

Relationship between Professional Image and Autonomy among Staff Nurses

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Abstract

Background: Autonomy is the main component of professional nursing practice, which leads to improve patient outcomes. Nurses who have a higher degree of autonomy in their practice provide fine patient care. **Aim:** This study aimed to assess the relationship between professional image and autonomy among staff nurses. **Design:** A descriptive correlational design was utilized for conducting the study. **Setting:** conducted at Benha ophthalmic hospital which affiliated to Egyptian ministry of health. **Subjects:** Convenience sample of 140 staff nurses. **Tools of data collection:** The data in this study were collected by using two tools namely perceptions of professional nursing tool (PPNT) & autonomy questionnaire. **Results:** More than half 51.4% of the studied nurses had a moderate level of perception regarding professional image. While, nearly two third of the studied nurses had a moderate autonomy. **Conclusion:** It concluded that there was a highly positive correlation between staff nurses' professional image and their autonomy. **Recommendation:** Nurse managers should encourage staff nurses to participate in decision-makings and provide continuous in-service education to increase nurses' knowledge base to improve autonomy.

Keywords: Autonomy, Professional Image, staff nurses.

Introduction:

The primary challenge in nursing is an image which is not highly appreciated and a lack of motivation due to low salaries and incentives. The existing weaknesses in the legislation of nursing in regards to nursing have left nurses with minimal social and human rights benefits (Abdelrahman, 2018).

Nurse is one of the most rewarding, fulfilling career paths nurses can pursue. Nursing role and practice is based on specialized knowledge and skills derived from principles of basic, applied sciences, and standards of professional performance. (Aghamohammadi et al., 2019).

Professional image is conveyed by how nurses present themselves in every setting, from the class-room, to clinics, to professional meetings and to the workplace. Nurses have become healthcare professionals in their own right who possess a great deal of knowledge. The public does not always value the skills and competences nurses have acquired through

education and innovation. The modern image of nursing appears to be more positive but is still based on myths, misconceptions and stereotypes (Thabet et al., 2020).

Professional image based on concepts as respect, empathy, cooperation, and self-regulation, nurses at hospitals like to work in an environment where feels comfortable and treated with respect, so nurses had a commitment to treat all members of health care, patients and their families. Nurses have to construct a healthy and productive professional relationship at work environment that reflect on health care outcomes (Collette et al., 2017).

The characteristics of professional image is defined as knowledge base power and authority over training and education, registration, altruistic service, a code of ethics, lengthy socialization and autonomy (Wangdi et al., 2019). There are five dimensions of professional organizations as major reference groups, belief in public services, autonomy,

self-regulation and a sense of calling (**Thabet et al, 2020**).

Autonomy is considered an essential element of the nursing professional status that is associated with health care organizations which face challenges and changes continuously and become have complex than before. These rapid changes in health care reimbursement require the enhancement of nurses' autonomy to manage these frequent changes. In reality autonomy is addressed in the context of authority, responsibility and accountability which are elements of professional practice. Thus, the nurse is described as a person who is autonomous and desires authority and accountability (**Santos et al, 2017**).

Autonomy is defined as the freedom that perform according to what nurses know with best interest of the patient, in order to make independent clinical decisions depend on nursing practice and interdependent of decisions based on health profession spheres where nursing overlaps with other disciplines which influence the effect of job freedom. (**Pursio et al , 2021**).

All the definitions basically comprise the same core components of the concept of autonomy (accountability, ability. control, independence, responsibility, authority and one's own practice), although they are expressed in different manners (**Nehad and Hussin, 2018**).

Attaining autonomy depends on certain conditions, such as the ability to make independent choices, freedom from coercion, rational and reflective thought and adequate information and knowledge (**Skar, 2017**).

Autonomy allows nurses to use their experience to improve care outcomes and increases their job satisfaction and relation. The importance of nurse autonomy has been indicated by studies investigating the professional work settings of hospitals with Magnet status, whose key feature is high nurse autonomy (**Rao. and Kumar, 2017**).

Clinical autonomy refers to nurses ' application of independent and interdependent clinical judgment to make patient care decisions. Operational autonomy refers to decision's nurses make in collaboration with managers employing participatory approaches. Professional autonomy refers to shared decisions nurses make to govern their professional practices and policies within an organization (**Parizad et al, 2021**).

Standardized professional image provides nurses a sense of pride in their profession and makes them feel recognized for their knowledge and education and these increase their feeling of autonomy. Give nurse more autonomy in decision making and control over work place will impact nurses' professional image in media, society and health service organization and will affect on their autonomy (**Collette et al., 2017**).

Significance of the study:

The researcher, working in Benha ophthalmic hospital observed that there is a lack of staff nurses' perception and interpretation regarding their profession and its' image as well as how this perception affects their work behavior. A poor professional image of staff nurses affects not only nurses' self-esteem, but also staff nurse's behavior in their workplace as autonomy, accountability and sense of responsibility which may affect quality of care provided. So, the present study will be conducted to assess relationship between professional image and autonomy among staff nurses.

Aim of the Study:

This study aimed at assessing the relationship between professional image and autonomy among staff nurses.

Research hypotheses:

There is a relationship between professional image and autonomy among staff nurses.

Subjects and Methods:**Research design:**

A descriptive correlational design was utilized for conducting the study.

Setting:

The study was conducted at Benha Ophthalmic Hospital which affiliated to Egyptian ministry of health. This hospital located at El-Qalioubia governorate. It rendered its services to El- Qalioubia and neighboring governorates as (Al-Menoufia, Al-Gharbiya, and Al Sharqia ...etc). It consists of one building contains 4 floors include outpatient department, economic department, emergency department, operation department and inpatient department. Bed capacity' of it is 60 beds and the number of patients at the last year was 160,000.

Study subjects:

Subjects of the study included all staff nurses available during the time of the study. Their total number was 140 staff nurses.

Sampling technique:

A convenience sampling technique was used.

Tools of data collection:

The data in this study were collected by using two tools: -

First tool: Perceptions of professional nursing (PPN) questionnaire

The tool used to assess perception of staff nurses regarding professional image of themselves. It includes two parts.

Part: personal characteristic:

This part designed to collect data about gather personal characteristic of study subjects including: age, gender, social status, level of education, and duration of working at nursing profession.

Part: This part developed by (Sand & Schaffer, 2006) and was adopted from (Rayan, 2017) and it aimed to assess staff nurses perceptions of professional image among, it

consisted of 37 (items) concerning three domains namely practice, value, and public image.

❖ Scoring system:

Responses of participants were measured at 5 points Likert scale ranged from strongly agree, agree, uncertain,

disagree, and strongly disagree. Strongly agree was scored as "5", while strongly disagree was scored as "1". These scores were summed up and were converted into a percentage score.

Perception level considered low if the total score was less than 60%. While it considered moderate if the score was ranged from 60-75% and it considered high if the total score more than 75%.

Second tool: - Autonomy questionnaire:

This tool used to assess level of autonomy among staff nurses. It developed by (Blegen, 1993) and was adopted from (Selim, 2019), it consists of 44 items which grouped under two main dimensions as decisions related to patient care and decisions related to unit work.

❖ Scoring system:

Responses of participants were measured at 5 points Likert scale, not authority and accountability were scored as "1", while had authority and accountability was scored as "5". These scores were summed up and were converted into a percentage score.

Perception level considered low if the total score was less than 50%. While it considered moderate if the score was ranged from 50-75% and it considered high if the total score more than 75%.

Operational Design:

The operational design for this study included three phases namely: preparatory phase, pilot study and field work.

Preparatory phase:

This phase started from January till March 2020. During this phase reviewed the previous and current, local and international related literature and theoretical; knowledge of various aspects of the study using books, articles, internet and periodical journals to be acquainted with study subject.

Pilot study:

A pilot study was conducted at April 2020; it was done on 14 staff nurses represented 10% of study subjects and before starting fieldwork and data collection. A pilot study was done for testing the clarity of questionnaire sheets, and their relevance to study. It also helped to estimate the time needed to complete the data collection forms. It took around 20 – 30 minutes to fill in the sheets. Those pilot study respondents were included in the main study sample because no modification was done.

Field work:

The data was collected through two weeks at June 2020. They completed sheets at different time shifts (morning-afternoon shift) depending on time of activities. The researcher were visiting the study setting 3days / week. The researcher distributed the questionnaire to the participants to fill the questionnaire and they completed sheets in the same day at 20 – 30 minutes. Whenever the nurse has not completed sheets the researcher left it another day. Sometimes some nurses lost the sheet; they were given another one until the completed sheet collected from every department. The researcher was simply explained the purpose of the study to the staff nurses who agree to participate in the study. Date was collected during study days through using the study tool by the researcher; clarifications were given whenever it was needed with reassurance about confidentiality of any obtained information as only a code number was used to mark each sheet using systematic serial numbers for each unit.

Ethical consideration: -

Prior to the actual work of research study, ethical approval was obtained from the

Research Ethical Committee of the Faculty of Nursing at Ain Shams University. In addition, official letter was obtained from Dean of the Faculty of Nursing, Ain Shams University to the director of hospital. The letter included the aim of the study and proposed benefits to obtain permission and cooperation for collecting data. The subjects were informed about their right to withdraw at any time without giving any reason and that the collected data would be treated confidentiality and used only for the purpose of the study.

3- Administrative Design: -

Before starting on the study, official and formal letters were issued from the Faculty of Nursing, Ain Shams University to the directors of the study settings, explaining the aim of the work, and the expected benefits. Ensuring confidentiality of the information obtained. Individual oral consent was also obtained from each participant in the study.

4-Statistical Design: -

The data were analyzed by using SPSS,(Statistical Package for Social Sciences),soft-ware program version 24,which was applied to frequency tables, statistical significance and relation were assessed using chi-square test and coefficient correlation to detect the association between the variables(P value),number and percentage ,mean and stander deviation(SD) were used. A significant level value was considered when $p \leq 0.05$ and A highly significant level value was considered when $p \leq 0.001$.

Results:

Table (1): reveals that more than half of the studied nurses (52.1%) are in age group from 30- 40 years old with mean score 36.78 ± 8.59 , also 68.6% of them were females, and 38.6% of them had a technical nursing education. Moreover 76.4% of them were married and 51.5% of them had 10<20 years of experience.

Figure (1): illustrates percentage distribution of the studied nurses' total perception regarding professional image .it indicates that more than half 51.4% of the

studied nurses had a moderate level of perception regarding professional image.

Figure (2): illustrates percentage distribution of the studied nurses' total autonomy, it indicates that nearly two third of them had a moderate autonomy.

Table (2): illustrates relation between studied nurses' personnel characteristics and their total professional perception score, it reveals that there was a highly statistically significant relation between studied nurses' total professional perception and their educational level $<0.001^{**}$. Moreover, there was a statistically significant relation between studied nurses' total professional perception and their age $<0.05^*$, gender $<0.05^*$, and years of experience $<0.05^*$. On the other hand, there was no statistically significant relation between studied nurses' total professional perception and their marital status >0.05 .

Table (3): illustrates relation between studied nurses' personnel characteristics and their total autonomy score, it shows that there was a highly statistically significant relation between studied nurses' total autonomy and their educational level. Moreover, there was a statistically significant relation between studied nurses' total autonomy score and their age, gender, and years of experience. On the other hand, there was no statistically significant relation between studied nurses' total professional perception and their marital status.

Table (4): illustrates matrix correlation between studied nurses total professional image perception and autonomy, it indicates that there was a highly positive association between studied nurses' professional image and their autonomy. that means improving professional image perception is highly associated with improving nurses autonomy ($r = .665$).

Table (1): Distribution of personnel and job characteristics of the studied nurses (n=140).

personnel characteristics	Frequency	%
Age in years		
<30	36	25.7
30-40	73	52.2
> 40	31	22.1
Mean \pm SD	36.78 \pm 8.59	
Gender		
Male	44	31.4
Female	96	68.6
Marital status		
Married	107	76.4
Not married	33	23.6
Level of education		
Diploma	38	27.1
High diploma	54	38.6
Bachelor of nursing	48	34.3
Years of experience		
<10	28	20.0
10<20	72	51.4
\geq 20	40	28.6
Mean \pm SD	13.65 \pm 5.63	

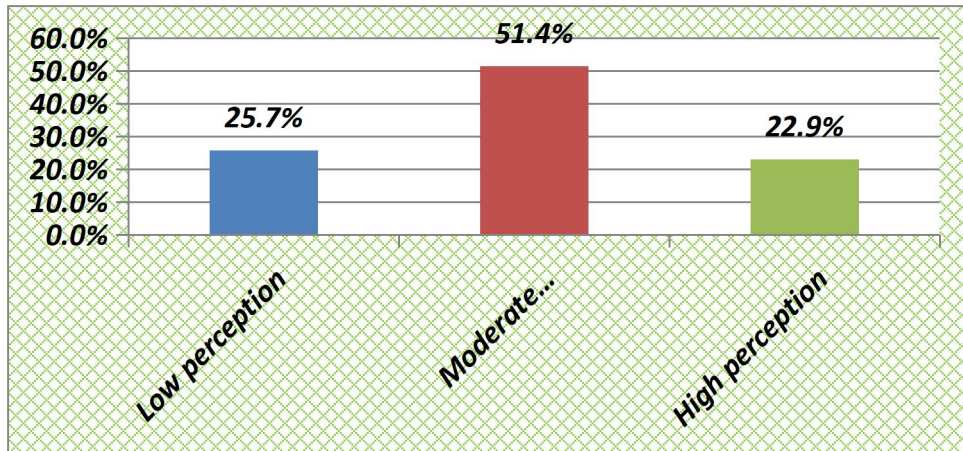


Figure (1): Distribution of studied nurses' total perception score regarding professional image (n=140).

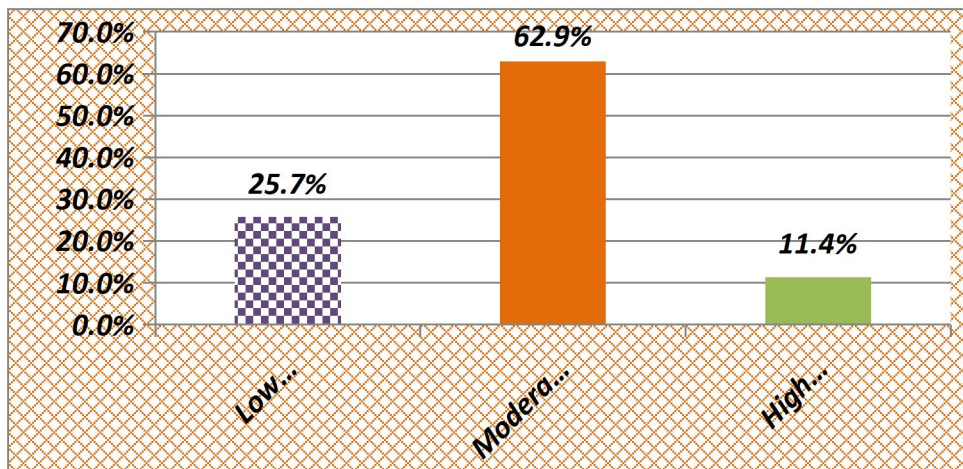


Figure (2): Distribution of studied nurses' total autonomy level (n=140).

Table (2): Relationship between studied nurses' personnel characteristics and their professional image perception level (n=140).

personnel characteristics	Total perception score						Chi square	P value
	Low N=36		Moderate N=72		High N=32			
	No	%	No	%	No	%		
Age in years								
<30	13	36.1%	18	25.0%	5	15.6%	10.54	<0.05*
30-40	19	52.8%	40	55.6%	14	43.8%		
> 40	4	11.1%	14	19.4%	13	40.6%		
Gender								
Male	20	55.6%	17	23.6%	7	21.9%	13.12	<0.05*
Female	16	44.4%	55	76.4%	25	78.1%		
Marital status								
Married	10	27.8%	18	25.0%	5	15.6%	1.55	>0.05
Not married	26	72.2%	54	75.0%	27	84.4%		
Level of education								
Diploma	24	66.7%	14	19.4%	0	0.0%	57.50	<0.001**
High diploma	7	19.4%	38	52.8%	9	28.1%		
Bachelor of nursing	5	13.9%	20	27.8%	23	71.9%		
Years of experience								
<10	8	22.2%	16	22.2%	4	12.5%	14.78	<0.05*
10<20	17	47.2%	44	61.1%	11	34.4%		
≥20	11	30.6%	12	16.7%	17	53.1%		

Table (3): Relationship between studied nurses' personnel characteristics and their total autonomy level(n=140).

personnel characteristics	Total autonomy						Chi square	P value
	Low N=36		Moderate N=88		High N=16			
	No	%	No	%	No	%		
Age in years								
<30	11	30.6%	20	22.7%	5	31.3%	11.37	<0.05*
30<40	24	66.6%	43	48.9%	6	37.4%		
> 40	1	2.8%	25	28.4%	5	31.3%		
Gender								
Male	19	52.8%	33	37.5%	2	12.5%	7.69	<0.05*
Female	17	47.2%	55	62.5%	14	87.5%		
Marital status								
Married	5	13.9%	26	29.5%	2	12.5%	4.70	>0.05
Not married	31	86.1%	62	70.5%	14	87.5%		
Level of education								
Diploma	18	50.0%	24	27.3%	1	6.2%	20.21	<0.001**
High diploma	9	25.0%	37	42.0%	3	18.8%		
Bachelor of nursing	9	25.0%	27	30.7%	12	75.0%		
Years of experience								
<10	12	33.3%	13	14.8%	3	18.8%	12.60	<0.05*
10<20	20	55.6%	47	53.4%	5	31.2%		
≥20	4	11.1%	28	31.8%	8	50.0%		

Table (4): Matrix correlation between studied nurses total professional image perception and autonomy(n=140).

Professional Image	Autonomy	
		Total autonomy in performing the work .
Total perception regarding professional image of nurses score	Pearson Correlation Sig. (2-tailed)	.665** .000

Discussion:

Nursing care is a holistic and continuous approach, and therefore, nurses spend more time interacting with patients or healthy individuals than other healthcare professionals. Effective and high-quality nursing care depends on professional attitudes, perceptions, and satisfaction. Professional recognition and prestige depend on care quality, qualifications, and public perception which effect on nurses' autonomy **Selim., (2019)**.

Regarding personnel characteristics of the studied nurses, this current study revealed that more than half of the studied nurses are in age group from 30- 40 years old, also more than two third of them were females, and one third of them had a technical nursing education. Moreover, about three quarter of them were married and more half of them had 10<20 years of experience.

Regarding studied nurses' total perception about professional image .it indicated that more than half of the studied nurses had moderate level of perception regarding professional image. This might due to concerning nursing is a profession and the professional identity development in nursing starts with acceptance in the nursing major and finishes substantially with the end of education.

This finding contrasts with study by **Alkaya et al., (2018)** "Professional values and career choice of nursing students" carried out at university in the upper Midwest of United States and a university in the middle of Turkey, on 728 studied nurses and reported that American studied nurses had high professional values than Turkish them.

Regarding staff nurses' total autonomy, it revealed that nearly two third of them had moderate autonomy. This might due to nurses' inclination to reach autonomy in nursing has faced challenges to take independent action, a nurse must have sufficient knowledge based on research and evidence. It is clear that ongoing and systematic research in relation to the functions and activities of nursing impacts the autonomy of nurses.

This finding on the same level with **Cajulis and Fitzpatrick,(2017)** reported that more than half of nurses had moderate levels of autonomy . Similar findings were reported by **Laschinger et al., (2018)** was conducted in all nursing wards of hospitals chosen using the random sampling method. However, the samples of other studies were the majority of nurses working in critical care units who had moderate levels of autonomy due to working in specialized care units.

Regarding the relation between studied nurses' personnel characteristics and their total professional perception score, it reveals that there was a highly statistically significant relation between studied nurses' total professional perception and their educational level<0.001**. Moreover, there was a statistically significant relation between studied nurses' total professional perception and their age<0.05*, gender<0.05*, and years of experience<0.05*. On the other hand, there was no statistically significant relation between studied nurses' total professional perception and their marital status>0.05. this might due to the sufficient knowledge and expertise that improve nurses' professional image, also increase their confidence.

This finding agreed with of **Black (2017)** was reported no statistically significant relationship was reported between the work experience, educational level, age and professional image.

This result on the same line with **Wade, (2019)**, who studied Professional nurse autonomy: concept analysis and application to nursing education, also reported that nurses with high educational level had greater professional image.

Regarding the relation between studied nurses' personnel characteristics and their total autonomy score, it shows that there was a highly statistically significant relation between studied nurses' total autonomy and their educational level $<0.001^{**}$. Moreover, there was a statistically significant relation between studied nurses' total autonomy score and their age $<0.05^*$, gender $<0.05^*$, and years of experience $<0.05^*$. On the other hand, there was no statistically significant relation between studied nurses' total professional perception and their marital status >0.05 . This might due to the increase of age and work experience empowers nurses and improves their autonomy

This finding disagreed with of **Chumbler NR et al., (2020)** and **Kleinpell Nowell (2019)** a direct relationship was reported no statistically significant relationship was reported between the work experience of a critical care nurse and autonomy.

This result on the same line with **Sabiston, Laschinger, (2015)**, also reported that experienced nurses had greater autonomy. Experienced nurses have more autonomy in decision-making, there was a statistically significant relationship between nurses' autonomy in decision-making for patient care and nurses' educational level.

Regarding correlation between studied nurses total professional image perception and autonomy, it indicated that there was a highly positive association between studied nurses' professional image and their autonomy.

that means improving professional image perception is highly associated with improving nurse's autonomy ($r = .665$). This might due to positive effect of professional image on autonomy of nurses.

This finding agreed with of **Wade (2014)** who studied A model of the attitudinal component of professional nurse autonomy a direct there was a highly positive association between studied nurses' professional image and their autonomy. Moreover ;This result on the same line with **Rozalinda, (2019)**, also reported that there was a highly positive association between studied nurses' professional image and their autonomy.

Conclusion:

In the light of the current study findings, it was concluded that slightly more than half 51.4% of the studied nurses had a moderate level of perception regarding professional image. Nearly two third of the studied nurses had a moderate autonomy. Moreover, there was a highly positive correlation between staff nurses' professional image and their autonomy.

This finding confirmed the research hypothesis which was "There is a relationship between professional image and autonomy among staff nurses".

Recommendations:

Based on the results of the present study, the researcher came up with the following recommendations:

1. Management development educational program should be periodically conducted for all nursing categories.
2. Allow nursing staff to be involved in the major organizational decisions and committees such as: quality, infection control, environment, and training committees in order to strengthen and promote professional nursing autonomy.
3. It is recommended to health and nurse managers to ensure adequate culture and climate, enhance the feeling of autonomy among staff including nurses, manage communication and relation, and enhance

training and development in way that support and empower the nurses in the organization.

References:

- Aghamohammadi, D., Dadkhah, B., & Aghamohammadi, M. (2019):** Nurse-Physician Collaboration and the Professional Autonomy of Intensive Care Units Nurses. *Indian journal of critical care medicine: peer-reviewed, official publication of Indian Society of Critical Care Medicine*, 23(4), 178.
- Collette AE, Wann K, Nevin ML, Rique K, Tarrant G, et al. (2017) :**An exploration of nurse-physician perceptions of collaborative behavior. *J Interprof Care* 31: 470-478.
- Wangdi, U., & Dorji, N. (2019).** Perception on Nursing Profession and Academic and Work-Related Stress Among Nursing Students in Bhutan. *Biomedical Journal of Scientific & Technical Research*, 22(3), 16672-16683.
- Thabet, M., Dakrory Ali El-Said, H., & Aly Abd-Elhamid, E. (2020).** Correlation between Clinical Competence, Clinical Decision Making, and Perceived Autonomy Support among Nursing Internship Students. *Egyptian Journal of Health Care*, 11(3), 764-783.
- Abdelrahman, S. M. (2018).** Relationship among public nursing image, selfimage, and self-esteem of nurses. *IOSR J Nurs Health Sci*, 7(1), 10-16.
- Santos, I., Alvesa, Y. R., da Silvaa, S., & Gomesb, T. (2017):** Professional autonomy and nursing: representations of health professionals. *Rev GauchaEnferm*, 38(1), e59033
- Pursio, K., Kankkunen, P., Sanner-Stiehr, E., & Kvist, T. (2021).** Professional autonomy in nursing: An integrative review. *Journal of Nursing Management*.
- Nehad, E. F., & Hussien, H. S. (2018).** Relationship between Job Satisfaction, Professional Image and Nurses Marketing of the Nursing Profession. *The Medical Journal of Cairo University*, 86(March), 965-973.
- Skar, L., (2017):** Exploring Incivility among Nursing and Health Science Students: A Descriptive Study (Doctoral dissertation, Nova Southeastern University. Available at [https:// search,proquest, corn!openvie \vy](https://search.proquest.com/openview/vy)
- Varjus, S. L., Leino-Kilpi, H., & Suominen, T. (2017):** Professional autonomy of nurses in hospital settings—A review of the literature. *Scandinavian Journal of Caring Sciences*, 25, 201–207.
- Parizad, N., Lopez, V., Jasemi, M., Gharaaghaji Asl, R., Taylor, A., & Taghinejad, R. (2021).** Job stress and its relationship with nurses' autonomy and nurse-physician collaboration in intensive care unit. *Journal of Nursing Management*.
- Rao, A. D., Kumar, A., & McHugh, M. (2017):** Better nurse autonomy decreases the odds of 30-day mortality and failure to rescue. *Journal of nursing scholarship*, 49(1), 73-79.
- Rayan H.N., (2017):** Perception of Junior Nurse Students and Nurse Interns Regarding Public Image of Nursing. *Egyptian Journal of Health Care*, 9(2), 34-47.
- Blegen, M. (1993):** preferences for Decision-Making Autonomy, *Journal of Nursing School*, 25(2):339-38.,
- Selim A., M., A., (2019):** Nurses managers, leadership style and staff nurses autonomy; Master dissertation, Ain-Shams University, 58-59.
- Ahmed, H. S., & El-Hosany, E. W. (2018).** Factors facilitate head nurses' policy development and autonomy in decision making. *International Journal of Nursing Didactics*, 8(2), 1-14.
- Nibbelink, C. W., & Brewer, B. B. (2018).** Decision-making in nursing practice: An integrative literature review. *Journal of Clinical Nursing*, 27(5-6), 917-928.

- Wade GH. (2019):** Professional nurse autonomy analysis and application to nursing education. *Journal of Advanced Nursing*. 2019;30(2):310-18.
- Cajulis CB, Fitzpatrick JJ. (2017):** Level of autonomy of nurse practitioners in an acute care setting. *Journal of the American Academy of Nurse Practitioners*. 2017;19(10):500-07
- Laschinger HKS, Almost J, Tuer-Hodes D.(2018)** Workplace empowerment and magnet hospital characteristics. *Journal of Nursing Administration*. 2018;33(7-8):410-22.
- Alkaya, S. A., Yaman, Ş., & Simones, J. (2018).** Professional values and career choice of nursing students. *Nursing ethics*, 25(2), 243-252.
- Rozalinda AL.(2019):** Critical Thinking and Clinical Judgment: A Practical Approach. 4th ed. Sounders; 2019.
- Black BP.(2017):** Professional Nursing: Concepts & Challenges. 5th ed. Sounders; 2017.
- Wade GH.(2014):** A model of the attitudinal component of professional nurse autonomy. *Journal of Nursing Education*. 2014;43(3):116-24.