

# Correlation between Moral Intelligence and Performance of Nurses with Patient Satisfaction from Nursing Care

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## ABSTRACT

**Background:** The satisfaction of persons who need care is an important issue that has always been considered in providing care, and indicates the access to desired quality of the cares. This study was carried out to determine the relationship between moral intelligence and nurses' performance with patient's satisfaction from nursing cares.

**Methods:** The research is a cross-sectional-analytic study. 260 nurses and 260 patients from the educational and medical centres of Guilan University of medical science participated in the study through stratified random sampling method in 2018. Demographic questionnaires, Lennick and Kiel moral intelligence, work performance and patient satisfaction were used in order to collect data. Then, the data were entered into SPSS20 and analysed by descriptive tests (average, standard deviation, percent and amplitude) and analytic statistics.

**Results:** The findings indicate that the moral intelligence of the most nurses was so great, nurses' work performance was proper and patient satisfaction from nursing cares was moderate. There wasn't a positive and significant relationship between moral intelligence and performance of nurses and patient satisfaction. But a positive and significant relationship was observed between nurse's education level ( $p=0.05$ ), hospital ( $p=0.008$ ) and patient satisfaction.

**Conclusion:** Based on obtained results, it seems that paying attention to some factors such as moral intelligence improvement and planning for more proper work performance to provide nursing services with higher quality and improving the conditions and factors affecting the providing higher quality nursing services is necessary. Also, some factors such as nurse's knowledge and education level can affect the improvement of patient satisfaction from nursing services and as a result improvement and progress of health care system function.

**Key words:** Intelligence, Work performance, Patient satisfaction, Nursing care

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## INTRODUCTION

The satisfaction of persons who need care is an important issue that has always been considered in providing care [1]. Since the 1190s, patient satisfaction has been considered as an important factor of the service quality in evaluating the nurses' performance in the United States. Since 2011, the ministry of health and medical education of our country, in line with its principal mission, ordered to all hospitals to measure patient satisfaction alternatively and perform some necessary instructions to increase patient satisfaction [2].

Patient satisfaction can be interpreted as receiving necessary medications and cares and also satisfaction from providing services by staffs and whole system during hospitalization and patient, willing to return to the centre, if it is necessary and recommending the centre to the others [3]. Patients' satisfaction affected by different factors, including quality of nursing care, physical, physiological, social factors, and moral issues.

Satisfaction is a mental and unique phenomenon that can be affected by some factors such as nursing care manner, patient's past experience concerning professional care and necessary instructions, trust between patient and personnel and etc. [2]. The ultimate goal of nurse is providing high quality care to patients. In other words, high quality care is the right of all patients and the duty of all caring nurses [4].

Patients' satisfaction is defined as patient reaction to remarkable aspects of hospital cares [5]. Since a nurse provides the highest level of cares related to treatment and improvement, the satisfaction of patients who received the cures indicates the level of nursing care quality (work performance) [6]. Nurses' work performance is defined as an effective activity which influences activities and duties related to cure for patient [7]. Nurses are one of the principal pillars in health care organizations, because their inappropriate performance leads to irreparable results due to their vital role in the patients' improvement [8]. Attention to work performance of nursing staffs including nurses is one of the managers and authorities' concerns in the health system. Nurses' performance, in turn, is human and worthy and the quality of the provided cares greatly depends on the manner of nurses' performance.

Nowadays, the nursing profession is developing in all societies and moral issues are one of the most important discussions in nurses' professional performance [9]. Many human behaviours and performances are rooted in moral principles and values. Moral intelligence is one of the aspects of intelligence as a new concept which can provide a framework for human proper performance and considered as a predictor of behaviour [8].

The concept of moral intelligence was first introduced by Burba. In his point of view, the concept of moral intelligence is indicative of the capacity and ability of understanding and taking the correct form incorrectly and having strong and profound moral opinions and beliefs and proper behaviour. Burba discusses seven pivotal principals for moral intelligence, including sympathy, consciousness, self-control, regard, and respect, patience and forbearance and justice [10]. Burba's approach in line with the moral intelligence improvement is based on three concepts: (1) the ability to identify correct from incorrect, (2) create and preserve strong moral beliefs, (3) the tendency to act to the beliefs in a decent manner [8].

The role of moral intelligence and its importance is so vital and significant in occupations related to medicine and nursing field which deal directly with people and their lives [9]. Nursing performance can be considered as a clear manifestation of moral performance.

Human improvement is ultimate and principal aim of nursing profession and this is only possible through scientific and moral cares. The development and enrichment of moral intelligence is vital and significant in organizational activities and performances [10]. People with high moral intelligence are trying to act according to moral principles [11]. The nurses with high moral intelligence can guarantee position of hospitals through their optimization and making sound and on the other hand, they can act more effective in communication with their colleagues or other patients.

There are different researches concerning the study of patient's satisfaction of nursing services and the factors which affect it. Jannati *et al.* study that was done in order to identify the level of patients' satisfaction from nursing

cares at the governmental hospitals in Behshahr indicates that only 3% of the people were satisfied from provided nursing services completely. 20% of the patients were satisfied moderately and 77% were dissatisfied [12]. The study of Sadeghi *et al.* which was done in order to identify the relationship between moral intelligence and patients' satisfaction from nursing cares indicates that most of the nurses have proper moral intelligence ( $76/68 \pm 6/55$ ) and the mean patients' satisfaction from nursing cares was reported. The study also indicates a positive and significant relationship between moral intelligence and patients' satisfaction from nursing cares ( $p < 0/01$ ) [13].

The studies done concerning the importance of care behaviours indicate that the nursing cares is not understood in different societies equally. Some people consider difference in nurse understanding from care behaviours due to cultural differences. Therefore, regarding to the importance of the care as the most important part of nursing practice and on the other hand, differences in understanding of care behaviours in different cultures and researchers' disagreement concerning the explanation of the issue, it seems necessary to consider patients' satisfaction as an essential factor in the study of the quality of the care in our nursing community [14].

Regarding to the few researches about the relationship between moral intelligence, work performance and patients' satisfaction from nursing cares and the significant role of nurses' moral performance in the quality of provided care, patients' improvement, achievement to health goals and patients' satisfaction and the importance of nurses' moral intelligence as a moral guidance for their performance, researchers decided to study the relationship between moral intelligence, work performance and patients' satisfaction from nursing cares in order to develop quality of nursing cares as the important members of health care system.

#### METHOD OF STUDY

The research is a correlational and cross-sectional analytic study which was done in order to identify the relationship between moral intelligence, work performance and patients' satisfaction from nursing cares in medical education centres of Rasht in 2018. The employed nurses (1600 nurses based on the study of Paryad *et al.* [15]) and patients hospitalized in six selective hospitals affiliated to Guilan University of medical science in Rasht (Heshmat, Razi, Pour Sina, Velayt, Amiralmomenin, Alzahra) constitute the research population. Children hospital was excluded from the study because the researcher must ask the children's mother in order to study the satisfaction.

The sample size based on reliability formula and robustness test was determined 95% and 90%, respectively through stratified random sampling and based on correlation coefficient between the aspects of moral intelligence and patients' satisfaction equal to 266 people in the study of Sadeghi *et al.* (Equation 1) [13]

$$n = \left( \frac{1.96 + 1.28}{0.2} \right)^2 + 3 = \left( \frac{3.24}{0.2} \right)^2 = 262.5 + 3 \cong 266$$

(1)

According to the number of nurses who employed in the hospital, a determined share was allocated to each hospital per the number of employed nurses. And the sample size of the ward compared to the sample size of the centre was determined based on the number of the nurses of each ward. According to the number of the nurses, the patients were selected through sampling and the patients who were under care of selected nurses participated in the study.

The inclusion criteria in the study for nurses and patients include: having at least a bachelor's degree in nursing for nurses and at least three days hospitalization in related ward, having at least 18 years old and the ability of writing and reading for patients [13] and the criteria of exclusion from the study include the unwillingness to answer the questions. Four questionnaires were used in the study in order to collect data. The first part includes nurses' demographic data (age, gender, education degree and career experience) and patients' questionnaire (age, gender and education degree).

Lennick and Kiel moral intelligence questionnaire including 40 questions was used in order to evaluate nurses' moral intelligence. Its grading was based on a Lickert scale in range of 1 (never) to 5 (always). Moral intelligence was obtained from total of 4 aspects divided by 2. The lowest and the highest score of the questionnaire was 20 and 100 [16]. Ultimately, a higher score indicates more moral intelligence. Validity and reliability of the questionnaire were studied through different researches. The Cronbach's alpha coefficient was reported equal to CVI=0.85 and 0.89-0.81 [9,12]. The third questionnaire was based on Peterson's work performance including fifteen questions and four-degree recitation scales (seldom to always). The final score is between 15 to 60. The highest score indicated better work performance. The validity of the questionnaire was confirmed through different researches by bisection (0.74), Cronbach Alpha (0.80), and retest (0.87) methods [17]. The fourth was based on Biering *et al.* patient's satisfaction from nursing care [18].

The questionnaire includes 26 questions concerning evaluation of provided care by the nurses. The grading of the questionnaire was based on a Lickert scale in range of (1 completely disagree) to (5 completely agree). The scores were summed in order to obtain the total score. The minimum score of the questionnaire is 26 and the maximum score is 130. Ultimately, a higher score indicates the highest level of satisfaction. The questionnaire was translated in to Persian by Moghimi and Ramezani in 2011. The validity of the questionnaire was confirmed by Sadeghi *et al.* [13], Biering *et al.* and Alpha Cronbach was calculated as 0.95-0.71 [18]. The content validity method was used in order to determine

the validity of Lennick and Keil's standard moral intelligence tools, Biering patient satisfaction questionnaire and Paterson's work performance questionnaire in the study. Ten members of faculty and experts of Guilan University of medical science studied the questionnaires and the validity of the questionnaires was determined. Then CVI=0.8 and CVR=0.62 were calculated separately for each questionnaire. It indicated the proper validity of the tools.

The researcher referred to intended wards in order to collect data after obtaining license from deputy of research and technology and obtaining moral code necessary coordination with deputy treatment of health department and nursing bureau of Rasht hospitals and head nurses of studied wards. Then the researcher, distributed questionnaires between qualified people to participate in the study. The researcher himself/herself controlled the study completely.

The sampling was done in this way: Per each nurse who filled out the questionnaire, a questionnaire was given to the patient who was under care of the nurse. The nurses' demographic information and moral intelligence and work performance questionnaire and patients' demographic information and their satisfaction from nursing care questionnaire were filled out by nurses and patients. Then the data were entered to SPSS20 and analysed through descriptive tests (standard deviation mean, percentage and frequency tables).

The study of normal data distribution was done through Kolmogorov-Smirnov test. The nurses' work performance score ( $p < 0.001$ ) and patients' satisfaction score ( $p = 0.042$ ) was not according to the normal distribution; therefore, Man-Whitney and Kruskal Wallis's nonparametric tests were used in order to compare the scores based on demographic variations. But the scores of moral intelligence distributed normally so the parametric t-test and ANOVA test were used to compare the scores ( $p = 0.06$ ) and Spearman test was used to study the relationship between principal Variables. The level of significant was considered equal to 0.05. The p-value was entered in multiple linear regression models in order to predicate the factors related to moral intelligence.

## RESULTS

The results of the study indicate that the average age of the nurses was ( $32.17 \pm 7.61$ ) years and the average age of the patients was ( $47.25 \pm 17.05$ ). 98.1% of participated nurses were female and 1.9% of them were male. Most of the nurses were under the age thirty (42.3) and mean career experience equal to ( $7.82 \pm 6.31$ ) and 96.9% of the nurses had a graduate degree and 3.1% had a master degree. The mean of nurses' moral intelligence was ( $80.43 \pm 10.22$ ) and the mean of their work performance was ( $52.89 \pm 8.56$ ) and the mean of patients' satisfaction was ( $70.30 \pm 18.05$ ) (Table 1).

**Table 1: Mean and standard deviation of ethical intelligence, job performance and satisfaction of patients**

	Mean	Standard Deviation	Median	95.0% Lower CL for Mean	95.0% Upper CL for Mean
Job performance Score (15-60)	52.89	8.56	56	51.84	53.93
Patient satisfaction Score (26-130)	70.3	18.05	69	68.1	72.51
Moral intelligence Score (20-100)	80.43	10.22	80	79.18	81.68

**Table 2: Correlation coefficient of moral intelligence, job performance and satisfaction of patients**

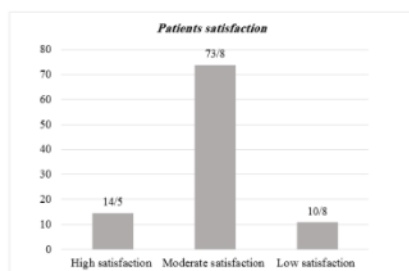
	Spearman's rho	Patient satisfaction mean	Job performance mean
Job performance mean	r	0.003	
	P	0.965	0.509
Moral intelligence mean	r	0.03	
	P	0.635	0

**Table 3: Estimation of the regression coefficients of predictors of satisfaction of patients based on logistic regression model**

	B	S.E.	Sig.	Odds Ratio	95% C.I. for OR	
					Lower	Upper
Education (Masters Towards to Bachelor)	2.099	1.107	0.058	8.155	0.931	71.461
Hospital of Nurse Workplace	-	-	0.008	-	-	-
Trauma Hospital				Reference		
General Hospital	-0.266	0.336	0.427	0.766	0.397	1.479
Burn Hospital	-0.865	0.565	0.126	0.421	0.139	1.274
Heart Hospital	-1.425	0.456	0.002	0.24	0.098	0.588
Women Hospital	-1.352	0.48	0.005	0.259	0.101	0.663
ENT Hospital	-0.641	0.504	0.204	0.527	0.196	1.415
Constant	0.903	1.062	0.395	2.467	-	-

According to finding 73/8% of patients reported moderate satisfaction (Figure 1).

Since the scores of patients' satisfaction and nurses' moral intelligence and work performance indicated abnormal distribution, Spearman test was used in order to compare the correlation of three factors. The results indicated that there is no significant linear correlation between the scores of patients' satisfaction and nurses' work performance and moral intelligence (Table 2). And the significant statistical relationship was not observed between patient's satisfaction and nurses' work performance and moral intelligence in multiple logistic regression analysis (Table 3).



**Figure 1: The frequency of patients' satisfaction scores from nursing care**

## DISCUSSION

Nurses provide an important part of the health care system and are in close contact with the patients.

The purpose of the present study was to investigate the correlation between moral intelligence in nurses and their job performance and patient satisfaction from nursing care.

Based on the results of the study, the nurses' level of moral intelligence was higher than mean. Along with the study, Sotoodeh *et al.* reported high level of nurses' moral intelligence [11]. Sadeghi *et al.* also reported the proper mean of nurses' moral intelligence (76.68 ± 6.55). They studied the relationship between nurses' moral intelligence and patients' satisfaction through the research [13]. The finding in study of Amini *et al.* indicated that the nurses' moral intelligence was higher than average level [10].

While Sokhanvar reported that the level moral treatment of the nurses was improper [19]. Wood's study indicated that most of nurses consider to moral codes, but they don't have sufficient power and support to act properly [20]. The results are contrary to the current study. It seems that nurses' high level of moral intelligence results

from how the nurses care about acquiring to moral rules and applying the rules in clinical environment.

In the current study, the sum of nurses' work performance scores was equal to  $(52.89 \pm 8.56)$  that indicates the high level of nurses' work performance. The finding is according to the study of Hosseini *et al.* that indicates the level of nurses' work performance equal to  $(45.86 \pm 7.15)$  [8]. The level of nurses' work performance was reported moderately high in Hamid *et al.* study [17]. And it was reported moderate in contrary to the current study in the research of Biering *et al.* [18]. According to the results from different studies can be said that the work performance can affect by different factors including nurses' career experience, degree of education and even employment ward.

According to the current study, the patients' satisfaction from nursing cares was moderate. The findings were matched with the study findings of Joolae *et al.* [3] and it indicates that the most patients (72%) satisfied from nursing services moderately. The score of patients' satisfaction in the study of Gheljah *et al.* was equal to  $(17.8 \pm 10.9)$  and 61% of the patients were moderately satisfied from the quality of nursing care [21]. The findings of the study of Fesharaki *et al.*, Freitas *et al.* were similar to the study [22,23]. Findik *et al.* reported the high level of patients' satisfaction from nursing cares in their study [24]. While in Jannati *et al.* and Khezri *et al.* studied respectively 77% and 845 of patients were unsatisfied from nursing services [12,25]. The nurses' high work load, shortage of nursing personnel, low wages against the nurses' heavy workload are the factors which affect the providing services by nurses that can influence the patients' satisfaction. Regarding to the issue that the studies were done concerning hospitals and patients with different cultures and under different conditions, perhaps the contradictory results can be explained. A significant relationship between nurses' moral intelligence and work performance and patients' satisfaction was not observed in the study. But the study of Sadeghi *et al.* indicated a positive and significant relationship between moral intelligence and patients' satisfaction [26].

The study of Gheljah *et al.* and Aiken *et al.* also indicated a positive and significant relationship between the quality of nursing cares and patients' satisfaction [21,27]. Regarding to the few researches concerning the study of the relationship between moral intelligence and patients' satisfaction, the researchers cannot find any studies concerning the subject. The contradiction of the study with other researches may result from the effect of social-cultural differences in the societies or even different ethnicities in a country. In addition, the nurses' career experiences and their different education degrees and conditions of hospitals can affect the results too. And perhaps the differences between the researched samples of the study and other researches lead to different results. Anyway, the issue needs further study and research.

In the study the effect of education degree (bachelor degree to master degree) on patients' satisfaction was significant statistically. The scores of the patients who were under care of nurses with master education degree was 8.2 times higher than average. The study of Darvish *et al.* indicated a significant relationship between education degree and work performance [28]. The study of Amani *et al.* as the same as the current study indicated the level of education can affect the level of patient's satisfaction [29]. It seems that the nurses' knowledge and cognition increase due to higher levels of education. The factor affects improvement and development of the providing care services and finally it leads to higher level of patient's satisfaction.

There was a significant relationship between the nurse's hospital and the level of the patient's satisfaction. The level of patient's satisfaction was higher in the trauma hospital, but their satisfaction levels were lower in heart hospital proportionally. The study of Motaghd *et al.* indicated a significant relationship between patients' satisfaction and the ward. The level of patients' satisfaction in surgery ward was lower than others [30]. The study of Jannati *et al.* indicated the lower level of patients' satisfaction in interior women ward and the higher level was in intensive care ward [12]. The studies of Joolae *et al.*, Fesharaki *et al.* and Amani *et al.* indicated a significant relationship between different wards and patients' satisfaction [3,22,29]. Perhaps it can be said since the emergency measures and surgery for sustainability of patient condition and emergency surgery are more proper in trauma hospital and intensive care ward due to the vital condition of patients, the level patients' satisfaction is higher than other wards. While in heart centres, the patients with chronic heart diseases need to more prolonged hospitalization and since they are suffering from more side effects so they need to more treatments. So the issue can affect the patients' satisfaction from provided cares. In fact, short waiting periods for diagnosis and medical procedures and short hospitalization period can affect patients' satisfaction. The periods naturally are more prolonged in chronic disease such as heart disease.

## CONCLUSION

Based on obtained results, the need for consideration some factors such as improvement of moral intelligence, creation of appropriate conditions for proper work performance in order to provide high quality nursing services, and improvement of effective conditions and factors in providing services with higher quality is emphasized. The factors such as nurses' knowledge and level of education can affect the improvement of the level of patients' satisfaction from nursing services and as a result, the improvement and development of performance of health care system. Nurses' work pressure, tiredness and patients and nurses' psychological and mental states at the time of answering to the questionnaire were limitations of the study. The researcher tried to sample nurses in pavilion and

patients when it was not the time of visiting as much as possible to solve the problem.

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