

Relationship among Nurses 'Locus of Control, Work Motivation Factors, and Their Organizational Commitment

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Abstract Locus of control is an important variable that affects every area of human endeavor as describing individual differences and predicting behavior in organizational settings. Also, it is viewed as an important element for work motivation which determines the level of organizational commitment. Organization commitment is a critical factor to organizational success, effectiveness and efficiency. A high level of motivated and committed nurses in an organization can have beneficial consequences, resulting in lower absenteeism, higher performance and lower nurses' turnover. **Aim:** The present study aimed to investigate the relationship among nurses' locus of control, work motivation factors, and their organizational commitment. **Research Design:** A descriptive correlational design was utilized. **Study Setting:** the study was conducted in all in patient units at Benha Teaching Hospital. **The study sample was:** A convenience sample of staff nurses (129) who are working in the above mentioned study setting. **Tools of data collection:** Three tools were used: (1) the Rotter's internal-external (I-E) locus of control scale, (2) Work motivation factors questionnaire, and (3) staff nurses' organizational commitment questionnaire. **The result:** The findings of this study showed that the highest percentage of studied staff nurses' (57.6%) had internal locus of control, while the lowest percentage of them (15%) had external locus of control. And, the majority of the staff nurses (79.9%) had high perception level regarding work motivation factors. Also, more than three fifth of staff nurses (63.3%) had moderate level of organizational commitment. **Conclusion:** The study concluded that there was a positive highly statistical significant correlation between overall score of locus of control, work motivation factors and organizational commitment for nurses. Also, there was a positive highly statistical significant correlation between staff nurses' locus of control, work motivation factors, and organizational commitment in relation to years of experience, and education qualification during study. **Recommendation:** it recommended that, hospital should carry out continuous in-service training program for enhancing nurses' locus of control, and the hospital administrators should pay more attention to create innovative methods and promotion to increase nurses' organizational commitment and maintain good work motivation.

Keywords: nurses, locus of control, work motivation, and organizational commitment

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1. Introduction

In the globalizing, competition and the goal of achieving best in practice work environment require more effort from nurses. A factor that may have a role in how nurses adapt for changing work requirements is locus of control [1]. Locus of control (LOC) is one of the four dimensions of core self-evaluations, and it is the magnitude that an individual perceives reinforcement due to their own behavior or outside forces [2].

The locus of control concept was first proposed by Rotter (1966), an expert on social learning theory, and refers to the extent to which individuals believe that they can control events that affect them. Locus of control can be accepted as a personality trait that has a powerful cognitive focus. Besides, it is the result of anticipation about expected outcomes of events in a person's life [3,4]. Nurses can be differentiated on the basis of their generalized expectancy concerning internal and external control of life events and outcomes. The degree to which a nurse perceives events to be under her/his control is considered internal locus or under the control of external factors (external locus) [5,6].

Furthermore, individuals with a high internal locus of control believe that outcomes such as success and failure are influenced by their own efforts, and that responsibility for whether or not they get reinforced ultimately lies with them [2,7]. On the contrary, individuals with an external locus of control believe that their own efforts have little impact on the amount of reinforcement they receive, and that outcomes such as success and failure in life are controlled by external factors such as luck, chance, fate, destiny, society or other forces beyond their control. Thus, locus of control is an important factor in influencing an individual's developmental and professional outcomes [8,9].

There are three dimensions for locus of control in the work setting including: locus of control and well-being, locus of control and behavioral orientation, and locus of control and motivation. The first dimension is locus of control and well-being; locus of control is a predictor of well-being and a key element of the concept of self-worth [10,11]. The belief that nurse has a degree of control of the environment is representative of a positive evaluation of self-worth. Alternatively, the belief that control of the environment is dependent upon external forces is representative of a negative evaluation of self-worth. In addition to being associated with subjective well-being and self-worth, more internal locus of control has been shown to be related to work-related affective reactions including global job satisfaction, organizational commitment, attendance, turnover intent and innovative behaviors [12,13].

Moreover, the second dimension is the locus of control and behavioral orientation or intent; individuals with more internal locus of control not only tend to demonstrate better task performance outcomes and career success, they also demonstrate fewer negative work outcomes associated with burnout, role ambiguity and role conflict [14]. While the third dimension is locus of control and motivation; motivation develops and displays positive workplace behaviors and organizational continuance commitment [12]. Nurses with more internal locus of control exhibit more motivation to learn and become more competent and confident in their occupational abilities and provide healthy environments [15].

Motivation originated from the word motive which suggested requirements, wishes, desires or drives within the persons [16]. Moreover, motivation refers to the process of developing intent, energy, determination and action to carry out certain behavior [17]. Also, it is a power that guides one toward fulfilling a purpose strengthens behavior and activates the tendency to continue working toward organizational goal achievement at the same time satisfying personal needs [18].

As well, motivation is a set of forces that can come from the person, so-called "push" of internal forces, or they can come from the environment that surrounds the person, so-called "pull" of external forces [19,20]. In addition, motivation is giving a reason, incentive, enthusiasm, or interest that causes a specific action or certain behavior to overcome obstacles to make a difference. Thus, it has become more important for nurses who confront various demands derived from their patients [21,22].

Motivation is a critical part of leadership because people need to understand one another in order to lead effectively [23]. Leaders define motivation as a driver of stable mind, aspiration, force or interest within the individual that is translated into action, and represents the synergistic effect of the number of stimuli on the behavior of employees in performing their job duties [24,25]. Motivation is both situational and relational; how one reacts to conditions always depends upon the situation and relationship to others [26,27]. Motivation increases effectiveness beyond the organization by improving the willingness of the employees to work [28].

Work motivation is the psychological processes that determine the direction, intensity, and persistence of action within the continuing stream of experiences and determine a person's intentions to allocate personal resources across a range of possible actions that characterize the person in relation to his or her work [29]. Besides, it is a set of energetic forces that originate both within as beyond an individual's being, to initiate work-related behavior and to determine its form, direction, intensity, and duration [30].

In order to achieve the specified objectives, one needs to identify the motivating factors in human beings [31]. Due to individual differences, people have different motives with different prioritization for what they do. The work motivation of people in the same organization may not be the same. Therefore, in order to identify one's motivating factors, it is necessary to identify his or her personality trait first [32]. The most important motivating work factors based on Herzberg's theory of motivation were the nature of job, supervision and monitoring method, job progress and development, appreciation and acknowledgment, workplace conditions, job security, salary and wages, communication and policy in the workplace, and job responsibilities [33,34,35].

Motivation on the part of employees is the key to success in any organization. That's why dealing with unmotivated and irresponsible personnel has been managers' biggest challenge [36,37]. No organization can perform effectively unless each employee is committed to the organization's objectives [38,39].

Organizational commitment is the strong desire of a member to remain in the organization, a great deal of effort for the organization, and a firm belief in accepting the values and goals of organization. Also, it is considered to be one of the important outcomes of the human resource strategies. It is seen as the essential factor in achieving competence level of performance of employees inside their institution [40,41].

Allen and Meyer have stated various dimensions for organizational commitment. They distinguished between three types of commitment which include the following; affective, Continuance and normative commitment [42]. Affective commitment is a feeling of emotional attachment and desire of the individual to the organization identification with the organization and willingness to participate actively in it. Continuance commitment; shows an awareness of various cost associated with leaving the organization, which is presented in two forms of the absence of suitable job opportunities and loss of

experience. While, normative commitment; has been described as a sense of loyalty to the values and goals of the organization and obligation to continue employment [43,44].

Organizational commitment has become an essential element in the understanding of staff nurses' organizational behavior in the workplace [44]. It reflects the extent to which nurses is committed to organization's objectives and the work itself [45]. Thus, committed nurses are more loyal in their behavior [46]. Organizational commitment can bring about a sense of satisfaction, belonging, affiliation and attachment of employees to the organization, more favorable job performance, and job motivation [47].

1.1. Significance of the Study

Locus of control is an important variable for the explanation of human behavior in organizations. Individuals who are identified with an internal locus of control tend to take more responsibility for their actions, good and bad. This type of individuals is often more punctual, self-motivated, likely to be ambitious and successful. An individual with an external locus of control is often seen as humble and agreeable [14,48]. Plus, the perception of being in control of one's outcomes is one factor that affects the work motivation and nurses organizational commitment [49].

Determining the scores of internal-external locus of control of the nurses will help to have a better understanding of the motivating work factors that considers extremely important for nurses organizational commitment to improve patient care. Organizational commitment is an important variable in understanding nurses' behavior that has potentially serious effects on the performance of the organization, and ignoring it has been harmful for the organization [50,51]. Motivated and committed nurses can improve growth and excellence in the organization. So, this study was carried out to investigate the relationship among nurses' locus of control, work motivation and their organizational commitment at Benha Teaching Hospital.

1.2. Aim of the Study

The present study aimed at investigating the relationship among nurses' locus of control, work motivation and their organizational commitment at Benha Teaching Hospital.

1.3. Research Questions

1. What is the staff nurses' level of locus of control?
2. What are the motivating work factors as perceived by staff nurses?
3. To what extent nurses have organizational commitment?
4. Is there a relationship among staff nurses' locus of control, work motivation factors and their organizational commitment?

2. Subjects and Methods

2.1. Research Design

A descriptive Correlational design was used to achieve the aim of the present study.

2.2. Setting

The current study was conducted in all inpatient units at Benha Teaching Hospital.

2.3. Subjects

2.3.1. Subject Size

A convenient sample of staff nurses(129) working in all in patient units and agree to participate after clarification purpose of the study and distributed as following; (12) of them working at orthopedic, (16) at pediatric, (9) at operating room, (11) at urology, (19) at burning, (17) at dialysis, (10) at medical, (14) at obstetrics and gynecological unit, and (21) staff nurses working at intensive care units.

2.4. Tools of Data Collection

Three tools were used to collect the data of this study:-

2.4.1. Rotter's Internal-external (I-E)

Locus of Control Scale

It was developed by Rotter [52] and modified by Pettijohn, Pettijohn and Sacco [53] and adopted by the researchers to assess staff nurses' level of locus of control at work. It consisted of two parts, **part one**; include personal characteristics of nurses as age, marital status, level of educational qualification, and experience years. **Part two**: Rotter's internal-external (I-E) locus of control scale. It consisted of (20) items, that were classified into two dimensions; internal (9 items), and external (11 items).

Scoring System:

Using a five point Likert - scale as follow: strongly agree (5 point), agree (4 point), uncertain (3point), disagree (2 point), and strongly disagree (1 point), and total score (100). The score of each dimension summed up and converted to percent score.

The participant who had a percent $\geq 80\%$ (score ≥ 80) this indicate strongly internal locus of control, and from $60\% - < 80\%$ (score $60 - < 80$) indicate internal locus of control also, the percent from $35\% - < 60\%$ (score $35 - < 60$) indicate both internal-external locus of control. While the percent from $15\% - < 35\%$ (score $15 - < 35$) indicate external locus of control, and participant who had a percent from $0\% - < 15\%$ (score $0 - < 15$) indicate strongly external locus of control.

2.4.2. Work Motivation Factors Questionnaire

A structured questionnaire developed by the researchers through reviewing the related literature as VAN WYK; Ahmad et al.; Daneshkohan et al.; Kheirkhah [9,15,33,54]. It included different items to identify motivating work factors as perceived by staff nurses. It consisted of (46) items that were categorized under 10 dimensions, namely; Salary and wages (3 items), Policy in the workplace (9 items), Communication (5 items), Job security (6 items), Workplace condition (5items), Supervision and monitoring methods (5 items), Appreciation and acknowledgment (3items), Job promotion and development (3items), Nature of the job (3 items), and Job responsibility (4 items).

Scoring system: each statement response is measured on a five-point Likert scale that ranged from: (1) doesn't apply, (2) not important at all, (3) not important, (4) important, and (5) very important. Total score (230), and the score of each dimension summed up and converted to percent score.

Level of work motivation factors is considered high perception if the percent $\geq 75\%$ (score ≥ 173), moderate if the percent $60\% - < 75\%$ (score $138 - < 173$) and low if the percent $< 60\%$ (score < 138).

2.4.3. Staff Nurses' Organization Commitment Questionnaire

It was developed by Abdelwahab, Ahmed and Elguindy [55]. based on Allen and Meyer [56]. It included different items to assess staff nurses' level of organizational commitment. It consisted of (20) items divided into three main categories; Affective commitment "7" items, Continuance commitment "7" items, and Normative commitment "6" items.

Scoring System: Using a five point Likert - scale as follow: strongly disagree (1 point), disagree (2 point), neutral (3 point), agree (4 point), and strongly agree (5 point). The score of each dimension summed up and converted to percent score. Level of commitment is considered high if the percent $\geq 75\%$ (score ≥ 75), moderate from (60%- 74%) (Score 74 - 60) and low: $< 60\%$ (score < 60).

2.5. Data Collection Methods

1. A review of recent national and international related literature using journals, periodicals, textbooks, internet, and theoretical knowledge of the various aspects concerning the topic of the study.
2. Preparation of data collection tools and translated into Arabic was carried out over a period of two months (from the beginning of August to the end of September 2018).
3. Once tools became ready, they tested for content validity by jury of 5 academic staff in nursing administration from different faculties of nursing. The validity of the tools aimed to judge its clarity, comprehensiveness, relevance, and accuracy. All of their comments were taken into consideration; some items were re-phrased.
4. Also the reliability of the tools was conducted to determine the internal consistency and homogeneity of the used tools by Cronbach's Alpha test and results were $r = (0.84, 96 \& 92)$ for Rotter's internal-external (I-E) locus of control scale, work motivation questionnaire, and staff nurses' organizational commitment questionnaire respectively.
5. A permission to conduct the study was obtained from the director of Benha Teaching Hospital after explaining the aim of the study.
6. Pilot study was carried out on October 2018 and conducted on about 10% of total sample (13 nurses). The aim of pilot study was to examine the sequence of items, feasibility, practicability and applicability of the tools, clarity of the language and for

estimating the time needed to fill it. The tools were finalized based on the result of the pilot study. The pilot study was included in the main sample.

7. Ethical considerations; all participants were interviewed for explaining the purposes and procedures of the study, and they have the right to withdrawal from the study any time during the study. In addition, confidentiality and anonymity of the subjects were assured through coding of all data. Oral consent to participate was assumed by attendance of filling questionnaire sheet.
8. Data collection took about one month (from the beginning to the end of November 2018). The researcher distributed the data collection forms with instructions about how to fill them.
9. The time required to fill the questionnaires sheet was range from 20 to 25 minutes for Rotter's internal-external (I-E) locus of control, from 50-55 minutes for work motivation questionnaire and from 20-25 minutes for staff nurses' organizational commitment questionnaire. The filled forms were collected in time and revised to check their completeness to avoid any missing data. The average number of gathering questionnaires was between 5-6 nurses per day and for 3 days/week for each researcher.

2.6. Statistical Analysis

Data were verified prior to computerized entry. The Statistical Package for Social Sciences (SPSS version 20.0) was used for that purpose, followed by data analysis and tabulation. Data were presented using descriptive statistics as number, frequency mean, and standard deviation, and Pearson correlation coefficients (r). A significance level value was considered when p -value ≤ 0.05 , while p -value > 0.05 indicates non-significance results.

3. Results

Table 1: Showed that the personal characteristics of the studied nurses, where more than two fifth of them (47.3%) were aged from 30 to less than 40 years with mean age of 35.79 ± 8.32 , the most of them (71.3 %) were married, 65.1 % of them had nursing diploma and 39.5 % of them had from 15 to less than 25 years of experience with a mean of 17.85 ± 7.98 .

Table 2: Clearly revealed that highest percentage of studied staff nurses' (73.7%, 66.7%, and 58.9%) was agree that persistence and hard work usually lead to success, nurse leaders are successful when they work hard, and nurses can anticipate difficulties and take action to avoid them respectively.

Table 3: Demonstrated staff nurses agreements (67.4%) were related to need to be kept informed about new events in nursing.

Figure 1: Revealed that highest percentage of studied staff nurses' (57.6%) had internal locus of control.

Table 4: Presented the majority of the staff nurses (89.1%, 88.4 %, and 86.0%) reported the essential work

motivation factors had related to salary and wages, job promotion and development, and job security respectively. While, the lowest percentage of them was related to job responsibility.

Figure 2: Illustrated that 79.9% of studied nurses had high perception regarding work motivation factors.

Table 5: Demonstrated that the highest mean score for nurses` organizational commitment related to affective commitment (25.31 ± 1.96), while the lowest mean score of them had related to normative commitment (19.41 ± 3.69).

Figure 3: Portrayed that more than three fifth of staff nurses (63.3%) had moderate level of organizational commitment.

Table 6: Showed that there was a positive highly statistical significant correlation between overall score of locus of control, work motivation factors and organizational commitment for nurses.

Table 7: Clarified that there was a positive highly statistical significant correlation between staff nurses` locus of control, work motivation factors and, organizational commitment regarding years of experience, and education qualification of them during study.

Table 1. Distribution of the studied staff nurses according to their personal characteristics (n =129)

Personal Characteristics	No	%
Age (years)		
<30	8	6.2
30 <40	61	47.3
40<50	23	17.8
≥ 50	37	28.7
X̄±SD	35.79±8.32	
Marital status		
Married	92	71.3
Single	24	18.6
Others	13	10.1
Level of Educational Qualification		
Nursing diploma	84	65.1
Technical institute	25	19.4
B.Sc. Nursing	20	15.5
Years of experience		
< 5	3	2.3
5 < 15	45	34.9
15< 25	51	39.5
≥ 25	30	23.3
X̄±SD	17.85±7.98	

Table 2. Agreement distribution of the nurses regarding internal locus of control (no=129)

Items for internal locus of control	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. I can anticipate difficulties and take action to avoid them	40	31.0	76	58.9	10	7.8	2	1.6	1	0.7
2. I usually get what I want in life	41	31.8	60	46.5	18	13.9	5	3.9	5	3.9
3. I usually convince others to do things my Way	30	23.3	20	15.5	36	27.9	31	24.0	12	9.3
4. When I make plans , I am almost certain that I can make them work	15	11.6	65	50.4	43	33.3	6	4.7	0	0.0
5. My mistakes and problems are my responsibility to deal with	31	24.0	67	51.9	21	16.3	7	5.5	3	2.3
6. Nurse leaders are successful when they work hard	31	24.0	86	66.7	5	3.9	3	2.3	4	3.1
7. Persistence and hard work usually lead to Success	27	20.9	95	73.7	4	3.1	2	1.6	1	0.7
8. I believe a person can really be the master of his fate	21	16.3	34	26.4	70	54.3	4	3.1	0	0.0
9. I am confident of being able to deal successfully with future problems	31	24.0	40	31.0	54	41.9	4	3.1	0	0.0

Table 3. Agreement distribution of the nurses regarding external locus of control (no=129)

Items for External locus of control	Strongly agree		Agree		Uncertain		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%
1. A great deal of what happens to me is probably just a matter of chance	24	18.6	31	24.0	30	23.3	40	31.0	4	3.1
2. Everyone knows that luck or chance determines one`s future	20	15.5	32	24.8	24	18.6	37	28.7	16	12.4
3. I need to be kept informed about new events in nursing	87	67.4	14	10.9	23	17.8	3	2.3	2	1.6
4. If I do not succeed on a task, I tend to give up	15	11.6	20	15.5	27	20.9	39	30.2	28	21.8
5. I can control my problem(s) only if I have outside support	41	31.7	38	29.5	27	20.9	14	10.9	9	7.0
6. My work problem(s) will dominate me all my life	44	34.1	18	14.0	21	16.3	31	24.0	15	11.6
7. I never try anything that I am not sure of	33	25.6	47	36.4	20	15.5	25	19.4	4	3.1
8. To continually manage my problems I need professional help	26	20.2	39	30.2	31	24.0	33	25.6	0	0.0
9. Other people usually control my life	20	15.5	17	13.2	37	28.7	11	8.5	44	34.1
10. I understand why my problem(s) varies so much from one occasion to the next	36	28.0	50	38.6	38	2.3	3	2.3	2	1.6
11. In my case maintaining control over my problem(s) is due mostly to luck	20	15.5	15	11.6	35	27.1	26	20.2	33	25.6

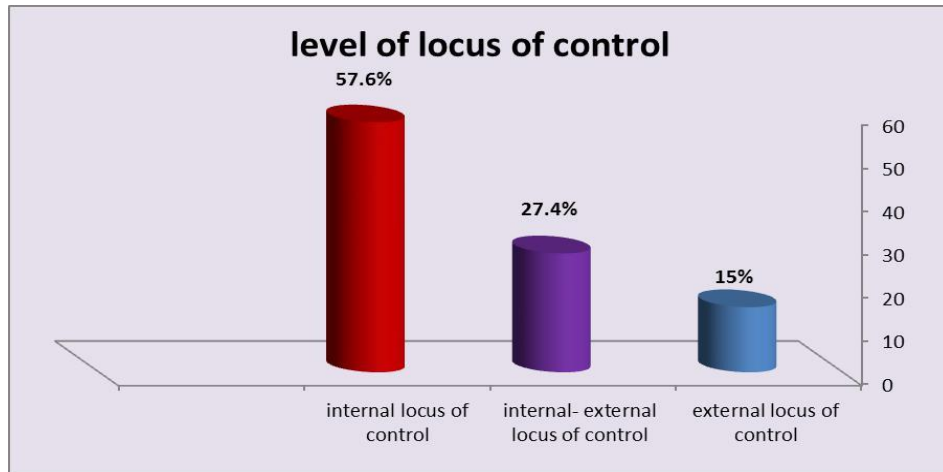


Figure 1. Distribution of the staff nurses regarding total locus of control level (n=129)

Table 4. Distribution of the staff nurses' perception regarding work motivation factors (n=129)

Dimensions of work motivation factors	High		Moderate		Low	
	No.	%	No.	%	No.	%
Salary and wages	115	89.1	14	10.9	0	0.0
Policy in the workplace	100	77.5	21	16.3	8	6.2
Communication	104	80.6	20	15.5	5	3.9
Job security	111	86.0	10	7.8	8	6.2
Workplace condition	108	83.7	14	10.9	7	5.4
Supervision and monitoring methods	85	65.9	25	19.4	19	14.7
Appreciation and acknowledgment	105	81.4	24	18.6	0	0.0
Job promotion and development	114	88.4	11	8.5	4	3.1
Nature of the job	103	79.8	24	18.6	2	1.6
Job responsibility	86	66.7	24	18.6	19	14.7

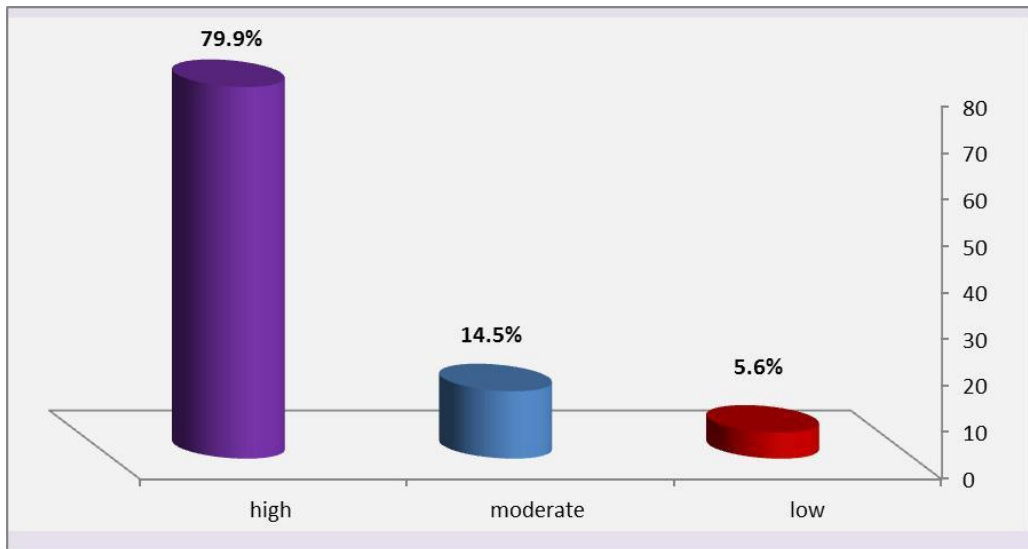


Figure 2. Total nurses' perception toward work motivation factors (n=129)

Table 5 Mean scores for nurses' organizational commitment (n=129)

Variables	Max score	Mean ± SD	Total Percent
Affective commitment	35	25.31 ± 1.96	72.3
Continuance commitment	35	24.43 ± 1.85	69.8
Normative commitment	30	19.41 ± 0.84	64.7
Total	100	69.16 ± 3.69	

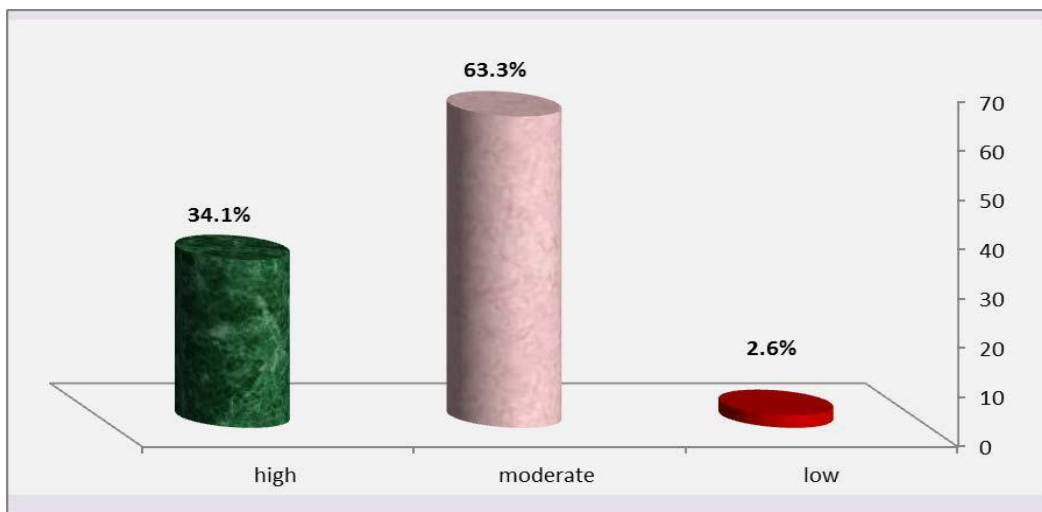


Figure 3. Total level of the studied nurses' organizational commitment (n=129)

Table 6. Correlation between overall score of Locus of control, work motivation factors, and organizational commitment for nurses` (n=129)

Variables	Locus of Control		Work Motivation factors		Organizational Commitment	
	r	P- value	r	P- value	r	P- value
Locus of Control	-	-	0.506	<0.001**	0.367	<0.001**
Work Motivation factors	0.506	<0.001**	-	-	0.471	<0.001**
Organizational Commitment	0.367	<0.001**	0.471	<0.001**	-	-

**A high statistical significant difference (P ≤ 0.001).

Table 7. Staff nurses` locus of Control, work motivation factors and, organizational commitment in relation to years of experience, and education qualification (n=129)

Items	Personal characteristics			
	Years of Experience		Education Qualification	
	r	P- value	r	P- value
Locus of Control	0.466	<0.001**	0.418	<0.001**
Work Motivation factors	0.550	<0.001**	0.604	<0.001**
Organizational Commitment	0.581	<0.001**	0.364	<0.001**

**A high statistical significant difference (P ≤ 0.001).

4. Discussion

The locus of control is one of the major personality attributes that influences organizational behavior as; organizational commitment and work motivation [57]. The organizational commitment is the important element that increases or promotes the ties or attachment of the individual to the organization [58]. Understanding the commitment is useful for the organizational. Because it creates the innovation of the staffs, more stay in the hospital and more competition power and the hospital will have more productivity of the organizations and better quality of the products [44,59].

Motivation is an effective instrument in the hand of management in inspiring and increases the willingness of the workforce thus increasing efficiency and effectiveness of the organization [60]. In addition, work motivation is an important for nurses' lives that can have an effect on patient satisfaction, quality of care, retention, turnover, and commitment to the organization [61].

Concerning nurses' agreement regarding internal locus of control, the result of present study revealed that highest

percentage of studied staff nurses' (73.7% and 66.7%) had agreed that persistence and hard work usually lead to success and nurse leaders are successful when they work hard. This might be attributed to the ability of the nurses with internal locus of control to overcome their work environment so, they have a better work performance and job success.

This result was supported by Sahraian et al. [62], who conducted a study entitled; association of job stress with locus of control in nurses and mentioned that, internal locus of control is associated with positive work outcomes and as a result, promoting positive attitudes and behaviors is possible. In the same line, El-Sayed and Abdel-Aleem [63]. who found in their study; relationship between head nurses' locus of control and staff nurses' job empowerment that, those with an internal locus of control believe that work outcomes are based on their own effort.

Regarding nurses' agreement toward external locus of control, the result of present study revealed that more than two thirds of them need to be kept informed about new events in nursing. This might be due to challenges in today's work environment require professional competent

nurses not only educated well but being creative, have a desire to achieve success, able to work under pressure, and accomplish the organizational and personal goals.

As regard to distribution of the staff nurses regarding total locus of control level, the result of present study revealed that more than half of studied staff nurses had internal locus of control. This might be due to most of the studied nurses do their responsibility for accomplishing a particular task or goal and responsible for its success, this gives a measure of control.

This result was in accordance with El-Sayed and Abdel-Aleem [63], who asserted that, about three fifth of head nurses have internal locus of control, while more than two fifth of them have external other locus of control.

On the other hand, this result was in disagreement with Pourhoseinzadeh et al. [64], who revealed in their study about; the relationship between health locus of control and health behaviors in emergency medicine that, in relation to determining the type of health locus of control in emergency medical personnel show that most personnel had external locus of control. Similarly, Hashemian, Fallahi, and Akaberi [40], stated in their study; health locus of control associated with attitudes toward breast cancer in women with a positive family history of breast cancer in Sabzevar city that, the mean scores of the internal and external locus of control for participants in the study were roughly equal.

The results of the current study highlighted that the most important work motivating factor as reported by staff nurses had related to salary and wages, job promotion and development, and job security respectively. While, the lowest percentage of them was related to job responsibility.

These findings were supported by Kheirkhah et al. [35], in their study; the relationship between job motivation and its dimensions with organizational commitment in midwives of sanitary and therapeutic centers and confirmed that, the most important motivating factors were the salary and wages, nature of the job, supervision and monitoring method, job progress and development, appreciation and acknowledgment, workplace conditions, job security, communication and policy in the workplace, job position, and responsibilities, respectively. Also, Agwu [65], who done study about; impact of fair reward system on employees job performance in Nigerian Agip Oil Company and stated that, if organization provide good salary, able to promote employees for the hard work and effort contributed, it will motivate that employee to contribute outmost performance

This finding is inconsistent with Daneshkohan et al. [54], who conducted a study about; factors affecting job motivation among health workers: a Study from Iran and reported that, good management was the most important motivator for health workers followed by support from supervisors and managers when occurring problems, good working relations with colleagues and fair treatment from supervisors and managers, whereas resource availability, financial incentives, continuing education and non-financial welfare benefits had the least effects on motivating the study population.

Moreover, the current study revealed that nearly four fifth of studied nurses had high perception regarding work motivation factors. Thus, identifying the factors that influence the nurses' motivation is useful for creating

motivating work environment. This may be related to the fact that it is important for the management to understand the definite causes based on operational needs in an analytical way.

The finding of the present study is consistent with Alhakami and Baker [61], who conducted study about; exploring the factors influencing nurse's work motivation, and revealed that the majority of study participants have a significantly higher positive perception as regards work motivation.

In relation to nurses' organizational commitment the highest mean score for the present study related to affective commitment, while the lowest mean score was related to normative commitment. This result agreed with Miligi, Habib, and Al fozan [66], who presented in their study about; assessment of work environment and employee's commitment in College of Nursing and concluded that, the highest mean score related to affective commitment, while the lowest mean score was related to normative commitment.

On the other hand, this is in contrast with findings of Kheirkhah et al. [35], who revealed that the highest mean score was related to normative commitment, while the lowest mean score was related to affective commitment.

Additionally, the present finding portrayed that more than three fifth of staff nurses had moderate level of organizational commitment. This indicated that nurses are not totally satisfied with their jobs, accordingly high commitment was not found, which gives sufficient belief to say that if they find a good offer elsewhere they will leave their hospital, it may be related to lack of support from their supervisors, incompatible salary and incentives with their efforts.

This result agreed with that of Abdelwahab, Ahmed, and Elguindy [55], who found in their study about; the relationship between organizational commitment and anticipated turnover among staff nurses in university hospital that, the mean score of staff nurses' organizational commitment was moderate, which was a good score as it indicated that nurses were committed to their hospital and the profession. Additionally, Lorber and Savič [67], who conducted the study about; factors affecting nurses' organizational commitment in Slovenian hospitals found that the level of commitment among staff nurses was high to medium. Also Nasiripour et al. [68], who displayed in their study; the relationship between nurses' organizational commitment and services quality and mentioned that, the nurses' organizational commitment was moderate.

Similar findings were also reported by El-Demerdash et al. [69], who found in their study about; the relationship between burnout and organizational commitment among nurses at Tanta University Hospital and showed that, three-fourths of staff nurses had a moderate level of total organizational commitment. And the study conducted by Dadgar et al. [59], titled; the relationship between organizational culture, job satisfaction, organizational commitment and intention to stay of health personnel's Zahedan University of medical sciences and found that, the highest mean score among participants was in continuance commitment and the lowest was in affective commitment.

This result is inconsistent with that of Dorgham [45], who found in his study; relationship between organization

work climate and staff nurses organizational commitment that the studied participants had low commitment toward their hospital, as they did not feel emotionally attached to their hospital or they felt that the hospital did not deserve their loyalty. Also, the present study was in contraction to what was reported by Miligi, Habib, and Al fozan [66], who displayed in his study that more than half of the subjects had high commitment score.

Concerning correlation between variables, the result of present study clarified that there was a positive highly statistical significant correlation between overall score of locus of control, work motivation factors and organizational commitment for nurses. Locus of control is one factor that may affect the work motivation, and organization commitment [57].

In relation to locus of control and work motivation Kamdron [60], who displayed study; work motivation: relationships with job satisfaction, locus of control and motivation orientation, and found that locus of control is a particularly important phenomenon which impacts on both job satisfaction and work motivation. Also, this result in agreement with Özen-Kutanis, et al. [49], conducted their study about; the effects of locus of control on learning performance and reported that, individuals with internal locus of control have more active work motivation and portray more effective work performance.

With respect to locus of control and organizational commitment, the finding was supported by Shannak and A-Taher [11], concluded in their study about; factors affecting work locus of control: an analytical and comparative study, and revealed that individuals with internal locus of control often show less absenteeism and high involvement and commitment as compare to people with external locus of control.

Regarding work motivation and organizational commitment, results of a study by Gholamhossein [70], titled; the relationship between job motivation, job attachment, and organizational commitment in teachers with the managers' efficiency in the Education Department of Zanjan Province, it was shown that there is a relationship between job motivations, and organizational commitment. A significant positive relationship was found between job motivation, and organizational commitment in teachers and efficiency.

Also, this result agreed with Shirzad et al. [71], who asserted that organizational commitment results in increased effort, job motivation, job satisfaction, lower absenteeism from work and increased retention in the organization, in his study titled; comparative study of organizational commitment and its outcomes in private and State hospitals of Semnan provinces. Similarly, Hussain and Haider [58], in his study about; investigating the relationship among organizational commitment, job satisfaction and emotional intelligence -evidence from teachers at Secondary level in Pakistan, results revealed that teachers with higher level of motivation are loyal with their organizations and remains with organization for longer period of time. In the same way, Kheirkhah et al. [35], showed a significant relationship between job motivation and organizational commitment and its components.

Finally, the result of present study revealed that there was a positive highly statistical significant correlation

between staff nurses' locus of control, work motivation factors and, organizational commitment regarding years of experience, and education qualification of them during study. This may be due to their increased skills, capabilities and maturation of their cognitive abilities, also this result may be attributed to the fact that older nurses' feel stability, security due to prolonged years of experience in their job that make them able to cope with and manage emergency and difficult work situations.

The result of the present study was in contraction to what was reported by Ahluwalia and Preet [72], who done study about; age-wise differences in relation to work motivation, organizational commitment and locus of control and showed that, the high internal locus of control amongst the age group 25-30 years and this level decrease as the teachers grow older and the low level of external locus of control is found amongst those teachers who are less experienced.

This finding was supported by Morowatisharifabad et al. [73], showing a positive and significant relationship between health locus of control and age and showed a statistically significant positive correlation between internal locus of control and level of education. Additionally, internal locus of control is increased as education level increases, while external locus of control is decreased as education level increases. Which is not consistent with the findings of other studies Pourhoseinzadeh et al. [64]; Hashemian et al. [40], found that no positive and significant relationship between the locus of control (internal and external) and age and job experience.

This finding was supported by Boumans et al. [74], investigated the influence of age on work motivation. They found stronger motivation for older than younger employees' older employees are more intrinsically motivated.

On the other hand, a study conducted by Abdelwahab, Ahmed, and Elguindy [55], disagrees with the present study results and noted that the correlation between organizational commitment and age and educational level. There was a significantly weak positive correlation between nurses' organizational commitment and their age. There was no significant correlation between nurses' organizational commitment and their educational level. Also Motazedi [75], study about organizational commitment of nurses in Iran indicated that there was no correlation between nurses' age and commitment.

And Elhamirad et al. [76], who done study about; organizational commitment in the employees working in Hospitals affiliated to the Zabol University of Medical Sciences disagrees with the present study results and revealed that, there was no statistically significant relationship between age and work experience of people with organizational commitment and its various dimensions.

5. Recommendation

The findings of the study suggest that:

1. Hospital should carry out continuous in-service training program for enhancing nurses' locus of control.

2. The hospital administrators should pay more attention to create innovative methods and promotion to increase nurses' organizational commitment and maintain good work motivation.
3. The hospital administrators should take into consideration the locus of control of head nurses to formulate and implement good work motivation for staff nurses.
4. The hospital administrators should plane for workshops about the strategies to motivate the staff nurses and how head nurses can use these strategies to motivate their staff.
5. Further studies should be conducted for exploring:
 - The effect of environmental variables on locus of control and nurse-physician collaboration.
 - Relationship between locus of control and nursing priorities.
 - Implementing motivational strategies for nurses` and its effect on organization justice and their organizational commitment.

6. Conclusions

The highest percentage of studied staff nurses' had internal locus of control and high perception level regarding work motivation factors, while more than three fifth of them had moderate level of organizational commitment. In addition, there was a positive highly statistical significant correlation between overall score of locus of control, work motivation factors and organizational commitment for nurses.

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References

- [1] Roddenberry, A. and Renk, K. (2010). Locus of control and self-efficacy: potential mediators of stress, illness, and utilization of health services: *Child Psychiatry and Human Development*, 41, pp. 353-370.
- [2] Colquitt, J. LePine, J. and Wesson, M. (2015). *Organizational behavior: Improving performance and commitment in the workplace* 4th ed., New York: McGraw-Hill Education.
- [3] Champoux, J. (2011). *Organizational behavior: Integrating individuals, groups, and organizations* 4th ed., New York: Routledge.
- [4] Stocks, A. April, K. and Lynton, N. (2012). Locus of control and subjective well-being; a cross-cultural study. *Problems and Perspectives in Management*. 10(1) 50.
- [5] Igbeneghua, I. Bruno, I. and Popoola, S. (2011). Influence of locus of control and job satisfaction on organizational commitment: A study of medical records personnel in University Teaching Hospitals in Nigeria. *Library Philosophy and Practice*.
- [6] Wolfe, J. (2011). The effects of perceived success or failure on locus of control orientation in college students. *Sentience: Undergraduate Journal of Psychology*, pp 11-17.
- [7] Vander Merwe, M. (2013). Perceived levels of teacher efficacy and locus of control at secondary schools. *Central University of Technology*.
- [8] Caliendo, M. Cobb-Clark, D. and Uhlenhorff, A. (2010). Locus of control and job search strategies. *Discussion Papers of DIW, Berlin* 979, German Institute for Economic Research.
- [9] Lefcourt, H. (2014). *Locus of control: Current trends in theory and research*. 2nd ed., New York: Psychology.
- [10] Li, Y. Wei, F. Ren, S. and Di, Y. (2015). Locus of control, psychological empowerment and intrinsic motivation relation to performance. *Journal of Managerial Psychology*, 30, 422-438.
- [11] Shannak, R. and Al-Taher, A. (2012). Factors affecting work locus of control: An Analytical and comparative Study. *Jordan Journal of Business Administration*, 8(2), 373-389.
- [12] Chen, T. and Leung, K. (2016). When does supervisor support encourage innovative behavior? Opposite moderating effects of general self-efficacy and internal locus of control. *Personnel Psychology*, 69(1), 123-158.
- [13] Hurrell, J. Joseph, J. Levi, L. and Murphy, L. (2011). Locus of control. *Encyclopedia of Occupational Health and Safety*.
- [14] Conley, S. and You, S. (2014). Role stress revisited: Job structuring antecedents, work outcomes, and moderating effects of locus of control: *Educational Management Administration & Leadership*: 42(2) 184-206.
- [15] Vandenberghe, C. and Panaccio, A. (2015). Delving into the motivational bases of continuance commitment: Locus of control and empowerment as predictors of perceived sacrifice and few alternatives. *European Journal of Work and Organizational Psychology*, 24, 1-14.
- [16] Sharma, D. (2016). A Study on employee motivation in Private School. *Journal of Nepalese Business Studies*, 9(1), p.91.
- [17] Shukla, N. (2012). How motivation factor affect the organizational effectiveness. *International Journal of Management Research and Reviews*, 2, 430-435.
- [18] Urosevic, S. and Milijic, N. (2012). Influence of demographic factors on employee satisfaction and motivation. 45, 174-182.
- [19] Hunter, M. (2012). How motivation really works: Toward motivation. *Economics, Management, and Financial Markets*, 7(4), 138-196.
- [20] Qrbany, R. (2010). Assessment needs and motivational factors internal and external employees case study of Islamic Azad University Abhar. *Journal of Behavioral Sciences*. 2(4): 91-18.
- [21] Toode, K. Routasalo, P. and Suominen, T. (2011). Work motivation of nurses. *International journal of nursing studies* 48: 246-257.
- [22] Galletta, M. Portoghese, I. Pili, S. Piazza, M. and Campagna, M. (2016). The effect of work motivation on a sample of nurses in an Italian healthcare setting. 54: 451-460.
- [23] Jooste, K. and Hamani, M. (2017). The motivational needs of primary health care nurses to acquire power as leaders in a mine clinic setting. *Health SA Gesondheid*. 22, 43-51.
- [24] Jones, G. and George, J. (2011). *Contemporary management. Motivation and performance*. Global Ed, McGraw-Hill-Irwin.
- [25] Marquis, B. and Huston, C. (2012). *Leadership roles and management functions in nursing: Theory and application*. 8th ed., China: Walters Kluwer, Williams & Wilkins. 340, 270.
- [26] Pinto, E. (2011). The influence of wage on motivation and satisfaction. *The International Business & Economics Research Journal*, 10(9), 81-91.
- [27] Tohidi, H. and Jabbari, M. (2012). The effects of motivation in education. *Proced - Soc Behav Sci*. 31.
- [28] Said, R. Abed, F. and Abdo, L. (2013). Work motivating factors as identified by nurses in Children Hospital at Elmonira and specialized Pediatric Hospital Cairo University. *Med. J. Cairo Univ*. 81(2), pp. 27-31.
- [29] Adzei, F. and Atinga, R. (2012). Motivation and retention of health workers in Ghana's district hospitals. *Journal of Health Organization and Management*, 26(1), pp. 467-485.
- [30] Mohamed, Z. and Nimran, U. (2014). The Role of motivation in human resources management: The importance of motivation factors among future business professionals in Libya. *IOSR-JBM*; 16(8).
- [31] Akhtar, N. Aziz, S. Hussain, Z. Ali, S. and Salman, M. (2014). Factors affecting employees motivation in banking sector of Pakistan. *Journal of Asian Business Strategy*, 4, 125-133.
- [32] Gow, J. George, G. Mwamba, S. Ingombe, L. and Mutinta, G. (2012). Health worker satisfaction and motivation: An empirical

- study of incomes, allowances, and working conditions in Zambia. *International Journal of Business and Management*, 7(10), 37-48.
- [33] Ahmad, A. Idris, M. and Hashim, M. (2013). A study of flexible working hours and motivation. *Asian Social Science*, 9(3), 208-215.
- [34] VAN WYK C. (2011). Evaluating motivational levels of employees in a contemporary South African organization. At the Nelson Mandela Metropolitan University.
- [35] Kheirkhah, M. Masrouf, M. Sefidi M. and Jalal, E. (2017). The relationship between job motivation and its dimensions with organizational commitment and its dimensions in midwives of sanitary and therapeutic centers, Arak University of Medical Sciences. *Journal of Family Medicine and Primary Care*; 7 (2).
- [36] Ali, S. Mahdi, A. and Malihe, J. (2012). The effect of employees' performance appraisal procedure on their intrinsic motivation. *International Journal of Academic Research in Business and Social Sciences*, 2(12), 161-168.
- [37] Ariely, D. (2012). What makes us feel good about our work. RiedelaPlata.
- [38] Hannagan, T. (2010). Management concepts & practices. Organizational motivation. FT Prentice Hall, London.
- [39] Schalk, R. (2011). The Influence of organizational commitment and health on sickness absenteeism: A longitudinal study. *Journal of Nursing Management*, 19 (5), 596-600.
- [40] Hashemian, M. Fallahi, A. and Akaberi, A. (2014). Health locus of control associated with attitudes toward breast cancer in women with a positive family history of breast cancer in Sabzevar. *Iran J ObstetGynecolInfertil*.
- [41] Sattar Khan, A. and Farooq, J. (2015). The study of organization commitment and job satisfaction among hospital nurses. A Survey of District Hospitals of Ismail Khan. *Glob JInc*;15: 16.
- [42] Veličković, V. Višnjić, A. Jović, S. Radulović, O. Šargić, Č. and Mihajlović, J.(2014). Organizational commitment and job satisfaction among nurses in Serbia: A factor analysis. *Nurs outlook*. 62(6): 415-27.
- [43] Mahdavi, M. Arab, M. Mahmoudi, M. Fayazbakhsh, A. and Akbari, F. (2014). Organizational commitment and intention to leave among Hospitals' employees in Tehran Hospitals. *Journal of Hospital*. 12(4): 19-29.
- [44] Meyer, J. (2016). Employee commitment: an introduction and roadmap. 1st ed., Cheltenham, UK: Edward Elgar publishing.
- [45] Dorgham, S. (2012). Relationship between organization work climate and staff nurses organizational commitment. *Nat Sci* 10:80-91.
- [46] Zeinabadi, H. (2010). Job satisfaction and organizational commitment as antecedents of organizational citizenship behavior (OCB) of teachers. *Procedia-Social and Behavioral Sciences*. 5: 998-1003.
- [47] Bagheri, M. (2010). The effect of organizational commitment on organizational performance. *NAJA human resources journal*. 7(30): 73-96.
- [48] Humphrey, B. (2014). External vs. Internal Locus of Control; At: <http://www.ehow.com/>. On: 2/9/2018.
- [49] Özen-Kutunis, M. Mesci, M. and Övdür, Z. (2011). The effects of locus of control on learning performance: A case of an academic organization. *Journal of Economic and Social Studies*, 1(2).
- [50] Rahmazade, E. Parsa Yekta, Z. Farahani, M. and Yekani Nejad, S. (2014). Nurses' organizational commitment in hospitals affiliated to Tehran University of Medical Sciences. *Iran Journal of Nursing*. 26(86): 29-38.
- [51] Seyedghibi, F. and Borhani, F. (2014). The Relationship between organizational commitment and moral sensitivity of nurses in hospitals affiliated to Shiraz University of Medical Sciences. *International Journal of Management and Humanity Sciences*. 3(8).
- [52] Rotter, J. (1966). Generalized expectancies for internal versus external control of Reinforcement. *Psychological Monographs*, 80, 609.
- [53] Pettijohn, T. Pettijohn, T. and Sacco, D. (2005). A locus of control measure as a teaching demonstration. *Psychological Reports*, 97(2), 666.
- [54] Daneshkohan, A. Zarei, E. Mansouri, T. Maajani, K. Siyahat Ghasemi, M. and Rezaeian, M. (2015). Factors affecting job motivation among health workers: A Study From Iran, *Global Journal of Health Science*; 7(3).
- [55] Abdelwahab, E. Ahmed, R. and Elguindy, H. (2017). The relationship between organizational commitment and anticipated turnover among staff nurses in university hospital. *Egypt J Health Care* 5(2):237-251.
- [56] Allen, N. and Meyer, J. (1996). Affective, continuance, and normative commitment to the organization: An examination of construct validity. *Journal of Vocational Behavior*, 49(3), 252-276.
- [57] Thompson, S. (2013). The impact of locus of control on decision making styles of midlevel managers. Retrieved from: <http://udini.proquest.com/docview/219916906>.
- [58] Hussain, A. and Haider, Z. (2014). Investigating the relationship among organizational commitment, job satisfaction and emotional intelligence -evidence from teachers at Secondary level in Pakistan. *Journal of Education and Social Sciences*. 2(2): 127-143.
- [59] Dadgar, H. Barahouei, F. Mohammadi, M. Ebrahimi, M. and Ganjali, A. (2013). The relationship between organizational culture, job satisfaction, organizational commitment and intention to stay of health personnel's of Zahedan University of Medical Sciences. *World Appl Sci J* 21:1220-1228.
- [60] Kamdron, T. (2015). Work Motivation: Relationships with job satisfaction, locus of control and motivation orientation. *International Journal of Liberal Arts and Social Science*. 3 (6).
- [61] Alhakami, I. and Baker, O. (2018). Exploring the factors influencing nurse's work motivation. *Iris Journal of Nursing & Care*. 1(1).
- [62] Sahraian, A. Omdivar, B. Ghanizadeh, A. and Bazrafshan, A. (2014). Association of job stress with locus of control in nurses. *Shiraz E-Med J*. 15(2).
- [63] El-Sayed, R. and Abdel-Aleem, M. (2014). Relationship between head nurses' locus of control and staff nurses' job empowerment. *Med. J. Cairo Univ.*, 82(1).
- [64] Pourhoseinzadeh, M. Ghebizadeh, M. Moradikalboland, M. and Cheraghian, B. (2017). The relationship between health locus of control and health behaviors in emergency medicine. *IJCBNM*. 5(4): 397-407.
- [65] Agwu, M. (2013). Impact of fair reward system on employees' job performance in Nigerian Agip Oil Company Limited Port-Harcourt. *BJESBS*, 3(1), pp.47-64.
- [66] Miligi, E. Habib, F. and Al fozan, H. (2015). Assessment of work environment and employee's commitment in College of Nursing. *International Journal of Advanced Research in Computer Science and Management Studies*; 3(4).
- [67] Lorber, M. and Savič, B. (2014). Factors affecting nurses' organizational commitment in Slovenian hospitals. *Obzor Zdrav Neg* 48: 294-301.
- [68] Nasiripour, A. Raeissi, P. Omrani, A. Khosravizadeh, O. and Alirezaei, S. (2015). The Relationship between nurses' organizational commitment and services quality. *International Campus, Iran University of Medical Sciences, Tehran, Iran*.
- [69] El-Demerdash, S. Basal, A. Al-Deeb, G. (2013). The relationship between burnout and organizational commitment among nurses at Tanta University Hospital. *J Nurs Health Sci* 2: 20-28.
- [70] Gholamhossein, E. (2015). The relationship between job motivation, job attachment, and organizational commitment in teachers with the managers' efficiency in the education department of Zanjan Province. *Journal of Productivity Management*. 8 (32).
- [71] Shirzad, K. Shamani, S. Noroozi, M. and Shamani, S. (2012). Comparative Study of organizational commitment and Its outcomes in private and State Hospitals of Semnan Province. *Journal of Healthcare Management*. 4(1): 33-42.
- [72] Ahluwalia, A. and Preet, K. (2017). Age-wise differences in relation to work motivation, organizational commitment and locus of control: A Study of University teachers. *International Journal of Commerce and Management*, 11(1).
- [73] Morowatisharifabad, M. Mahmoodabad, S. Baghianimoghdam, M. and Tonekaboni, N. (2010). Relationships between locus of control and adherence to diabetes regimen in a sample of Iranians. *Int J Diabetes Dev Ctries*. 30:27-32.
- [74] Boumans, N. De Jong, A. and Janssen, S. (2011). Age-differences in work motivation and job satisfaction: The influence of age on the relationships between work characteristics and workers' outcomes. *International Journal of Aging & Human Development*, 73, 331-50.

- [75] Motazedi, Z. (2012). Organizational commitment of nurses in Iran. *European Journal of Scientific Research*; 75(2): 163-8. Organizational commitment in the employees working in Hospitals Affiliated to the Zabol University of Medical Sciences. *J Health Sci Technol*. 1(4):185-192.
- [76] El hamirad, S. Faraji, O. Ramazani, A. and abadizadeh, A. (2017).



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