

Role of Job Characteristics Model on Nurses' Work Motivation and Involvement in Intensive Care Units

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1.ABSTRACT

Background: Healthcare organizations are complex and issue to continuous changes due to economic and technical factors. These factors enforce the association to reshape the roles of the caregivers, especially nurses' role. Jobs that have attributes to autonomy, feedback, task identity, skill variety, and task significance make the condition for high work motivation and job involvement. **Aim:** The current study aims to determine the role of job characteristics model on nurses' work motivation and involvement in intensive care units, at Mansoura University Hospitals. **Design:** Descriptive correlational design was used. **Methods:** The study was conducted at all intensive care units at three Mansoura University Hospitals. The total sample was 180 nurse. Three tools were utilized; Job Diagnostic Survey, Work Extrinsic and Intrinsic Motivation Scale, and Job involvement Scale. **Results:** More than half of nurses had average level perception of job characteristics and almost two thirds of them had modest level of job satisfaction. More than half of nurses obligated high level of work motivation, and moderate level of work involvement. **Conclusion:** Based on the study findings, it was concluded that there was statistically significant positive relationship between levels of job characteristics and job satisfaction, and there was no statistically significant relationship between levels of job characteristics and both work motivation and work involvement levels. **Recommendations:** Encouraging nurses to make positive work deviations in the way they achieve their tasks and looking for alternative ways for goal successes. Providing open channels of communication and trustful relationships between top management, nurse manager and staff nurses to discuss their experiences, interests and views of their job

Keywords: *Involvement , ICU nurses , Job characteristics, Motivation*

2.Introduction:

Healthcare organizations are complex and subject to constant changes due to economic, social, political, and technological factors. These factors strength the organization to redesign the characters of the caregivers, especially nurse's role (Baghshykhi., Rahimi. Azizi-Fini, et al.2020). In addition, during their daily practice, nurses face dissimilar occupational and personal difficulties due to their heavy workload, occupational stress, and challenging work conditions. These stimulating conditions require nurses to continually regulate themselves to their work environment to deliver quality care (Lu, & While, 2019).

Job Characteristics Model (JCM) is created on the idea that a task is the key to the nurses' motivation. In short, a boring and repetitive job is disastrous to nurses' motivation whereas a challenging and adaptable job has a positive effect on motivation. The theory requires five job characteristics that are predicted to benefit individuals' psychological state and job results. The theory also includes individual variables that

may function as moderators to characterize the association between the job characteristics and work motivation (Hoonakker et al.,2021)

Motivation in the work context is specified as an individual's mark of will to exert and maintain an effort to organizational goals. Nurses have different challenging wants that are driven by various motivators. Therefore, to increase organizational performance, organization and its managers should understand what really motivates the nurses (Baljoon, Banjar, & Banakhar,2018). Work motivation is a critical influence on work performance and the outcomes of work in health care organizations. Nurses' work motivation has an impact on the quality of nursing practice, as well as on the well-being and retention of the nursing workforce and being involved in the work. Job involvement was an significant variable in influential the motivation of nurses and elevated work performance. Job involvement goes beyond the application of energy into the job but carries

along emotions and self-perceived goals with the job (Chipu et al., 2020)

Job involvement was an significant variable in shaping the motivation of nurses and elevated work performance. Job involvement drives beyond the application of energy interested in the job but carries beside emotions and self-perceived goals with the job (Olusola et al.,2021). Basically, job involvement is an important work concept for prisons, and the effect that different work environment variables. Moreover, job involvement results in lower job stress, absenteeism, and turnover intent and improved job satisfaction and organizational commitment (Lambert, Liu, Jiang, Zhang,& Kelley,2018). According to Hackman and Oldham (1980), positive job designs also provoke achieving the organization's goals and increase nurses' motivation, job satisfaction, and job involvement. In the current study the main outputs of job characteristics model are work motivation and involvement which are used to inform the mediating dependent variable in the study.

2.1Significance of the study:

Nursing care is the most important feature of nurses' clinical activities. The main goal of nursing amenities is to provide the clients with quality care to advance the outcomes of the services given to the patients and society. Intensive Care Unit (ICU) work is complex and powerful, and nurses should be prepared to deliver care to patients with important hemodynamic alterations at any time, which mandatory specific knowledge and great skill to make decisions and put them in practice in due time. Nurses working in ICU undergo more stress compared to the nurses in other units. The basic proposition of the present study is that ICU nurses work motivation and involvement arise from the characteristics of jobs. Jobs that have characteristics to autonomy, feedback, task identity, skill variety, and task significance make the condition for high work motivation and job involvement. There are no studies have been shown in Intensive Care Units at Mansoura University to study how Intensive Care nurses job characteristics influence their work motivation and involvement.

2.2Aim of the Study:

This study aims to determine the role of job characteristics model on nurses' work motivation and involvement in intensive care units, at Mansoura University Hospitals.

2.3Research Hypotheses:

The specific research hypotheses are:

H1. Skill variety will be correlated with work motivation and involvement.

H2. Task identity will be correlated with work motivation and involvement.

H3. Task significance will be correlated with work motivation and involvement.

H4. Autonomy will be correlated with work motivation and involvement.

H5. Feedback will be correlated with work motivation and involvement.

3.Method

3.1Research Design:

Descriptive correlational design was utilized to conduct this study.

3.2Setting:

The study was conducted at all intensive care units at three Mansoura University Hospitals which are Main Mansoura University Hospital, Emergency Hospital and Specialized Medical Hospital that offer a inclusive field of health services at Delta Region. Main Mansoura University Hospital with bed capacity of 1860 bed. Emergency Hospital with bed capacity 500 bed. Specialized Medical Hospital with bed capability 194 bed. The total bed capacity of all study intensive care units at study hospitals was 61 beds.

3.3Study sample:

The study had a convenience sample of all accessible nurses (n=180) at the time of data collection and who working in the previous mention intensive care units and having a minimum of one-year experience.

3.4Tools of data collection:

The data of this study was collected by using three tools namely, Job Diagnostic Survey (JDS), Work Extrinsic and Intrinsic Motivation Scale (WEIMS), and Job involvement Scale (JIS) .

Tool I: Job Diagnostic Survey (JDS). It consisted of two parts:

Part I: Personal characteristics. This part remained used to identify personal characteristics of the studied nurses as age, educational qualification, and years of experience.

Part II: It includes job dimensions which developed by Hackman and Oldham, (1980) in model of job characteristics. It includes 16 statements that used to assess characteristics of job domains of nurses that considered under five dimensions namely, skill variety (4 items), task identity (3 items), task significance (3 items), autonomy (3 items), feedback from the job itself (3 items). This model also includes 19 statements used

to degree the mechanisms of the job satisfaction and divided into two sections, namely, general satisfaction (5 items), and specific satisfaction: pay (2 items), security (2 items), social (3 items), supervisor (3 items), as well as growth (4 items). The responses related to characteristics of job dimensions scored using 7-point rating scales ranged from extremely disagree (1) to extremely agree (7). While the responses related to job satisfaction scored using 7-point rating scales ranged from really dissatisfied (1) to extremely satisfied (7).

Scoring system for job dimensions for job characteristics:

It was characterized into two levels according to cut off fact as the following:

- Average 50%-75% (scored from 50 - 75)
- Good >75% (scored from 76 - 100)

Scoring system for job satisfaction:

It was categorized into three levels according to cut off point as the following:

- Low level job satisfaction (< 50%).
- Moderate level job satisfaction (50% -75%).
- High level job satisfaction (>75%).

Tool II: Work Extrinsic and Intrinsic Motivation Scale (WEIMS).

It was developed by **Tremblay, Blanchard, Taylor, et al. (2009)** to measure the level of work motivation among nurses. This scale was adapted based on self-determination theory (SDT). It contains of 18 items that can be distributed into six domains, corresponding to the six types of motivations postulated by self-determination theory (SDT) namely; Intrinsic Motivation (IM) which refers to nurses releases behavior to knowledge pleasure and satisfaction at work so, they have the ability to do an autonomous activity because it is interesting and agreeable; Integrated regulation (INTEG) where a nurse identifies the value of an activity to the extent that it becomes part of his/her sense of self; Identified regulation (IDEN), where a nurse has greater self-determination and choice in an activity because the behavior matches his/her personal goal and identities; Introjected regulation (INTRO) refers to the regulation of behavior concluded the internal pressure of forces such as ego-involvement, shame and guilt. So where behavior or action is taken in by a person but has not been accepted as a part of him/her; External regulation (EXT), which refers to commitment to activities for instrumental reasons, such as receiving rewards, approval, avoiding punishment and where the certain activity is done to obtain a

reward, and finally, A motivation (AMO) which refers to the absence of motivation for an activity. For each 6 domains includes 3 items. Item in each subscale is scored on a Likert-type scale, from 1 (strongly disagree) to 5 (strongly agree). The score of each subscale can be generated using the mean score of the 3 items within the subscale.

Scoring system: For determining studied subjects' work motivation level **Mahmoud, (2008)** was used:

- Low level work motivation (< 50%).
- Moderate level work motivation (50-75%),
- High level work motivation (> 75%).

Tool III: Job Involvement Scale (JIS).

It was developed by **Kanungo, (1982)** to evaluate job involvement among nurses in workplace It is consists of 10 items to evaluate study subjects job involvement. The 10 items were summated to offer a total involvement score. High scores reproduce a higher level of work involvement. The response options also fluctuated on a 5-point Likert-type scale from 1 (strongly disagree) to 5 (strongly agree).

Scoring system

It was categorized into three levels according to cut off point as the following:

- Low level work involvement < 50% (scored from 10 - 24)
- Moderate level work involvement 50-75% (scored from 25 - 37)
- High level work involvement > 75% (scored from 38 - 50)

3.5 Validity and reliability

Was recognized for face and content validity via a panel of five expertise from faculty of nursing at Mansoura University who reviewed the tools for clarity, relevancy, applicability, comprehensiveness, understanding, and ease for implementation and according to their opinion's modifications were applied. The modifications were related to rephrase of some sentences. Reliability test of the study tools, job diagnostic survey, work extrinsic and intrinsic motivation scale, and job involvement scale was done using the alpha Cronbach coefficient to assess the internal consistency of the tools and it was (0.89, 0.91, and 0.88) for three tools respectively.

3.6 Pilot study:

A pilot study was carried out on 18 nurses as 10% of the study sample for testing the clarity, feasibility of the questions, identifying difficulties and problems that may be encounter during data

collection and for determining the time wanted to fill-in questions. Studied nurses who participated in the pilot study were excluded from the total sample to appraise the clarity, feasibility and applicability of the tools and necessary corrections were done based on their responses.

3.7 Ethical considerations:

Ethical approval was obtained from the Research Ethical Committee of Faculty of Nursing, Mansoura University. An official permission to conduct the study was obtained from the accountable administrator of the hospital. Oral arrangement was obtained from nursing staff who accept to participate in the study after providing the explanation of nature and aim of the study. All participants were knowledgeable that the study is voluntary, and they have the right to withdraw from the study at any time. All members were assured about the confidentiality of the collected data and the privacy of the study sample was assured at all phases of the study.

3.8 Data collection:

The questionnaire sheets (I, II and III) were disseminated to the available studied nurses. The researcher collected data through interviewing and distributing questionnaire to each subject in the study during work hours in morning, afternoon and night shifts. The aim of the study and how to fill tools were explained by the researcher. Studied nurses read the questionnaires and filling it individually. Sheets required from 25-30 minutes.

The data collection persisting for three months from start of February 2021 to end of April 2021.

3.9 Data analysis:

The collected data were prearranged, tabulated and statistically investigated using SPSS software (Statistical Package for the Social Sciences, version 22, SPSS Inc. Chicago, IL, USA). The categorical variables were represented as frequency and percentage. Continuous variables were represented as mean, and typical deviation. Independent t-test was used to test the difference between two means of continuous variables. ANOVA test was used to test the difference between more than two means of continuous variables. Chi-square test was conducted to test the association between two categorical variables. Pearson correlation coefficient test was showed to test the association between two continuous variables. Statistically significant was reflected at p-value ≤ 0.01 & 0.05) Moore et al, (2013) .

4. Results :

Table (1) shows personal characteristics of the studied nurses. According to the table the most of studied nurses (92.2%) were in age group between 20-30 years old, and more than half of them (56.1 %) were female. As well as more than half of studied nurses (55.6%) had from 1-5 years of experience and had a technical degree of education. Most of them (62.8%) were married.

Table (1): Personal characteristics of the studied nurses (n=180)

Characteristics	Studied nurses (n=180)	
	No.	%
Age years		
20- 30	166	92.2
31-40	10	5.6
> 40	4	2.2
Gender		
Male	79	43.9
Female	101	56.1
Experience years		
1-5	100	55.6
6-10	65	36.1
> 10	15	8.3
Educational qualification		

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Diploma degree	7	3.9
Technical degree	100	55.6
Bachelor degree	73	40.6
Marital status		
Single	67	37.2
Married	113	62.8

Figure (1) shows percentage of job characteristics as perceived by studied nurses. The highest percentage was (77.73%) reported for task significance. While the least percentages were (72.7%)and (73.8%) for skill variety and nurses' autonomy respectively.

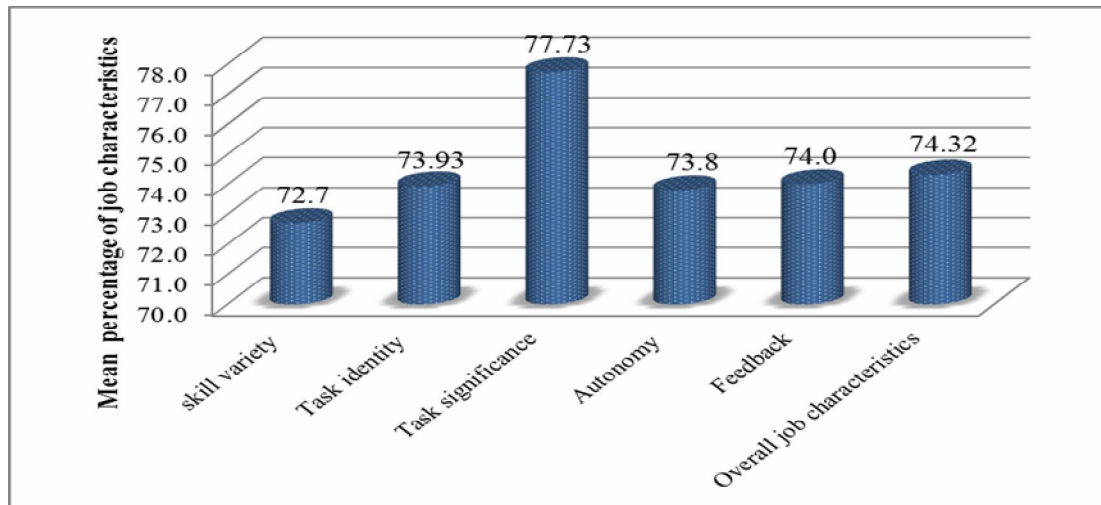


Figure (1): Percentage of job characteristics as perceived by studied nurses (n=180)

Figure (2) show levels of job characteristics as perceived by studied nurses. This figure revealed (58.3%) of the studied nurses had average level perception of job characteristics in addition the (41.7%) of them had good perception.

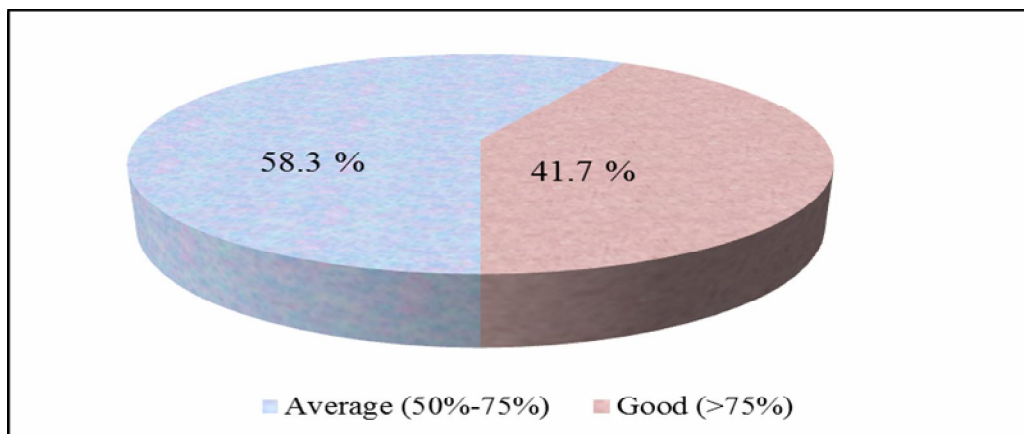


Figure (2): Levels of job characteristics as perceived by studied nurses (n=180)

Figure (3) shows levels of work motivation among the studied nurses. According to this figure slightly more than half of the studied nurses (51.7%) had high level of work motivation and (46.7%) had moderate level of work motivation whereas 1.7 % of the considered nurses had low level of work motivation.

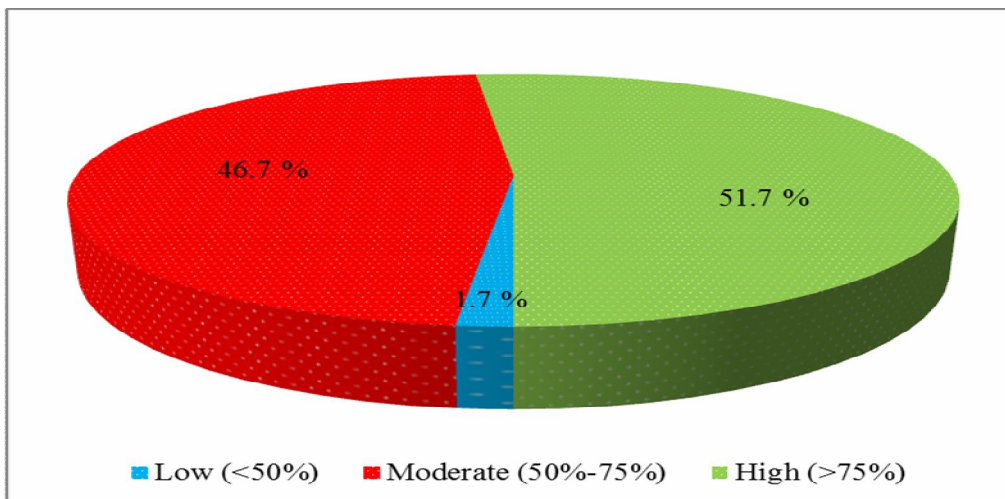


Figure (3): Levels of work motivation among the studied nurses (n =180)

Figure (4) shows levels of work involvement among the calculated nurses. According to this figure slightly more than half of the studied nurses (56.7%) had moderate level of work involvement and more than one third of them (41.7%) had high equal of work involvement whereas 1.7 % of the calculated nurses had low level of work involvement.

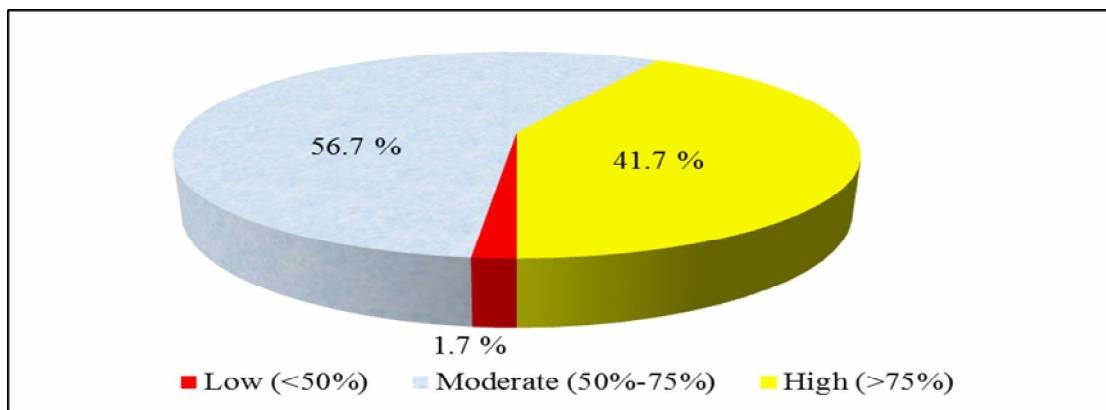


Figure (4): Levels of work involvement among the studied nurses (n =180)

Table (2): shows relationships between job characteristics, job satisfaction, work motivation and work involvement. This table revealed that there was statistically significant relationship between nurses’ overall job characteristics and job satisfaction except task significance. As well as there was no statistically significant relationship between dimensions of job characteristics, work motivation, and work involvement.

Table (2): Relationships between job characteristics, job satisfaction, work motivation and work involvement (n=180)

Job characteristics domains	Work motivation		Work involvement		Job satisfaction	
	R	P	r	p	R	P
▪ Skill variety	0.11	0.13	0.10	0.14	0.23	0.002**
▪ Task identity	0.05	0.45	0.008	0.91	0.23	0.002**
▪ Task significance	0.09	0.21	0.05	0.48	0.08	0.25
▪ Autonomy	0.02	0.78	0.07	0.32	0.21	0.004**
▪ Feedback	0.08	0.29	0.07	0.36	0.17	0.01*
Overall job characteristics	0.10	0.16	0.06	0.42	0.26	0.000**
Job satisfaction	0.11	0.15	0.11	0.12	1	

Statistically significant (p ≤0.05) / ** Highly statistically significant (p ≤0.01)

Figure (5) shows relationship between total job characteristics, and total job satisfaction of the calculated nurses. This figure exposed that there was statistically significant positive relationship between total nurses' job characteristics and their job satisfaction ($p=0.000$).

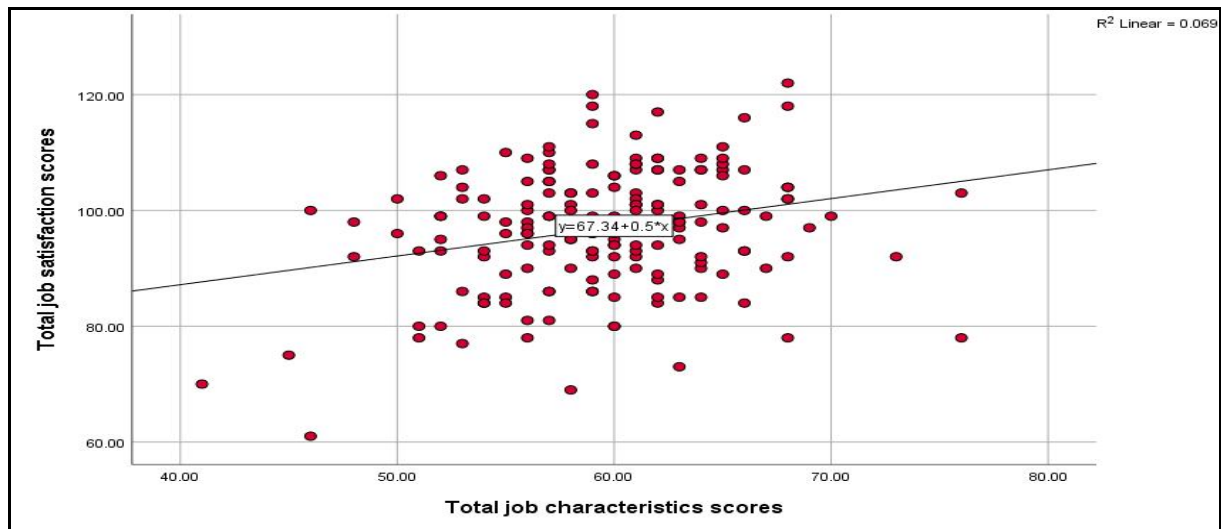


Figure (5): Relationship between total job characteristics, and total job satisfaction of nurses (n=180)

5. Discussion :

Nursing portion represents the most of health care organizations, have a direct contact with patient, and provide full-required nursing care in professional manner under different types of demands and stressors with high quality of care (Krijghsheld, Tummers. and Scheepers 2022). Nurses constitute most human resources in hospital with 24-hour care service because they are the largest health care workforce who have the most important components in provision of quality health care (Kim, & Cho, 2022, & Al-Haroon & Al-Qahtani, 2020). Accordingly, organizations are more focused on improving nurses' happiness, employee well-being, and organizational health. Knowing how to achieve the best level of motivation and involvement among all nurses is a duty Fernández-Salinero et al., (2020). Hence the present study focused on determine the role of job characteristics model on nurses' work motivation and involvement in intensive care units at Main Mansoura University Hospital.

Job Characteristics Model (JCM) resources situated at the job level may take the form of the five cores. Were to appeal three psychological states in nurses. These five characteristics lead to a lot of satisfactory personal and work results. The mediators must moderate the influences between the job characteristics and psychological conditions, and between the psychological states and the outcomes (Hoonakker et al., 2021). Moreover, Hackman and Oldham (1980) who defined the five job characteristics as skill Variety,

task Identity, task significance, autonomy, and feedback.

Findings of present study related to nurses' perceptions regarding domains of job characteristics revealed most studied nurses report more than a half of nurses had an average level of job characteristics. Similarly, Yuxiu, Kunaviktikul, Thungjaroenkul, (2011) results who found nurses detailed that their job characteristics were required. While a study done by Baghshykhi, et al (2020) to evaluate the relationship between job characteristics work alteration among Iranian nurses and indicated that the mean score of JCs was at a good level.

As regards work motivation among the studied nurses:

work motivation is an important measure of healthcare professional's response to the increasing challenges. Motivation is a process that starts with an inspiration to perform and energized to end. It initiates behaviors to accomplish goals. Motivation is a complex, multidimensional and, therefore, force within individual that influence or direct behavior. Motivation is a concept used to describe an external state exciting a special behavior and internal responses revealing that behavior. In the organizational context, motivation is explained as the stimulus of work behavior, which channels the worker's effort to accomplish the organization goals Sheta et al, (2021) .

Findings of the present study revealed a half of the studied had a high work motivation. This may be due to in their work mechanisms for

facilities, supervisors, and colleagues to recognize nurses who perform well would be an inexpensive, yet effective way to increase job satisfaction and motivation; and improving health system performance. This is the same line of **Kumar et al, (2013)**. This is disagreed with **Ayalew, et al (2019)** who examined job satisfaction, motivation and associated factors among nurses working in the public health facilities of Ethiopia and found low motivation among nurses. They recommended Ministry of Health needed to strengthen the human resource management system and practices to improve nurses' overall job satisfaction and motivation, especially among nurses with 5 to 10 years of experience on the job.

As regards work involvement of the studied nurses

Work involvement is the relationship between the character of the nurses' response to the work environment and the level of their influence with the workplace and dynamics of the work environment. Nurses have a high level of self-efficacy and involvement who had a high level of autonomy, inclusion and participation in their Work (**Ali et al, 2019**).

The present study show levels of work involvement among the studied nurses were more than half of the studied reported moderate job involvement This is agreed with **Kassem et al, (2022)** who studied effect of job crafting training program on staff nurses work involvement at Mansoura University Hospital and mentioned most nurses were moderate level of job involvement related to strong link between reduce work requirements, obstacles, increase job resources. Also, (**Eriksen et al, 2020**) who studied nurses' job involvement and association with continuing current position in Norway had who found no significant association between nurses motivated by the opportunity to make difference in people's life and their job involvement .

As regards relationship between job characteristics, satisfaction, work motivation and work involvement

Regard correlation between job characteristics, job satisfaction, work motivation and work involvement in relation to personal characteristics for studied nurses the finding of the study revealed that there was no statistically significant difference of job characteristics score related personal characteristics of the studied nurses. This is accepted with **sheta et al, (2022)** who studied about relationship between motivational factors and job autonomy among staff

nursing who found no significance between demographic characteristics on motivation level of studied staff. And show no significance between staff nurse's level of autonomy and personal characteristics.

According to **Othman et al, (2019)** who studied about job characteristics and staying engaged in work of nurse in Malaysia and found nurses in Malaysian public hospitals are restrictive to experience a major workload. They added variety of tasks requiring various sets of skills may be judged as part of their mostly demand workload. to these experienced nurses, skill variety seems to be less benefit to them since this attribute brings only more tasks and results in the decreased chance to use their accumulated specialized skills. In consistent with **Pham Thu Trang (2022)** who examined work characteristics affect job performance in Vietnam and reported that nurses had skill variety was not statistically related to the feeling of ownership of the job and it part of the work's complexity.

Finally these findings suggest the important role of job characteristics model on nurses' work motivation and involvement in Intensive Care Units at Mansoura university, Because nursing typically takes up the majority of a caregiver's time, it is vitally necessary to support nursing work in the right ways **Suby ,(2022)**. Although it is still often used, Working Responsibilities of Health Care Personnel in Hospitals does not take into account the changes in nurses' duties. the need to restructure the nursing care delivery system to match the shifting expectations of customers, according to the results of the current study.

6.Conclusion:

Based on the study findings, it was concluded that more than half of nurses had average level perception of job characteristics and nearly two thirds of them had moderate level of job satisfaction. More than half of nurses had high level of work motivation, and moderate level of work involvement. There was statistically significant positive relationship between levels of job characteristics and job satisfaction levels of nurses. There was no statistically significant relationship between levels of job characteristics and both work motivation levels and work involvement levels of the studied nurses.

7.Recommendations:

Based on results of the present study the following recommendations can be suggested:

- Establishing clear policies and rules within the hospitals to provide information and

experiences opportunities about the significance of job characteristics to improve nurse's involvement and motivation.

- Providing open channels of communication and trustful relationships between top management, nurse manager and staff nurses to discuss their experiences, interests and views of their job.
- Establishing positive motivation environment for increase motivation for staff nurses.
- Establishing motivation system and rewarding good work.
- Encouraging teamwork spirit among nurses.
- Facilitating workshops for nurses that improve sharing feeling, strengthen collaboration to establish healthy work environment and to raise the awareness of nurses.

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