1.3. The Organizational Intelligence Questionnaire

This instrument was developed by Albrecht.<sup>28</sup> The Organizational Intelligence Questionnaire includes 49 items and 7 subscales. The items are scored on a five-point scale ranging from “completely agree” to “completely disagree”

with respective scores of 1 to 5 with total scores within 49-245. Higher scores represent higher organizational intelligence.<sup>28</sup> The reliability of SWBS was reported 0.86 using Cronbach's alpha.<sup>29</sup>

#### 3.1.4. The Survey of Perceived Organizational Support

This survey was designed by Eisenberger et al.<sup>30</sup> The Survey of Perceived Organizational Support includes eight questions for evaluating perceived organizational support. To avoid response bias, some questions are negative, whereas some others are positive. The items are scored on a five-point Likert scale ranging from “1” (never) to “5” (always). The total score is obtained by aggregating all scores, and the questionnaire has a minimum score of eight and a maximum score of 40 with scores closer to 40 representing a higher level of organizational support.<sup>30</sup> Rasouli et al.<sup>27</sup> reported a Cronbach's alpha of 0.82 for this questionnaire.

### 3.2. Data Analysis

The proposed model was evaluated through path analysis in AMOS and maximum likelihood estimation. It contains a total of four variables with work engagement as an endogenous variable (criterion), professional ethics and organizational intelligence as exogenous variables (predictor), and organizational support as a mediating variable. Software such as SPSS-27 and AMOS-25 was used to analyze the research data.

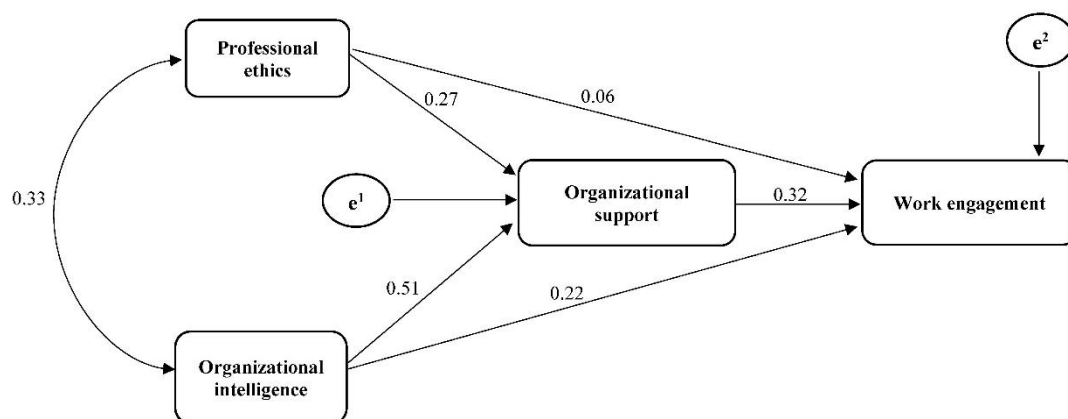
## 4. Results

The participants in this study included 137 healthcare workers with an average age of  $36.42 \pm 5.65$  years. In terms of gender, 86 (62.77%) participants were alive and 51 (37.23%) were male. Table 1 presents descriptive statistics

**Table 1.** Mean, Standard Deviation (SD), Skewness, Kurtosis, and Correlation between Research Variables

Variables	Mean $\pm$ SD	1	2	3	4	Skewness	Kurtosis
1- Work engagement	44.16 $\pm$ 10.46	1				0.15	1.21
2- Professional ethics	46.50 $\pm$ 11.65	0.41**	1			0.31	1.58
3- Organizational intelligence	103.33 $\pm$ 31.72	0.37**	0.57**	1		0.15	1.09
4- Organizational support	27.12 $\pm$ 5.34	0.46**	0.44**	0.51**	1	0.33	1.13

\*\* $P < 0.01$



**Figure 2.** The initial model of the mediating role of organizational support in the relationship between work engagement and professional ethics with organizational intelligence.

statistics including the mean, standard deviation, skewness, kurtosis, and correlation coefficients between the research variables. The means and standard deviations were 44.19 and 10.46 for work engagement; 46.50 and 11.65 for professional ethics; 103.33 and 31.72 for organizational intelligence; and 27.12 and 5.34 for organizational support, respectively. Moreover, the correlation coefficients between all research variables were significant. Based on the skewness and kurtosis data, the data distribution was normal. Figure 2 demonstrates a preliminary proposed model for explaining work engagement based on professional ethics, organizational intelligence, and organizational support.

A combination of goodness-of-fit indices and Root Mean Square Error of Approximation (RMSEA) were employed to determine the proposed model's goodness of fit with the data. According to the data in Table 2, since all the fit indices of the proposed model were not optimal, the model was modified by removing the path of professional ethics to work engagement. This resulted in optimal fit indicators. Figure 3 depicts the final model. According to the results, all fit indices such as chi-square ( $\chi^2$ ), normalized chi-square index ( $\chi^2/df$ ), Normalized Fit Index (NFI),

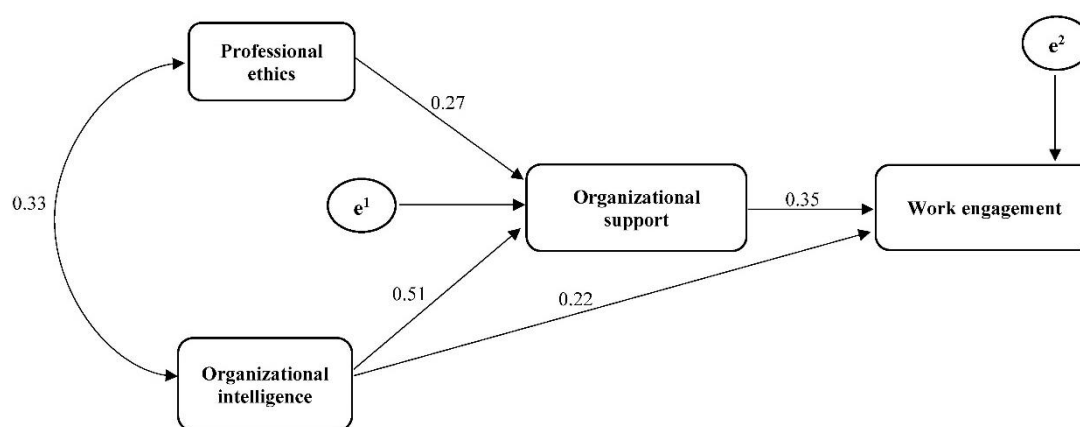
Comparative Fit Index (CFI), Incremental Fit Index (IFI), Tucker–Lewis Index (TLI), and RMSEA confirmed the good fit of the final model with data.

Table 3 reports the estimates of direct and indirect path coefficients, suggesting no direct correlations between professional ethics and work engagement in healthcare workers but a direct correlation between professional ethics and organizational support ( $\beta = 0.27$ ,  $P = 0.001$ ). There was also a direct correlation between organizational intelligence and work engagement in healthcare workers ( $\beta = 0.22$ ,  $P = 0.003$ ), a direct correlation between organizational intelligence and organizational support ( $\beta = 0.51$ ,  $P = 0.001$ ), and a direct correlation between organizational support and work engagement ( $\beta = 0.35$ ,  $P = 0.001$ ).

The results showed an indirect correlation between professional ethics and work engagement in healthcare workers when mediated by organizational support ( $\beta = 0.055$ ,  $P = 0.002$ ). There was also an indirect correlation between organizational intelligence and work engagement with the mediation of organizational support  $\beta = 0.104$ , ( $P < 0.001$ ) (Table 4).

**Table 2.** Fit Indicators in the Initial and Final Models

Fit indicators	$\chi^2$	df	( $\chi^2/df$ )	IFI	TLI	CFI	NFI	RMSEA
Initial model	-	-	-	-	-	0.79	0.83	0.397
Final model	0.95	1	0.95	0.99	0.99	0.99	0.99	0.001



**Figure 3.** The final model of the mediating role of organizational support in the relationship between work engagement and professional ethics with organizational intelligence.

**Table 3.** Path Coefficients of Direct Relationship between Research Variables in the Initial and Final Models

Path	Initial model		Final model	
	$\beta$	P	$\beta$	P
Professional ethics → Work engagement	0.06	0.330	-	-
Professional ethics → Organizational support	0.27	0.001	0.27	0.001
Organizational intelligence → Work engagement	0.22	0.004	0.22	0.003
Organizational intelligence → Organizational support	0.51	0.001	0.51	0.001
Organizational support → Work engagement	0.32	0.001	0.35	0.001

**Table 4.** Estimation of Indirect Paths in the Final Model

Paths	Initial model		Final model	
	$\beta$	P	$\beta$	P
Professional ethics to work engagement through the mediating role of organizational support	0.051	0.003	0.055	0.002
Organizational intelligence to work engagement through the mediating role of organizational support	0.097	0.002	0.104	0.001

## 5. Discussion

This study aimed to investigate the relationship between work engagement and professional ethics with organizational intelligence in healthcare workers through the mediating role of organizational support. The results indicated no significant correlations between professional ethics and work engagement among employees. This finding is inconsistent with the results of Sadri Damirchi et al.<sup>9</sup> and Ghasemzadeh Alishahi et al.<sup>31</sup> Although this study used path analysis for checking the hypotheses, previous studies indicated that the correlation between professional ethics and work engagement was significant in accordance with Pearson's test. Given the mediating variable of the proposed model, this direct correlation was insignificant and organizational support mediated the entire contribution of the correlation between professional ethics and work engagement. To explain this finding, due to their interest in their job and treating patients in general, healthcare workers try to have more interactions with colleagues and managers in hospitals and health centers to better perform their duties.<sup>31</sup> In addition to reducing negative organizational behaviors, the expression of opinions on organizational issues can inform managers about neglected strategic areas in organizational development. In fact, a person interested in and dedicated to their work is always sensitive to organizational problems and worried about their solutions. This concern and sense of responsibility can inspire empathy, companionship, and responsibility towards others.<sup>9</sup>

The results suggest a significant positive correlation of organizational support with professional ethics and work engagement, and that mutual support in the hospital is important to raising the mental perception and expectations of employees, which affects their performance. This result is consistent with similar research findings.<sup>32</sup> To explain this finding, organizational support is a key factor in promoting the self-efficacy and ethical behavior of employees. In addition to reducing organizational pessimism, organizational support increases the efficiency of activities and improves organizational accountability. A high level of organizational support enables employees to behave fairly towards their colleagues and act as equals in their interactions. This greatly reduces differences and conflicts between employees and negative attitudes such as frustration, anger, mistrust, and nervousness. Organizational trust affects the establishment and promotion of professional behavior and values, fostering acceptance and practice of ethical responsibilities and social norms as part of work processes. As a job resource, organizational support has a positive correlation with work engagement and can positively affect the work engagement of healthcare workers.<sup>2</sup> Since organizational support significantly changes the attitude of healthcare workers towards their job, it brings positive organizational behavior. If they feel that their commitment and perseverance towards their

jobs are noticed and supported, healthcare workers will show more interest in their jobs. These individuals are more satisfied with their jobs, have a sense of organizational commitment, and are less inclined to quit.<sup>21</sup> Some occupational and personal resources in the workplace create work engagement in employees, which can then positively affect the workplace. Resources such as support from colleagues and managers, feedback, variety of tasks, independence, and learning opportunities promote the work engagement of healthcare workers.<sup>22</sup>

There was a significant positive correlation between organizational intelligence with work engagement and organizational support in healthcare workers. This finding is consistent with the results of Badwan et al.<sup>32</sup> In today's turbulent and fast-paced world, highly intelligent people are successful and efficient. They use their endowed intelligence to overcome their life problems. This subject gains more importance by accepting that in addition to the great and creative resources of intelligent human beings, the organizational performance also factors in intelligent mechanical tools. Therefore, in today's complex organizations, organizational intelligence results from active human intelligence and artificial intelligence. Undoubtedly, organizational managers can only promote the dynamism and efficiency of their organizations using these two streams of intelligence. Employees with organizational intelligence are popular with managers and receive more support, making them more satisfied and interested in their work. Healthcare workers are extensively involved with patient care.<sup>18</sup> Night work, long shifts, and unpredictable activities reduce their organizational support, which degrades the physical performance and capacity of nurses and makes errors more likely. Hence, organizational intelligence in employees will improve organizational support.

There was an indirect correlation between professional ethics and work engagement mediated by organizational support. There was also an indirect correlation between organizational intelligence and work engagement of healthcare workers mediated by organizational support. In the direct correlation, there were no significant correlations between professional ethics and work engagement, whereas in the indirect hypothesis, professional ethics was related to greater work eagerness, which first promotes organizational support in healthcare workers. Since the majority of healthcare workers experience extensive burnout, especially during the COVID-19 pandemic, any comprehensive intervention program in the psycho-social factors of the workplace to improve professional ethics, work engagement, and organizational support can help promote the quality of medical services. Thus, organizational support has a mediating role in the correlation between professional ethics and work engagement. According to the results, organizational intelligence in healthcare workers increased their perception of



organizational support and promoted work engagement. Furthermore, the fear of disease, death, financial problems, and job loss can also be added to the list of factors that reduce organizational support and work eagerness in healthcare workers, whereas organizational intelligence is associated with toleration of hard-working conditions and can provide organizational support and enhance work engagement in healthcare workers. Therefore, organizational support has a mediating role in the correlation between organizational intelligence and work engagement.

### 5.1. Study Limitations

Since this study was conducted on healthcare workers in Ahvaz, the results may not be applicable to healthcare workers in other cities with different cultures and cultural-secondary characteristics. In addition, the use of the self-report questionnaire was another limitation.

## 6. Conclusion

According to the results of the present research, the model had a good fit. Organizational support had a mediating role in the relationship between work engagement and professional ethics with organizational intelligence in healthcare workers. The present study's results should be considered as an essential step toward identifying the factors affecting the job performance of healthcare workers. In recent years, the COVID-19 pandemic has led to burnout of healthcare workers. Therefore, psycho-social intervention in the workplace for promoting professional ethics and consequently, work engagement, can help improve medical services.

### Research Highlights

#### What Is Already Known?

High burnout in nurses can be attributed to high workload, long working hours, insufficient human resources, constant contact with patients and their deaths, and rotational shifts. Professional ethics is a kind of knowledge and wisdom, that is not merely theoretical and unrelated to objective issues, but applied knowledge. Organizational intelligence, another factor of work engagement in healthcare workers, is arguably a mental capacity with the components that affect all aspects of routine life. In addition to organizational intelligence, another factor of work engagement in employees is organizational support.

#### What Does This Study Add?

This study showed that there was a positive relationship between professional ethics and organizational support. There was a positive relationship between organizational intelligence and work engagement in healthcare workers. There was a direct relationship between organizational intelligence and organizational support. There was also a direct relationship between organizational support and work engagement. We found that organizational support had a mediating role in the relationship between work engagement and professional ethics with organizational intelligence in healthcare workers.

### Author Contributions

Conceptualization: LA; Data curation: LA; Formal Analysis: FSM; Funding acquisition: LA; Investigation: LA, FSM; Methodology: LA and FSM; Project administration: FSM; Resources: LA; Software: FSM; Supervision: FSM; Validation: LA; Visualization: LA and FSM; Writing original draft: LA and FSM; Writing review & editing: LA and FSM.

### Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

### Ethical Approval

The Ethics Committee of Islamic Azad University- Ahvaz Branch reviewed and approved the study protocol under code IR.IAU.AHVAZ.REC.1401.152.

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