THE RELATIONSHIP BETWEEN SERVANT LEADERSHIP AND CREATIVITY OF STAFF NURSES

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Abstract

Background: Servant leadership is a form of moral based leadership was leaders tend to prioritize the fulfillment of the needs of followers, rather than satisfying their personal needs. Although the concept is not new among academic and nursing, it has received growing consideration due to the fact that it can positively affect a series of individual and organizational creativity.

Aim of the study: investigate relationship between servant leadership and creativity of staff nurses.

Subjects and Methods: Research design: A descriptive correlational research design was adopted to carry out this study.

Setting: The present study was conducted at Zagazig University Hospitals.

Sample: proportionate Stratified random sample was selected from nurses (n= 375).

Tool of data collection: Two tools were used for collecting data: Servant leadership assessment instrument and Employee Creativity scale.

Results: (61.9%) of studied nurses report that their leader had a high level of servant leadership. Also, (51.5%) of studied nurses had a high level of creativity.

Conclusion: There is highly statistical significant correlation between servant leadership and creative activity

Recommendation: Health care organizations should adopt a servant -leadership philosophy and establish servant leadership requirements for nurse managers to develop nurse leaders with a key "servant" orientation and mindset (e.g., emphasizing concerns for followers and prioritizing creativity among nurses).

Keywords: Servant leadership, Creativity, Staff nurses

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Introduction

Servant leadership is one of the most effective leadership styles in the healthcare field, It prioritizes the professional growth of staff nurses through listening empathetically, empowering them, and addressing their needs **(Elsayed et al., 2022)**.

It is valuable when put into practice as it empowers people through humility, authenticity, stewardship, vision, trust, and fairness. Servant leadership places value on believing, serving, listening, developing, encouraging, collaborating, and building personal relationships, with the servant leader demonstrating openness, accountability, and willingness to learn. Servant leaders are honest, principled individuals, making fair decisions and communicating ethical values, expectations, and standards **(Simon et al., 2022)**.

The servant-leader formation is virtues that are defined as the perfect ethic goodness in a nurse as human, or the general quality of goodness, or moral excellence, Servant leaders focus on the stabilization and growth and well-being of their staff for improving their self-efficacy **(Murphy et al.,2020)** .

Servant leadership is a leadership philosophy in which the goal of the leader is to serve. This is different from traditional leadership where the leader's main focus is the thriving of their company or organization. A servant leader shares power, puts the needs of the employees first and helps people develop and perform as highly as possible. Instead of the people working to serve the leader This paradigm emphasizes the integration of different fields, collaboration among stakeholders, ethical conduct, and shared decision-making processes to facilitate the professional growth of practitioners and improve the quality of healthcare services **(Dahlin et al.,2019)**.

Servant leaders, by definition, place the needs of their subordinates before their own needs and center their efforts on helping subordinates grow to reach their maximum potential and achieve optimal organizational and career success ,Their motivation in accomplishing these tasks is not self-interest; rather, servant leaders "want their subordinates to improve for their own good and view the development of followers as an end, in and of itself, not merely a means to reach the leader's or organization's goals. **(Best et al.,2020)**.

Also, servant leadership is defined as another-oriented approach to leadership manifested through one-on-one prioritizing of follower, individual needs and interests, and outward reorienting of their concern for self towards concern for others within the organization and the larger community **(Eva et al.,2019)**.

Moreover, Servant leadership, espoused by, involves using one's position to empower others to achieve their objectives and surmount obstacles. Servant leadership entails being attentive to everyone's needs, fostering a culture of continuous learning, and promoting community-building. Servant leaders also believe in sharing power, prioritizing others' interests, and enhancing individual development and productivity. **(Orukwowu et al., 2022)**.

Servant leaders demonstrate genuine interest and provide opportunities to nurses to brush up their skills when they are prepared to execute to make them grow and succeed, keep them engaged and encouraged along with sustenance and encouragement and enable them to feel capable of accomplishing assigned tasks. **(Latif ., 2021)**.

Moreover, Servant leadership focuses on the stabilization and growth of the nurses for improving their creativity and possible development conduct **(Cummings et al., 2018)**.

Creativity is recognized as one of the critical competencies for 21st century organizations to lead or adapt to change. Creativity has emerged as a new focus up on which an organization''s success and survival depends on its capability to create new knowledge and innovations which organizations have been faced with the need to change their way of thinking and make their employees capable of dealing with these daily challenges **(Kremer et al.,2019)**.

Creativity at work refers to the development of novel products, services and generating new ideas, processes and procedures by employees or a small group of employees to be successfully implemented within the firm to develop innovation **(Li et al., 2019)**. In most organizations, a suitable system is required to allow employees to express their creativity. Thus, organizational support plays a major role in enhancing the creativity of employees where they will be motivated to upgrade the organization's performance and productivity. In reality, there are organizations that give insufficient support to their employees in terms of empowering employees and knowledge sharing **(Sunley et al., 2019)**.

Nurses' creativity has emerged as a possible source of competitive advantage because it enhances organizational performance and boosts success and survival, based on its ability to create new knowledge **(Suifan *et al.,* 2017)**, It refers to the development of novel products, services and generating new ideas, processes and procedures

by Nurses or a small group of Nurses to be successfully implemented within the firm to develop creativity **(Maric, 2017).**

Nursing Creativity is viewed as a fundamental component in nursing as a calling. Particularly, at direct nursing care rehearses, an attendant who coordinates her/his inventiveness; will find that they function as self-strengthening ,With this strengthening, push the medical care taker to serve the best nature of care as could be expected, and push for the development of her/his-self and association results **(Sorour et al., 2021).**

Nursing Creativity is viewed as a fundamental component in nursing as a calling. Particularly, at direct nursing care rehearses, an attendant who coordinates her/his inventiveness; will find that they function as self-strengthening **(Bartos et al., 2020).** With this strengthening, push the medical caretaker to serve the best nature of care as could be expected, and push for the development of her/his-self and association results Nurses who coordinate inventive original thoughts into inpatient care can lessen expenses to the medical care framework and backing the maintainable advancement conduct of nursing rehearses **(Liu, et al., 2020).** As Creativity is the descent of novel and valuable ideas, while the invention is the enforcement of the ideas So, functional making utilizes nursing creativity suitable to nursing practice relief in modifying the way patient care is conveyed **(sorour et al., 2021)**.

Significance of the study:
Servant leadership has now become one in all the fore most leading characters of the leadership ,It is a holistic leadership approach that engages followers in multiple dimensions (e.g., relational, ethical, emotional, spiritual), such that they are empowered to grow into what they are capable of becoming. It seeks first and foremost to develop followers on the basis of leaders' altruistic and ethical orientations **(Eva et *al*., 2019).** It gives a positive value for the nursing profession, which improves nurse's creativity and helps for establishing new links between leaders and their subordinates **(Nathan** et *al***., 2018).** , So the aim of study is to investigate the relationship between servant leadership, and creativity of staff nurses.

Aim of the study:
The aim of the study was: to investigate the relationship between servant leadership , and creativity of staff nurses.

Research Questions:
- What is the level of servant leadership from staff nurses 'point of view?

-What is the level of creativity among staff nurses?

-Is there a relationship between servant leadership and creativity of staff nurses.

Subjects and methods:
Research design:
A descriptive correlational research design was used to achieve the aim of this study.

Study setting:
The present study was conducted at Zagazig University Hospitals, Al-sharqia Governorate , Egypt, which include two sectors involving eight teaching hospitals, namely; the Emergency sector includes four hospitals and El-Salam sector includes four Hospitals .The total bed capacity of the hospitals is approximately 2043 beds.

Study subjects:
A proportionate stratified random sample will be taken from staff nurses working at Zagazig University Hospitals according to the following inclusion criteria:
▪ The available three categories of nurses were included (bachelor of nursing &technical institute of nursing& nursing diploma).
▪ Both gender.
▪ Had at least one year of experience.

Tools of data collection:
Two tools were used to collect necessary data.

Tool: Servant leadership Assessment Instrument.
It consists of two parts as follows:
Part I: **personal and job characteristics** to collect the data of the nurses about age ,gender ,department of work, marital status, level educational qualification and years of experience.
Part II: it was developed by **van Dierendonck et al. (2017**) to measure staff nurses servant leadership level through staff nurses 'response to their supervisors' servant leadership style in their organization, It consists of (41items) grouped under eight domains namely : Empowerment (5 items), stewardship (5items), Accountability (5 items), Humility (5 items), Standing back (5 items), Authenticity (4 items), Courage (6items), Forgiveness (6 items), the response to the instrument allocated on five point likert scale ranged from (1) strongly disagree to (5) strongly agree.

Scoring system:
The nurses' responses to the instrument were measured on a five-point Likert scale ranged from (1) strongly disagree to (5) strongly agree. Total score was extended from (41 – 205), which

considered the summation of all staff nurses' responses on the present scale. Scores from (41 – 81) degree reflected the "low Servant Leadership". Whereas, scores ranged from (82- 122) denote "moderate Servant Leadership", as well as scores extended from (123-205) represent "high Servant Leadership**" (Sorour et al., 2021**). The tool was tested for its reliability and Cronbach's Alpha was 0.986 .

Tool II: Employee creativity scale:
was developed by **Mateus, et al., (2019)** to assess creativity levels of staff nurses, it consists of 33 items e.g. I always suggest new ways to achieve cooperative goals, I always propose new ways to get work done, I always try to find new ways to get work done.

Scoring system:
The staff nurses' responses were measured on a five-point Likert scale ranging from strongly disagree (1) to strongly agree (5) Nurses Response that considered "low creativity level", its scores graded from (3 - > 65) points. While, "moderate creativity level" response figured out by scores ranged from (66 - >98). On the other hand, "high creativity level" response represented by scores from (98 - >165) (**Sorour et al., 2021**).

Content validity& Reliability:
The questionnaire was translated into Arabic; and then content and face validity were established by a panel of five experts at the Faculty of Nursing, Zagazig University. Experts were requested to express their opinions and comments on the tool and provide any suggestions for any additions or omissions of items. According to their opinions, all recommended modifications were performed by the researcher .Reliability was measured by using the Cronbach's Alpha Coefficient factor test to determine the internal consistency of each scale and all were satisfactory for the Servant leadership instrument (0.986), and Employee creativity scale (0.982).

Fieldwork
Data collection phase of the study took three months from the 1st of January to the 1st of March 2023. During this stage all the data were collected from the study subjects.
The preparatory phase was done by meeting the study subjects, each nurse was met individually, got a full explanation about the aim of the study and was invited to participate. The nurse who gave his/her verbal informed consent to participate was handed the self- administered questionnaire and was instructed during the filling.
The second phase included handing the required number of questionnaire sheets to staff nurses in their work setting by the researcher to elicit their opinions. The data were collected three days a week, the researcher met staff nurses in each unit in the morning and evening shifts after finishing their work to distribute the questionnaires. Staff nurses completed the questionnaires at the same time of distribution and took about 10-15 minutes. The researcher checked each questionnaire sheet after they had been completed to ensure the completion of all information.

Pilot study:
A pilot study was carried out on 10 % of study subjects (37 staff nurses) to test applicability, feasibility, practicability of the tools. In addition, to estimate the time required for filling in the questionnaire sheets. The pilot study was conducted one week before collection of data and staff nurses were selected randomly and they were excluded from the main study sample.

Administrative and ethical considerations:
Official permissions were obtained from the dean of the Faculty of Nursing Zagazig University, and approval to conduct the study was obtained from the medical and nursing directors of the each hospital after explaining the nature of the study.
The study was approved by ethics committee and dean of the Faculty of Nursing, Zagazig University. Then, a letter containing the aim of the study was directed from the Faculty of Nursing to the medical and nursing administration of the Zagazig University Hospitals requesting their approval and cooperation for data collection. Consent was established with the completion of the questionnaires. As well, verbal explanation of the nature and aim of the study had been explained to staff nurses included in the study sample. Likewise, an individual oral consent was received from each participant in the study after explaining the purpose of the study. Staff nurses were given an opportunity to refuse or to participate, and they were assured that the information would be used confidentially for research purposes only.

Statistical analysis:
All data were collected, tabulated and statistically analyzed using IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp. Quantitative data were expressed as the mean ± SD &median (range), and qualitative data were expressed as number &

percentage. Percent of categorical variables were compared using Chi-square test. Pearson' correlation coefficient was calculated to assess relationship between various study variables, (+) sign indicate direct correlation & (-) sign indicate inverse correlation, also values near to 1 indicate strong correlation & values near 0 indicate weak correlation. Multiple linear regression is a predictive analysis. Multiple linear regression is used to describe data and to explain the relationship between one dependent continues variable and one or more independent variables. All tests were two sided. P-value < 0.05 was considered statistically significant, p-value ≥ 0.05 was considered statistically insignificant.

Results:
Table (1): Shows frequency and percentage distribution of the studied nurses according to personal characteristics(n=375) : It's clear from the table that the majority of studied nurses (77.1%) were female aged from 20 to 30 years old, married. (41.1%) of studied nurses having technical institute, While more than half of them having less than five years' experience.
Table (2): Shows total mean scores of servant leadership among studied nurses (375): It's clear from the table that the highest mean scores of servant leadership were related to forgiveness and humility dimension (20.64±5.43 & 16.83±4.73 respectively) .While the lowest mean scores were related to stewardship and authenticity (15.01±4.27 &9.49±3. 38 respectively) with total mean score of servant leadership 127.73±30.76.
Figure1: Shows Total level of servant leadership as perceived by studied nurses (375). This figure shows that (61.9%) of studied nurses report that their leader had a high level of servant leader ship.
Figure (2): shows Total level of creativity among studied nurses (n=375),It is clear from the figure that slightly more than half of studied nurses (51.5%) had a high level of creativity. While (5.3%) of them had a low level of creativity.
Table (4): Relation between servant leadership assessment level of studied nurse's and their personal and job characteristics, This table shows that there was only statistically significant relation between servant leadership and personal characteristics of studied nurses regarding their experience p=(0.0001).
Table (5): Relation between total creative activity level and of studied nurse's and their personal and job characteristics, This table shows that, there was only statistically significant relation between total creative activity and personal characteristics of studied nurses

regarding their gender p=(0.03) in favor males who have high creative activity .
Table (6): shows Correlations between servant leadership and Creative activity of studied Nurses (n=375), It is clear from the table that there is a highly statistical significant correlation between servant leadership and creative activity (r = 4680.558, P value =0.000).

Discussion:
Concerning the demographic characteristics of the studied nurses
The finding of the present study indicated that the majority of studied nurses were female and married. This result could be due to the high numbers of students who enter the faculty or school of nursing are females and the main core of nursing occupation is feminists, Regarding qualification the majority of studied nurses had technical institute of nursing, this could be due to the bachelor degree in nursing wasn't very popular until recently . Hence , the study sample is a true reflection of the nurses working in our community .Also this result shows that about three fifth of them having less than five years' experience,
These results agree with the study by **El-seidy et al., (2021)** about " Relationship between Spiritual Leadership and Creativity as Perceived by staff Nurses at Shoubrakhit General Hospital in Damanhur University and showed that more than one -half of the studied staff nurses were female , married and had nursing technical institute. As well a study carried out at Beni-Sueif University Hospital by **Mahgoub et al., (2019)** who assessed the relationship between work environment and innovative behavior among staff nurses and found that the majority of staff nurses in the study with age ranged from (20-29) years, had technical degree of nursing and had experience less than 5 years.
On the other hand, this study result was dissimilar to astudy conducted by **Otuwurunne et al., (2023)** to explore the relationship between nurse supervisor's servant Leadership behavior and nursing employee's self-assessment of engagement and burnout in on 82 participants and found that more than half of the study participants had a bachelor degree in nursing, while the majority of them were aged between thirty to thirty nine years old, and had six to ten years of experience.
Concerning total mean scores of servant leadership as perceived by studied nurses, the finding of the present study indicated that the highest mean scores of servant leadership were related to forgiveness and humility dimensions. While the lowest mean scores were related to

Stewardship and Authenticity. This might be due to most of studied nurses perceived that their leaders show trust worthiness in by being open to receiving input from them, Keeping their promise sand commitments to others , promoting tolerance kindness and honesty at work place .

This result goes in the same line with a study conducted by **Elsayed et al ., (2022)** , who studied "The association between Servant Leadership, Career Adaptability and Job Embeddedness among staff nurses working at main Mansoura university hospital, Egypt and found that the highest mean scores of servant leadership was related to humility dimension. Conversely, the previous findings contradicted with a study conducted by **Sorour et al., (2021)** who examined the relationship between servant leadership and its' role on staff Nurses' creativity and sustainable development behavior at Shebin el-kom teaching Hospital, Menoufia Governorate and found that the highest mean score of servant leadership was related to courage dimension.

Concerning total level of servant leadership among studied nurses, The finding of the present study indicated that servant leadership level was high as perceived by studied nurses. This might be due to staff nurses perceive their leaders empower them with opportunities so that they develop their skills, give them the authority they need to do their job, they include employees' vision into the organization' goals and objectives, , act with integrity and honesty and give them the opportunity to challenge their decisions, be a mentor to them , helping them through a variety of different professional and personal situations, always place team success above personal success and keep promises and commitments to others.

This result goes in the same line with a study conducted by **Maglione et al.,(2021)** who examined relationship between servant leadership and spirituality among undergraduate and graduate nursing Students at USA and demonstrated that leaders had a high levels of servant leadership as perceived by the graduated nurses. As well a study conducted by **Malak et al., (2022)** who examined the impact of practicing servant leadership style among chief nursing officers in nursing organizations at Drexel University, Philadelphia, USA and demonstrated that servant leadership was highly being practiced among the hospitals,on the same line a study by **Kul et al., (2020)** who examined the effect of nurse managers' servant leadership on nurses' innovative behaviors and job performances to determine the effect of servant leadership on nurses' innovative behavior and job performance

for nurses selected from three public hospitals in Istanbul, Turkey and reported that their leaders had a high levels of servant leadership.

On the other hand, this study result was dissimilar to **Salih et al.,(2020)** who studied servant leadership and its impact on social loafing: organizational happiness as moderating" and found that the level of servant leadership was moderate as perceived by the studied nurses , as well **Murphy et al., (2020)** who studied the leadership baseline to assess servant leadership and leadership self-efficacy in first year health professions students and stated that servant leader ship level was moderate as perceived by studied nurses .

Concerning total level of creativity among studied nurses: The finding of the present study indicated slightly more than half of studied nurses had a high level of creativity. This may be due to that most of staff nurses believed that their previous experience makes them more creative in the workplace as well as every day routine doesn't impedes on their creativity and time pressure inhibits their individual creativity at work. The result was consistent with a study conducted by **Awad et al., (2021)** who studied staff nurses' perception of head nurses' support for their creativity at Tanta university main hospital among staff nurses and found that the majority of staff nurses had high percentage of creativity.

As well a study by **Chheda, (2020)** who studied the effects of nurses' workload on creativity and innovation in university of central Florida, USA and reported that studied nurses had a high level of creativity. On the other hand a study carried out **by Abd-Elrhaman et al., (2018)** at Egypt to assess creativity in Work, an educational program for improving nurses' productivity and found that the majority of staff nurses had low level of creativity.

Concerning relation between servant leadership assessment level and personal and job characteristics of studied nurse's, the finding of the present study indicated that there was statistically significant relation between servant leadership perception and personal characteristics of studied nurses regarding their experience staff nurses' from the researcher point of view ,this could be related to that, experienced staff nurses be more oriented and be able to maintain close relationship with leaders, they feel that their supervisors care for them as persons, encourage them for further growth and development by giving them more authority on carrying out their jobs .

This finding matched with a study by **Gunnarsdottir et al.,(2014))** to examine if servant leadership useful for sustainable Nordic health care and found that there was statistically significant relation between staff nurses perception of servant leadership and their experience. Conversely, the previous finding contraindicated with a study by **Elsayed et al., (2022)** , who found that there was no statistically significant relation between servant leadership and their experience .

Concerning relation between creativity level and personal and job characteristics of studied nurses: The finding of the present study indicated that there was only statistically significant relation between creative activity and personal characteristics of studied nurses regarding their gender in favor males who have high creative activity . This may be due to that males always have high levels of ability analysis, risk taking, originality, sensitivity to problems, mental flexibility and intellectual fluency elements, That help them to be more creative.

Concerning correlations among servant leadership, and creative activity among studied Nurses: The finding of the present study shows that there was a highly statistical significant correlation between servant leadership and creative activity**,** These positive correlations meant that highly utilizing and applying of servant leadership approach led to a high level of nurses' creativity This may be due to . servant leadership has been proven to promote creativity by encouraging self-reflection and self-efficacy among staff nurses and by encouraging initiative and adaptability to work. Therefore, servant leadership can be considered as a variable that motivates intrinsic motivation and induces creative behavior in any organization when leadership is focused on the development and growth of the followers, this leads to positive

employee's perception regarding their capabilities to perform well and as servant leaders.

This study was in agreement with a study conducted by **Su et al., (2020) who** demonstrated that servant leadership enhances employees' internal motivation and encourages them to engage in innovative behavior with more creative and patient -oriented services. As well this result goes in the same line with study by **Sorour et al., (2021)** who found a highly significant positive correlation between servant leadership and creativity among staff nurses.

Conclusion:
In the light of the main study results; it can be concluded that slightly more than half of studied nurses report that their leader had a high level of servant leader ship. Also, slightly more than half of studied nurses had a high level of creativity. Additionally, highly statistical significant correlation between servant leadership and creative activity score was maintained.

Recommendations:
In view of the main results of the study the following recommendations were derived and suggested
- Organizations should consider selecting and developing servant leaders in significant positions, such that training and recruitment methods both outside and inside organizations is conducted in alignment and mutual communication
- Health care organizations should adopt a servant -leadership philosophy and establish servant leadership requirements for nurse managers to develop nurse leaders with a key "servant" orientation and mindset (e.g., emphasizing concerns for followers and prioritizing creativity and sustainability among nurses).
- Putting an effective system of financial and incorporeal incentives for the employees.

Result:

Table (1): Frequency and Percentage distribution of the studied nurses according to personal characteristics (n=375)

Variables		n	%
Gender	Males	86	22.9%
	Females	289	77.1%
Age	20-30 years	251	66.9%
	31-40 years	68	18.2%
	41-50 years	41	10.9%
	>50 years	15	4.0%
Social status	Single	165	44.0%
	Married	198	52.8%
	Divorced	5	1.3%
	Widow	7	1.9%

Education	Nursing diploma	69	18.4%
	Technical institute	154	41.1%
	Bachelors	146	38.9%
	Post graduate	6	1.6%
Experience	<5 years	217	57.9%
	5-10 years	54	14.4%
	>10 years	104	27.7%

Table (2): Total mean scores of servant leadership among studied nurses (n= 375).

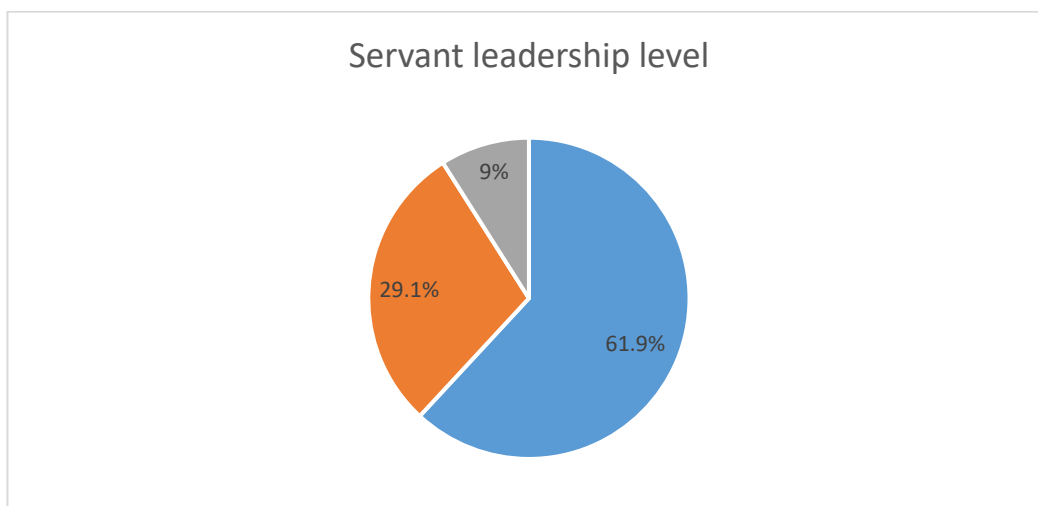| Dimensions	Dimension score	
	Mean± SD	Median (range)
Empowerment	15.67±4.05	16(7-24)
Stewardship	15.01±4.27	15(5-23)
Accountability	16.15±4.48	16(7-25)
Humility	16.83±4.73	18(6-25)
Standing back	15.82±4.23	17(8-24)
Authenticity	9.49±3. 38	10(4-16)
Courage	18.89±4.88	19(8-27)
Forgiveness	20.64±5.43	21(6-30)
Total mean	127.73±30.76	132(41-197)

Figure1: Total level of servant leadership as perceived by studied nurses (n=375)
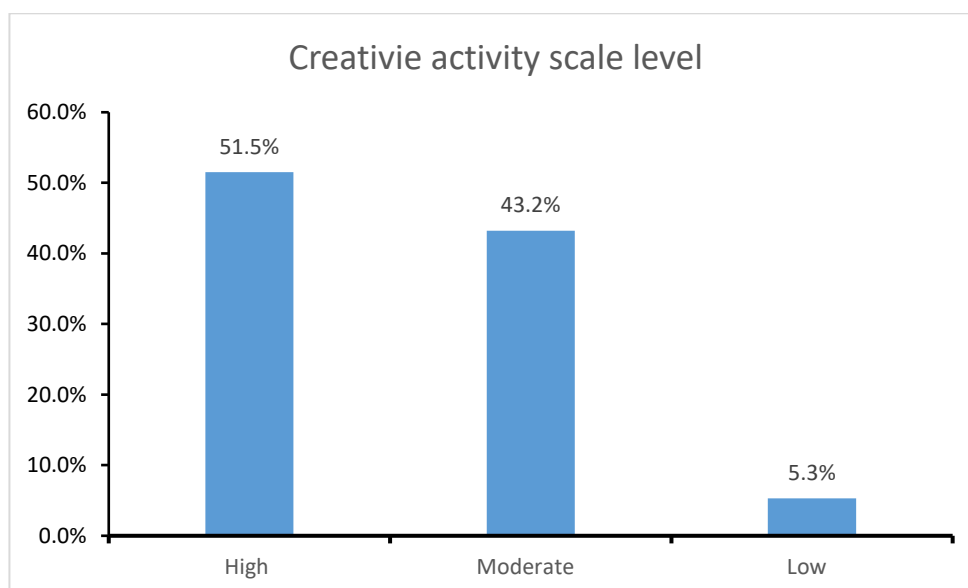

Figure (2): Total level of creativity among studied nurses (n=375)

Table (3): Relation between servant leadership level of studied nurse's and their personal and job characteristics(n==375).

personal and job characteristics	Servant leadership						n	χ^2	p
	High servant leadership (n.232)		Moderate servant leadership (n.109)		Low servant leadership (n.34)				
	No.	%	No.	%	No.	%			
Gender									
Males	59	68.6	23	26.7	4	4.7	86	3.43	0.18
Females	173	59.9	86	29.8	30	10.4	289		
Age per years									
20-30 years	151	60.2	78	31.1	22	8.8	251		
31-40 years	39	57.4	21	30.9	8	11.8	68	6.89	0.33
41-50 years	29	70.7	9	22.0	3	7.3	41		
>50 years	13	86.7	1	6.7	1	6.7	15		
Social status									
Single	104	63.0	52	31.5	9	5.5	165		
Married	120	60.6	53	26.8	25	12.6	198	7.91	0.25
Divorced	4	80.0	1	20.0	0	.0	5		
Widow	4	57.1	3	42.9	0	.0	7		
Education									
nursing diploma	37	53.6	25	36.2	7	10.1	69		
Technical institute	91	59.1	44	28.6	19	12.3	154	10.65	0.1
Bachelors	98	67.1	40	27.4	8	5.5	146		
post graduate	6	100.0	0	.0	0	.0	6		
Experience									
<5 years	136	62.7	67	30.9	14	6.5	217	22.196	0.0001*
5-10 years	29	53.7	11	20.4	14	25.9	54		
>10 years	67	64.4	31	29.8	6	5.8	104		

$\chi 2$ Chi square test   *significant p<0.05

Table (16): Relation between creative activity of studied nurse's and their personal and job characteristics(n=375)

personal and job characteristics	Creative activity level						n	χ^2	P
	High Creative activity n.193		Moderate Creative activity n.162		Low Creative activity n.20				
	No.	%	No.	%	No.	%			
Gender									
Males	55	64.0	27	31.4	4	4.7	86		
Females	138	47.8	135	46.7	16	5.5	289	7.08	0.03*
Age per years									
20-30 years	129	51.4	109	43.4	13	5.2	251		
31-40 years	35	51.5	28	41.2	5	7.4	68	1.47	0.96
41-50 years	21	51.2	18	43.9	2	4.9	41		
>50 years	8	53.3	7	46.7	0	.0	15		
Social status									
Single	90	54.5	66	40.0	9	5.5	165		
Married	96	48.5	91	46.0	11	5.6	198	2.18	0.903
divorced	3	60.0	2	40.0	0	.0	5		
Widow	4	57.1	3	42.9	0	.0	7		
Education									
nursing diploma	42	60.9	25	36.2	2	2.9	69		
Technical institute	78	50.6	66	42.9	10	6.5	154	5.09	0.53
Bachelors	71	48.6	67	45.9	8	5.5	146		
post graduate	2	33.3	4	66.7	0	.0	6		
Experience									
<5 years	113	52.1	89	41.0	15	6.9	217	4.81	0.31
5-10 years	31	57.4	21	38.9	2	3.7	54		
>10 years	49	47.1	52	50.0	3	2.9	104		

Table (12): Correlations betweem servant leadershipand Creative activity of studied Nurses (n= 375)

Items	Servant leadership assessment	
	(r)	P
Creative activity score	0.558	0.0001

Pearson 'Correlation coefficient (r) ** Correlation is significant P<0.01.

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