

Original Article**Relationship Between Nurses' Motivation and Patients' Outcomes in Hemodialysis Departments****Basma Ramadan Saied Mohamed¹ Neamat Mohamed El-Sayed² Elham Youssef Elhanafy³ Mervat Abd El-Monem Noeman⁴**

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Abstract:

Background: In healthcare organization, Motivation is a key idea of management and control in nursing which performs the critical position in maintaining nurse manager with long life work. Consequently, as soon as the nurses are motivated the ensuing of labor productiveness extended which cause accurate patients' outcomes. **Aim of this study:** To examine the relationship among nurses' motivation and patients' outcomes in hemodialysis departments at Kafr EL-Dawar: General and Central as well as Fever hospitals. **Design:** A descriptive correlational study design. **Setting:** The study was carried out in hemodialysis department at Kafr EL-Dawar: General hospital (32 beds) and Central hospital (15 beds) as well as Fever hospital (23 beds). **Subjects:** There were two subject groups involved in this study: all nurses who're operating with inside the noted settings with at least one year of experience and who could be to be had on the time records series, became covered with inside the examine (N=84) approximately, total patients who're treating with inside the noted settings and who could be to be had on the time records series taken from registration of hospitals records, became covered with inside the examine (N =373) approximately. **Tools for data collection:** Tow tools have been used to accumulated the data, Tool (I): Questionnaires about motivating work factors. It consists of 45 items. Tool (II) Clinical Patients' Outcomes Checklist. It is composed of (33 items), In addition demographic characteristics data sheet. **Results:** the studied was exposed to a statistically significant relationship among nurses' motivation and patients' clinical outcomes, the total motivation was law and high total clinical outcomes. **Conclusion:** The end result of the present study discovered that, there has been a statistically significant relationship among nurses' motivation and patients' outcomes in hemodialysis departments at Kafr El-Dawar General, Central and Fever Hospitals. Also, the total motivation was low and high total clinical outcomes. **Recommendations:** Hospital administrators and nurse supervisors should improve the nurses' job motivation by creating a collaborative work and cooperative working environment and spirit of teams among nurses. Offer non-stop training to enhance nurses' talents practice, encourage nurses' to take part in choice making problem solving. Nurses should improve their communication skills, provide accurate information to their patients and attending training programs.

Keywords: Hemodialysis, Motivation, Nurses, Patients' outcomes.

Introduction:

In healthcare organization, motivation is a critical tool to measure healthcare professional's response which lead to increasing challenges and demands⁽¹⁾. Motivation of nurses is vital to generate the organizational commitment toward the patients and the hospital. Therefore, it's very important to know the knowledge about how motivates and satisfies the nurses⁽²⁾. Nurses are a key driving force of any health care organization who gives never-ending effort to put its decisions into action. For that reason, the issue of nurses' motivation has become an indispensable part of the human resources management strategy of a health care organization⁽³⁾.

Buchbinder and Shanks⁽⁴⁾ defined Motivation as the action providing to the nurses to be a motive and help nurses to take action. They added that motivation comes from some needs when the needs was fulfilled that leads to nurses

were motivated. Moreover, Motivation refers to the desire of an individual to put greater efforts to attain particular goals, and it is an art with the intention of motivating the nurses to complete their responsibilities in a particular way⁽⁵⁾.

There are two special motivational types: intrinsic motivation or extrinsic motivation. **First**, Intrinsic motivation is an inner pressure that leads nurses to fulfill private and organizational goals. While, intrinsic motivation in the healthcare is described as pleasure and self-satisfaction in carrying out their obligations in place of working for outside rewards. Nurses who have been intrinsic motivated have inner pressure that forms their behaviors to performing responsibilities with none any outside effects⁽⁶⁾. Factors which impact intrinsic motivation took place while duties are completed for inner achievement or enjoyment of the duties that include: responsibility, cooperation, autonomy, competency, social interactions, self-esteem and a sense of belonging⁽⁷⁾.

Second, Extrinsic motivation is an outside pressure that leads nurses to meet personal and organizational goals⁽⁶⁾. Extrinsic rewards which include rewards, pay and benefits⁽⁸⁾. It additionally may be in the forms of good relationship between nurses, good facilities, good working conditions and better administrator's quality at the unit⁽⁹⁾. Extrinsic motivation within the healthcare generated via external stimuli which include prizes, positions, awards, incentives lead to the nurses achieved work in effective manner⁽⁶⁾.

In the health care systems, motivation performs an important role in increases productivity which was manifested in patients' outcomes, the increasing and decreasing of work motivation factors are range in keeping with nature, standards of nurses' abilities and personalities. Work motivation factors have become a vital tool to modify and tailor nurses' behaviors and its results⁽¹⁰⁾. Therefore, it's crucial for the nurse managers to inspire nurses as a way to meet the preferred outcomes⁽¹¹⁾.

Regarding to **Simeza**⁽¹¹⁾ and **Slow**⁽¹²⁾ Patient outcomes are defined as measurable or observable consequences in reaction on your nursing interventions or consequences of interventions received from the Patients. They classified it into two main parts: patient functional status/ outcomes and patient satisfaction. **First**, affected patient functional status includes, health status, well-being and self-care abilities as affected patient's ability to walk, talk, sleep, and get dressed his/ herself. **Second**, affected patient satisfaction with nursing care including treatment with respect, effective communication, honest, and providing educational information.

In the same respect, **Liu**. et al.⁽¹³⁾ described patient functional status/outcomes as patient cap potential to finished the everyday life activities, satisfy traditional needs, and keep fitness or health. They emphasized on measuring functional status by measuring performance to quantifying patients' outcomes.

Also, they mentioned Patient satisfaction as main theme to measure patient outcomes and they described it as patient reporting of happiness or satisfaction with nursing intervention, nurses made sure that patients had privacy when required, nurses knew what to do for each patients, thought ahead about patient needs, helped patients suffers comfortable within the health center and nurses helped patients manipulate fears about their illness. health care organization have many barriers to achieve desired patient outcomes as; not enough skilled and experienced nurses, frustrated nurses, lack of administrative skills, and bad working conditions as lack of respect, inadequate remuneration, poor communication, lack of recognition and centralized decision making⁽¹¹⁾. There are many international studies^(6, 11, 14), which were conducted to investigate relationship between nurses' motivational factors and patients' outcomes. Study was done in Malaysia by **Hee**. et al.⁽⁶⁾ in the health tourism hospital, who revealed that significant relationship to nurses' high job performance also intrinsic motivation was positive.

Significance of the study:

At Kafr EL-Dawwar General and Central as well as Fever hospital in hemodialysis department nurse managers are complaining from presence of a lot of problems such as turnover, burn out and dissatisfaction among nurses, and this may be resulted from lack of motivation from nurse administrators and may effect on patients' outcome.

Understanding the effect of nurses' motivation and motivational factors on patient's outcomes are extremely important to nurse administrator to improve patient care because nurses who are more motivated usually intensify their effort to become more committed to the organizational goal⁽⁹⁾. Nurses work motivation has an effect on wellbeing, organizational performance, satisfaction, retention, engagement and commitment⁽¹⁵⁾.

Aim of the study: to examine the relationship among nurses' motivation and patients' outcomes in hemodialysis departments at Kafr EL-Dawar General and Central as well as Fever hospitals.

Research questions:

What is the relationship between nurses' motivation and patients' outcomes in hemodialysis departments at Kafr EL-Dawar General and Central as well as Fever hospitals?

Materials and Methods:

Research design: A descriptive correlational study design

Setting:

This study will be carried out at hemodialysis department at Kafr EL-Dawar General (32 beds) and Central (15 beds) as well as Fever hospital (23 beds).

Subjects:

Two groups of subjects will be included in this study.

1- All nurses who're working with inside settings with at least one year of experience and who can be to be had on the time of data collection, will be included in this study (N=84) approximately.

2- All patients who're treating with inside settings and who can be to be had on the time of data taken from registration of hospitals records, will be included in this study (N =373) approximately.

Table: - Number of nurses and patients at Kafr EL-Dawar General, Central and Fever hospitals.

	General hospital	Central hospital	Fever hospital
Nurses numbers Total (84)	35	17	32
Patient numbers Total (373)	170	65	138

Tool for data collection:

Two tools will be used: **TOOL (I): - Motivating Work Factors Questionnaire.** It was developed and applied by **El- sayed** ⁽¹⁶⁾ and used by **Ellis and Hartley** ⁽¹⁷⁾ based on Herzberg's motivator and hygiene theory. It consists of 45 items, divided into 7 domains, namely: job assurance (10 questions), hospital policy (14 questions), work nature (3 questions), peer interaction (5 questions), supervision (5 questions), work responsibility (4 questions), and achievements (4 questions), measured on a five point Likert rating scale ranged from (1) "none" to (5) "always". 75% or more indicate higher motivation ⁽¹⁸⁾.

Tool (II): - Clinical Patients' Outcomes Checklist. It was developed by **Simeza** ⁽¹¹⁾ to measure clinical patient outcomes. It is composed of (33 items) divided into two domains: *first*, related to patients' functional status / outcomes (13 items) as (I am walking comfortably after this dialysis, I am able to work and play after this dialysis etc). *Second*, related to patient's satisfaction (20 items) as (the nurse treated me with respect, the nurse was honest about my condition, the nurse was fully answering my questions.... etc), measured on a five point Likert rating scale ranged from (1) "strongly disagree" to (5) "strongly agree". **In addition, demographic characteristics data sheet**, for nurses about (age, educational qualifications, years of nursing and unit experiences, and marital status), and questionnaires for patient's about (age, sex, marital status, educational qualifications and length of stay in hemodialysis unit).

Methods:

This study was implemented according to the subsequent steps:

i. Administrative process:

* An official permission was given from the Dean of Faculty of Nursing, Damanhour University and the responsible authorities of the study settings after clarification of the purpose of the study.

ii. Development of the study tools:

* The two tools were translated into Arabic, and examined for its content validity and translation by five experts in the field of the study. Accordingly, the necessary adjustments were done.

*The two tools were tested for its reliability using appropriate reliability tests.

iii. Pilot study

* It was carried out on (10%) of total sample size nurses (n=8) and patients (n=37), who will not be included in the study sample; in order to examined and to ensure the clarity and feasibility of the tool and to recognize barriers and problems that may be faced during data collection, and the necessary modifications have been done.

iv. Procedure of data collection:

- * Data was collected from the recognized nurses, by the researcher by a hand- delivered questionnaire at their working setting after explaining the goal of the study.
- * The data collection took about three months from the first of February 2021 to the end of April 2021 and the estimating time needed for filling the tools ranged between 30 to 45 minutes (two days per week).
- * Data obtained was analyzed through using the suitable statistical tests.

v. Statistical analysis

- *The reliability of the two tools was examined statistically the usage of Cronbach’s Alpha Coefficient test to measure the inner consistency of the items composing each dimension of the tools.
- *The result of Cronbach’s Alpha Coefficient test proved to be strongly dependable for motivation factor 0,935, and 0.897 for patient outcome.
- *The collected data was coded and putting in a special format to be appropriate for computer feeding.
- * Following information entry, checking and verification process were carried out in order to avoid any mistakes.
- *Data become analyzed by using the statistical package for social science SPSS (version 20).
- * The following statistical analysis measures had been used: **a. Descriptive statistical measures**, which included numbers, percentages, and averages (Minimum, Maximum, Arithmetic mean (X), and Standard Deviation (SD). **b. Statistical analysis tests**, which included: Chi square (X²), student T test and ANOVA test.

vi. Ethical considerations

- * Approval was given from the ethical committee at the Faculty of Nursing-Damanhour University, prior to the start of the study.
- *An informed written consent was received from the nurses after an explanation the aim of the study.
- *Privacy was considered during the study.
- *Confidentiality should be maintained during the study.
- * The right to refuse to participate or withdraw from the studywere assured during the study.
- *Maintained anonymity concerning data collected.

Results:

Table 1 indicates the nurses' age ranged from 25 to 59 years with a mean of 35.90 ± 7.876 years. 50.0% of them aged less than 35 years, while 2.4% of them aged ≥ 55 years. Regarding the nurses gender, the big majority were females (94%), while only 6.0% were males. In relation to educational qualifications, 59.5% of them had a bachelor degree, as compared to (14.3%) of them had a technical institute diploma. Additionally, the table reveals that the years of experience were (32.1%) of the nurses had 5 to < 10 years of experience, as compared to (8.3%) of them who had much less than 10 to < 15 years of experience. Lastly, the majority (90.5%) of the nurses had been married with a mean score of 12.29 ± 9.721 . (4.8%) of them divorced / widowed.

Table (1): Demographic characteristics of nurses working at the studies settings (n= 84).

Nurses' demographic Characteristics		No.	%
Age (years)			
25-		42	50.0
35-		26	31.0
45-		14	16.7
≥ 55		2	2.4
Min- Max	25-59	Mean \pm SD	35.90 ± 7.876
Gender			
Male		5	6.0
Female		79	94.0
Educational level			
Diploma of secondary nursing school		22	26.2
Diploma of technical nursing institute		12	14.3
Bachelor degree of nursing		50	59.5
Years of nursing experience			
<5		20	23.8
5-		27	32.1

10-15- ≥ 20	7 8 22	8.3 9.5 26.2
Marital status		
Single Married Divorced /Widowed	4 76 4	4.8 90.5 4.8
Min- Max	1-41	Mean ± SD 12.29 ± 9.721

Table 2 shows that 59.86% of the nurses had a total motivation while, the factor of peer interaction achieved a high mean percentage score 77.08 % Finally, the factor of job assurance achieved a low mean percentage score 46.26 %.

Table (2): Mean scores percentage of nurses' motivation work factors(n=84).

Items	Mean Scores		Mean Percentage Score	Rank
	Min- Max	Mean ± SD		
Job assurance	10-39	23.13 ± 7.120	46.26%	7
Hospital policy	14-57	40.39 ± 8.917	57.70%	5
Work nature	5-15	10.75 ± 2.634	53.75%	6
Peer interaction	7-25	19.27 ± 3.455	77.08%	1
Supervision	5-25	15.23 ± 3.665	60.92%	4
Work responsibility	6-19	12.76 ± 3.126	63.80%	3
Achievement	4-20	13.15 ± 2.919	65.75%	2
Total Motivation	70-182	134.69 ± 23.641	59.86%	

*High mean percentage score: 66.6-100%

* Moderate mean percentage score: 33.3-66.6%

*Low mean percentage score: 0-33.3%

Table 3 illustrates that 51.2% of nurses reported low total motivation. While, 50% of nurses reported high motivation about peer interaction. Finally, (82.1%, 50%) of the nurses reported low motivation about job assurance, work nature factors

Table (3): Distribution of nurses according to their levels of motivation work factors (n= 84).

Items	Levels of Motivation Work Factors					
	Low		Moderate		High	
	No.	%	No.	%	No.	%
Job assurance	69	82.1	15	17.9	0	0.0
Hospital policy	39	46.4	44	52.4	1	1.2
Work nature	42	50.0	42	50.0	0	0.0
Peer interaction	4	4.8	38	45.2	42	50.0
Supervision	31	36.9	39	46.4	14	16.7
Work responsibility	25	29.8	40	47.6	19	22.6

Achievement	19	22.6	42	50.0	23	27.4
Total Motivation	43	51.2	38	45.2	3	3.6

*Low 4.8-82.1% * Moderate 17.9- 52.4% *High 1.2-50%

Table 4 clarified that 41.7% of the nurses who working at the General hospital reported low total motivation level. Moreover, 50% of nurses aged from 25 to 35 years had lowest motivation level. Additionally, 94% of female nurses had lowest motivation level. Furthermore, 59.5% of the nurses' educational level (Bachelor degree) had lowest motivation level. Also, 32.1% of nurses' years of experience 5 to <10 years had lowest motivation level. Finally, 90.5% of nurses married had lowest motivation level, respectively.

Table (4): Relationship between the total motivation of studied nurses and their demographic characteristics (n= 84).

Nurses 'demographic characteristics	Total N=84		Test of Significance
	No.	%	
Working hospital			
General	35	41.7	X ² =4.273 P=0.370
Central	17	20.2	
Fever	32	38.1	
Age			
25-	42	50.0	X ² =7.578 P=0.476
35-	26	31.0	
45-	14	16.7	
≥55	2	2.4	
Gender			
Male	5	6.0	X ² =0.303 P=0.860
Female	79	94.0	
Educational level			
Diploma of secondary nursing school	22	26.2	X ² =4.374 P=0.626
Diploma of technical nursing institute	12	14.3	
Bachelor degree of nursing	50	59.5	
Years of nursing experience			
<5	20	23.8	X ² =12.975 P=0.113
5-	27	32.1	
10-	7	8.3	
15-	8	9.5	
≥ 20	22	26.2	
Marital status			
Single	4	4.8	X ² =1.751 P=0.941
Married	76	90.5	
Divorced/Widowed	4	4.8	

X² Chi Square Test * statistically significant at p ≤ 0.05 ** highly significant at P ≤ 0.001

Table 5 appeared that highly statistically significant relations were found among job assurance and hospital policy, work nature and total motivation (p= 0.000**). Moreover, the job assurance had a significant relation to work responsibility (p=0.005*). Also, hospital policy had statistically highly significant relations with work nature, supervision, work responsibility, achievement or total motivation (p= 0.000**). Moreover, hospital policy had a significant relation to peer interaction (p=0.005*). While, work nature had statistically highly significant relations with peer interaction, supervision, work responsibility, achievement or total motivation (p= 0.000**). Also, peer interaction had statistically highly significant relations with supervision, work responsibility, achievement and total motivation (p= 0.000**). While, supervision had statistically highly significant relations with work responsibility, achievement

also total motivation (p= 0.000**). Additionally, work responsibility had statistically highly significant relations with achievement and total motivation (p= 0.000**). Finally, achievement had statistically highly significant relations with total motivation (p= 0.000**).

Table (5): Correlation Matrix among studied nurses' motivation work factors (n= 84).

		Job assurance	Hospital policy	Work nature	Peer interaction	Supervision	Work responsibility	Achievement	Total Motivation
Job assurance	r P								
Hospital policy	r P	0.658 0.000**							
Work nature	r P	0.504 0.000**	0.603 0.000**						
Peer interaction	r P	0.161 0.144	0.303 0.005*	0.498 0.000**					
Supervision	r P	0.176 0.109	0.402 0.000**	0.447 0.000**	0.701 0.000**				
Work responsibility	r P	0.302 0.005*	0.554 0.000**	0.544 0.000**	0.603 0.000**	0.714 0.000**			
Achievement	r P	0.164 0.137	0.395 0.000**	0.373 0.000**	0.544 0.000**	0.606 0.000**	0.553 0.000**		
Total Motivation	r P	0.717 0.000**	0.871 0.000**	0.751 0.000**	0.620 0.000**	0.681 0.000**	0.760 0.000**	0.610 0.000**	

r: correlation coefficient * Statistically significant at $p \leq 0.05$ **highly significant at $P \leq 0.001$

Table 6 shows that the patients' age ranged from 15 to 87 years with a mean of 53.43 ± 15.12 years. More than half, 76.0% of them were aged ≥ 50 years, while 3.5 % of them aged less than 20 years. Regarding the patients gender the vast majority were males 57.6 %, while only 42.4% were females. In relation to 63.3 % of them were married, compared to 6.2% of them were divorced. Additionally, the table reveals that the patients' educational level were 35.9 % had secondary / technical education, compared to 4.8 % had illiterate. Finally, the patients' duration of dialysis (years) ranged from 1 to 17 years with a mean score 4.220 ± 3.637 years. More than half, 67.3 % of them duration of dialysis were < 5 years, while 1.6 % of them duration of dialysis were ≥ 15 years.

Table (6): Demographic characteristics of patients treating at the studies settings (n= 373).

Patients 'demographic characteristics	Total N=373	
	No.	%
Age		
<20	13	3.5
20-	15	4.0
30-	43	11.5
40-	52	13.9
≥ 50	250	67.0
Min- Max	15-87	Mean \pm SD 53.43 \pm 15.12
Gender		
Male	215	57.6
Female	158	42.4
Marital status		
Single	43	11.5
Married	236	63.3
Divorced	23	6.2
Widowed	71	19.0

Educational level		
Illiterate	18	4.8
Primary education	122	32.7
Preparatory education	68	18.2
Secondary /Technical education	134	35.9
University education	31	8.3
Duration of dialysis (years)		
<5	251	67.3
5-	74	19.8
10-	42	11.3
≥ 15	6	1.6
Min- Max	1-17	Mean ± SD 4.220 ± 3.637

Table 7 illustrates that 55.0 % of patients reported high total clinical outcomes. While ,78.3% of patients reported moderate functional status. Finally, 78.3 % of patients reported high patients' satisfaction.

Table (7): Distribution of studied patients' levels of clinical outcomes (n= 373).

Items	Levels of Clinical Outcomes					
	Low		Moderate		High	
	No.	%	No.	%	No.	%
Functional Status	73	19.6	292	78.3	8	2.1
Patients' Satisfaction	19	5.1	62	16.6	292	78.3
Total Clinical Outcomes	19	5.1	149	39.9	205	55.0

*Low 0 - 5%

* Moderate 6 - 39.9%

*High 40 - 55%

Table 8 clarifies that 100 % of the patients reported moderate levels of functional status, aged from < 20 to 30 years, 97.7 % of them were single and 89.7 % of them educational level (preparatory) had highest statistically significant (p= 0.000**), Finally 83.7 % of them the duration of dialysis < 5 years had statistically significant (p= 0.005**).

Table (8): Relationship between the studied patients' levels of total functional Status and their demographic characteristics (n= 373).

Patients' characteristics	Levels of Functional Status						Total N=373		Test of Significance
	Low (N= 73)		Moderate (N= 292)		High (N= 8)		No.	%	
	No.	%	No.	%	No.	%			
Working hospital									
General	35	20.6	131	77.1	4	2.4	170	45.6	X ² =2.350 P=0.672
Central	11	16.9	54	83.1	0	0.0	65	17.4	
Fever	27	19.6	107	77.5	4	2.9	138	37.0	
Age (years)									
<20	0	0.0	13	100.0	0	0.0	13	3.5	X ² =45.250 P=0.000**
20-	0	0.0	15	100.0	0	0.0	15	4.0	
30-	4	9.3	39	90.7	0	0.0	43	11.5	
40-	4	7.7	42	80.8	6	11.5	52	13.9	
≥50	65	26.0	183	73.2	2	0.8	250	67.0	
Sex									
Male	42	19.5	170	79.1	3	1.4	215	57.6	X ² =1.369 P=0.504
Female	31	19.6	122	77.2	5	3.2	158	42.4	
Marital status									

Single	1	2.3	42	97.7	0	0.0	43	11.5	X ² =69.835 P=0.000**
Married	38	16.1	196	83.1	2	0.8	236	63.3	
Divorced	2	8.7	17	73.9	4	17.4	23	6.2	
Widowed	32	45.1	37	52.1	2	2.8	71	19.0	
Religion									
Muslim	73	20.3	279	77.5	8	2.2	360	96.5	X ² =3.736 P=0.154
Christian	0	0.0	13	100.0	0	0.0	13	3.5	
Educational level									
Illiterate	4	22.2	12	66.7	2	11.1	18	4.8	X ² =41.233 P=0.000**
Primary	41	33.6	76	62.3	5	4.1	122	32.7	
Preparatory	6	8.8	61	89.7	1	1.5	68	18.2	
Secondary /Technical	15	11.2	119	88.8	0	0.0	134	35.9	
University	7	22.6	24	77.4	0	0.0	31	8.3	
Duration of dialysis									
<5	37	14.7	210	83.7	4	1.6	251	67.3	X ² =18.444 P=0.005*
5-	23	31.1	50	67.6	1	1.4	74	19.8	
10-	12	28.6	27	64.3	3	7.1	42	11.3	
≥ 15	1	16.7	5	83.3	0	0.0	6	1.6	

Table 9 clarifies that 100% of the patients reported high levels of satisfaction who aged < 20 years, had highest level of satisfaction (p= 0.001**). Also, 95.7 % divorced patients and 88.9 % educational level (Illiterate) had highest level of satisfaction (p= 0.000**). Moreover, 84.8 % of them female patients had statistically significant (p= 0.022*).

Table (9): Relationship between the studied patients' levels of total satisfaction and their demographic characteristics (n= 373).

Patients' characteristics	Levels of Satisfaction						Total N=373		Test of Significance
	Low (N= 19)		Moderate (N= 62)		High (N= 292)		No.	%	
	No.	%	No.	%	No.	%			
Working hospital									
General	12	7.1	29	17.1	129	75.9	170	45.6	X ² =5.164 P=0.271
Central	0	0.0	12	18.5	53	81.5	65	17.4	
Fever	7	5.1	21	15.2	110	79.7	138	37.0	
Age (years)									
<20	0	0.0	0	0.0	13	100.0	13	3.5	X ² =26.103 P=0.001**
20-	2	13.3	1	6.7	12	80.0	15	4.0	
30-	5	11.6	1	2.3	37	86.0	43	11.5	
40-	0	0.0	5	9.6	47	90.4	52	13.9	
≥50	12	4.8	55	22.0	183	73.2	250	67.0	
Sex									
Male	15	7.0	42	19.5	158	73.5	215	57.6	X ² =7.615 P=0.022*
Female	4	2.5	20	12.7	134	84.8	158	42.4	
Marital status									
Single	5	11.6	1	2.3	37	86.0	43	11.5	X ² =26.519 P=0.000**
Married	12	5.1	37	15.7	187	79.2	236	63.3	
Divorced	0	0.0	1	4.3	22	95.7	23	6.2	
Widowed	2	2.8	23	32.4	46	64.8	71	19.0	
Religion									
Muslim	19	5.3	61	16.9	280	77.8	360	96.5	X ² =1.671 P=0.434
Christian	0	0.0	1	7.7	12	92.3	13	3.5	
Educational level									
Illiterate	0	0.0	2	11.1	16	88.9	18	4.8	X ² =28.301 P=0.000**
Primary	3	2.5	24	19.7	95	77.9	122	32.7	
Preparatory	6	8.8	3	4.4	59	86.8	68	18.2	
Secondary /Technical	4	3.0	27	20.1	103	76.9	134	35.9	
University	6	19.4	6	19.4	19	61.3	31	8.3	
Duration of dialysis									
<5	12	4.8	39	15.5	200	79.7	251	67.3	X ² =12.054 P=0.061
5-	7	9.5	9	12.2	58	78.4	74	19.8	
10-	0	0.0	13	31.0	29	69.0	42	11.3	
≥ 15	0	0.0	1	16.7	5	83.3	6	1.6	

X² Chi Square Test * statistically significant at p ≤ 0.05 ** highly significant at P ≤ 0.001

Table 10 clarifies that 67.0% of the patients reported high total clinical outcomes aged ≥ 50years, 63.3% of them married, 35.9% of them the educational level (secondary / technical) and 67.3 % of them the duration of dialysis less than 5 years, had highest level of total clinical outcome, (p= 0.000**). Finally, 57.6% of them male patients, had statistically significant, (p= 0.052*).

Table (10): Relationship between the total clinical outcome of studied patients and their demographic characteristics (n= 373).

Patients' demographic characteristics	Total N=373		Test of Significance
	No.	%	
Working hospital			
General	170	45.6	X ² =5.625 P=0.229
Central	65	17.4	
Fever	138	37.0	
Age			
<20	13	3.5	X ² =46.634 P=0.000**
20-	15	4.0	
30-	43	11.5	
40-	52	13.9	
≥50	250	67.0	
Gender			
Male	215	57.6	X ² =5.930 P=0.052*
Female	158	42.4	
Marital status			
Single	43	11.5	X ² =44.404 P=0.000**
Married	236	63.3	
Divorced	23	6.2	
Widowed	71	19.0	
Educational level			
Illiterate	18	4.8	X ² =57.737 P=0.000**
Primary	122	32.7	
Preparatory	68	18.2	
Secondary /Technical	134	35.9	
University	31	8.3	
Duration of dialysis			
<5	251	67.3	X ² =11.985 P=0.000**
5-	74	19.8	
10-	42	11.3	
≥ 15	6	1.6	

X² Chi Square Test * statistically significant at p ≤ 0.05 ** highly significant at P ≤ 0.001

Table 11 reveals that highly statistically significant relations were found between functional status and patients' satisfaction, total clinical outcomes (p= 0.000**). Moreover, the patients' satisfaction had highly statistically significant relations with total clinical outcomes (p= 0.000**).

Table (11): Correlation Matrix among the studied patients' clinical outcomes dimensions (n= 373).

Items		Functional Status	Patients' Satisfaction	Total Clinical Outcomes
Functional Status	r P			
Patients' Satisfaction	r	0.427		

	P	0.000**		
Total Clinical Outcomes	r	0.680	0.953	
	P	0.000**	0.000**	

r: correlation coefficient * Statistically significant at $p \leq 0.05$ **highly significant at $P \leq 0.001$

Table 12 reveals that statistically significant relation was found between nurses' motivation and patients' clinical outcomes ($p= 0.005^*$).

Table (12): Relationship between nurses' motivation and patients' clinical outcomes.

Variable		Nurses' motivation	patients' clinical outcomes
Nurses' motivation	r P	1	0.923 (0.005*)
Patients'clinical outcomes	r P	0.923 (0.005*)	1

r: correlation coefficient * Statistically significant at $p \leq 0.05$ **highly significant at $P \leq 0.001$

Discussion

Nursing motivation and patients' outcomes are considered important concepts of leadership and management in nursing. In medical system motivation plays an important role in the nurses' and patients' outcomes either positive or negative, which increased productivity of health care system and manifested in patients' outcomes.⁽¹¹⁾ The patients' outcome in the health care organization depends on skills, knowledge and motivation to nurses. So, it is important for leaders to motivate nurses to obtain the desired outcomes. The leader requires creative, interesting and continuous ways to make nurses' feel good for about what they are doing.^(11, 18) So, the present study sought to examined the relationship among the nurses' motivation and the patients' outcomes in hemodialysis departments of General Hospital, Central Hospital, and Fever Hospital at Kafr EL-Dawar.

Demographic characteristics of the study nurses

The all wide variety of nurses who participated with inside the current study was 84 nurses from three departments of hemodialysis at Kafr EL-Dawar General Hospital, Central Hospital, and Fever Hospital, which had been founded during data collection. Concerning nurses' age, half of the study nurses aged from 25 years old to much less than 35 years old. While, few of them aged 55 years old and above. Also, the majority of nurses had been females or married. Moreover, more than half of them had bachelor degree in nursing, less than half of them had a secondary school of nursing diploma, and few of them had a technical institute of nursing diploma. Concerning the years of nursing experience much less than half of them had more than 5 years of experience.

Total Motivation

The present study showed that the t motivation was low. From the perspective of the researcher, this result may be related to; absence of authority, absence of support for nurses, centralized management, and low income, lack of facilities, increased nurses' work load, harassment and violence against them. This results at the same line with a study was done at Ethiopia, by **Negussie and Oliksa** (2020)⁽¹⁹⁾, who revealed that nurses' job motivation was low. Another study was inconsistent with this result at the University of Tampere, by **Toode** (2015)⁽²⁰⁾, who revealed that the nurses appeared to moderately motivated to work, and the majority of nurses had a strong intrinsic motivation.

This result was inconsistent with a study was done at Banha University Hospitals, by **Atia**, (2012)⁽¹⁸⁾, who mentioned that a lot of the studied nurses had highly motivated. Also, this result is incongruent with a study was done at Menoufia University on the nurses, by **Mabrouk** (2021)⁽²¹⁾, who demonstrated that highly statistical significance among the nurses who implement the motivation program. Moreover, a study was done at Regional General Hospitals Enfermeria Clinica, by **Gunawan, Hariyati and Gayatri** (2019)⁽²²⁾, who found that good motivation led to the nurses make the best effort to give good service. Also, a study was done at Korle Bu Teaching Hospital, Ghana, by **Aduo-Adjei, Emmanuel and Forster** (2016)⁽²³⁾, who revealed that intrinsic or extrinsic motivating factors affect the work performance of the nurses and lead to the motivation high.

Domains of MWF

Domains of MWF according to mean score were ranked as the following: peer interaction, achievement, work responsibility, supervision, hospital policy, nature of work and job assurance. In the opposite, **Atia** (2012)⁽¹⁸⁾, mentioned that the domains of MWF had different ranking: peer interaction, work responsibility, nature of work, supervision, hospital policy, achievement, and job assurance. Regarding the peer interaction domain, the current study appeared that half of the nurses had high motivation in relation to peer interaction. From the perspective of the researcher, most of the studied nurses having cooperation and a high spirit of teamwork that will increase motivation, improve performance, and will improve patient outcomes. This result was supported by **Toode** (2015)⁽²⁰⁾, who revealed that most of the nurses were motivated. Therefore, it is important to maintain motivation which lead to feel continuously valued and their autonomy is respected.

Regarding the achievement domain, the current study revealed that half of the nurses had moderate motivation for achievement. may be due to some of the studied nurses participating in training programs during work and sometimes the presence of various rewards for good physical and moral performance.

This finding is compatible with a study was implemented in Amhara regional state, by **Ayalew**, et al. (2021)⁽²⁴⁾, who said that the nurses' job satisfaction with the intrinsic motivational factors were moderate. Also, another study was done at Enfermeria clinica, by **Gunawan, Hariyati and Gayatri** (2019)⁽²²⁾, who mentioned that the nurses will be motivated to improve their competence and affecting the performance.

Furthermore, another study was done by **Toode**, et al. (2014)⁽²⁵⁾, who illustrated that the key factors which influence on nurses' motivation such as individual achievements, autonomy and training. Also, the study was done by **Kitsios, Kamariotou** (2021)⁽²⁶⁾, which appeared that the relationships with staff nurses and the level of achievement considered a key of motivation, while the level of rewards and job characteristics play a secondary role. Regarding the work responsibility domain, the current study revealed that the minority of nurses had moderate motivation in relation to work responsibility. From the perspective of the researcher this result might be due to a lot of the studied nurses not having some authority to do their responsibility and sometimes not participating in decisions making during work. This result is disagreement with the study was conducted by **Guinot, Monfort and Chiva** (2021)⁽²⁷⁾, who revealed that nurses were participation in decisions influenced on job satisfaction both directly and indirectly and lead to increased nurses' perception of trust and increased motivation.

This finding was inconsistent with the study was conducted by **El Sayed and Ali** (2017)⁽²⁸⁾, who demonstrated that there is a significant correlation between motivation and decision making. Additionally, a study was conducted at Banha University Hospitals, by **Atia** (2012)⁽¹⁸⁾, who said that a lot of the studied nurses were highly motivated with the responsibility as a MWF at Banha University Hospitals. Furthermore, a study was done by **Herman, Deal and Lopez** (2011)⁽²⁹⁾, who stated that staff positions without access to opportunities were more likely to be less motivated. Regarding the supervision domain, the current study revealed that the minority of the nurses had moderate motivation in relation to supervision. From researcher point of view this result might be due to most of the studied nurses doesn't have feedback from their supervisors.

This result was inconsistent with the study was done by **Demirhan** (2020)⁽³⁰⁾, who revealed that a positive managers' leadership behaviors lead to increases the work motivation of the nurses. Moreover, a study was conducted at Pakistan by **Rabbani**, et al. (2016)⁽³¹⁾, who discovered that the health supervisors are motivated through their role in providing supportive supervision to nurses and through the support obtained from their coordinators and managers. Family support, autonomy or altruism are individual-level motivating factors. Also, another study was conducted by **Koivu, Saarinen and Hyrkas**, (2012)⁽³²⁾, who demonstrated that the nurses who received efficient clinical supervision were more motivated and committed to the organization.

Regarding the hospital policy domain, the current study revealed that a lot of the nurses were moderately motivated in relation to hospital policy. From researcher point of view this result might be due to most of the studied nurses working in the hemodialysis department preferring work hours and times were suitable for them and the place of hospital suitable for them followed by a need for changing shift with a person else. It may be very essential to understand those personal and organizational factors among nurses.

This finding was consistent with the study was done by **Alhakami and Baker** (2018)⁽³³⁾, who revealed that a lot of the study nurses have a significantly higher positive perception as regards work shared values and their influence on work. Similarly, a study was done by **Bahrudin, Sutomo and Purwanto** (2017)⁽³⁴⁾, who mentioned that there is a high

relationship between policy and motivation. Additionally, a study was done by **Sleem and Zakaria** (2015)⁽³⁵⁾, who found that the majority of the nurses had the highest motivation regarding integrated regulation. Furthermore, there is a study was conducted by **Mosadeghrad, Ferlie and Rosenberg** (2011)⁽³⁶⁾, who stated that when decreased the level of job stress in the organization by increasing nurses' satisfaction with policies, and participation in policy development will lead to increase nurses' motivation.

Regarding the work nature domain, the current study illustrated that a lot of the studied nurses were moderately motivated in relation to work nature. From researcher point of view might be due to the nature of work to some of the studied nurses suited to personal preferences, good working nature is a crucial factor for motivating nurses to perform work effectively. This finding is disagreement with a study was done in Malaysia, by **Nasurdin, Tan and Khan** (2020)⁽³⁷⁾, who revealed that the work nature imperative in motivating nurses to work and exert more effort in their job tasks. Also, this result was incompatible with the study was done at Pakistan, by **Farman, et al.** (2017)⁽³⁸⁾, who illustrated that there was a positive correlation relationship among the nurses' job satisfaction or the nurses performing work effectively which effect on nurses' motivation.

Moreover, the study was conducted on the University of Tampere, by **Toode, et al.** (2015)⁽²⁰⁾, who demonstrated that the nurses' perceptions to work could affected the nurses' motivation or perceptions of work satisfaction might be relevant to patient safety improvement work. Additionally, the study was done at Banha University Hospitals, by **Atia** (2012)⁽¹⁸⁾, who revealed that more of studied nurses were highly motivated in relation to their work nature. Regarding the job assurance domain, the current study revealed that a lot of nurses were low motivated in relation to job assurance. From researcher point of view which might be due to absence of the incentives and financial rewards, medical care for the nurses in work.

This finding is inconsistent with the study was conducted by **Baljoon, Banjar and Bankhar** (2019)⁽³⁹⁾, who revealed that there was a positive relationship between pay, promotion, supervision, nature of work, communication and working conditions and nurse's motivational level. Moreover, a study was done by **Abu Yahya** (2019)⁽⁴⁰⁾, who revealed that high internal motivation among nurses needed a lot of enjoyment of their work atmosphere, higher salary, and should be given motivation to improve a nurses' challenge, autonomy and competency. Additionally, this result was in agreement with the study was conducted in Addis Ababa hospital, by **Negussie** (2012)⁽¹⁴⁾, who revealed that the nurses were less motivated by rewards they obtained while rewards have a significant and positively contribution to nurses' motivation. However, this study was inconsistent with the study was done by **Kanat-Maymon, Yaakobi and Roth** (2018)⁽⁴¹⁾, who revealed that authority is a unique motivational force that may impact on organizational outcomes.

Relationship between demographic characteristics and TM.

The result of this study demonstrated that there wasn't statistical significant relationship among all demographic characteristics of the studied nurses and total motivation including working hospital, age, gender, educational level, years of experience and marital status. this might be due to unfair treatment of head nurse to nurses, the nurses not work in your specialty and inadequate training programs at the hospital. the vacation system was inappropriate to the most of nurses, the absence of freedom to express the nurses' opinion in their work and the nurses not participated in making decision during work.

This result was agreed with Garcimartín, et al. (2022)⁽⁴²⁾, who suggested that motivational interviewing delivered by trained nurses is effective in improving self-care by patients. Moreover, a study was done by **van Beers, et al.** (2021)⁽⁴³⁾, who illustrated that the specific motivational regulations predict dietary quality and physical activity improvements of patients' status. Therefore, motivation may be a key to achieving behavior change. Additionally, a study was done by **Baljoon, Banjar and Bankhar** (2018)⁽⁴⁴⁾, who discussed that nurses work motivation would affect by many personal and organizational factors which were crucial in affecting the level of nurses' motivation.

Patients' outcomes:

Demographic characteristics of the study patients

The total number of patients who participated in this study was 373 patients from three departments at Kafr EL-Dawar General Hospital, Central Hospital, and Fever Hospital, which were available during data collection. In relation to patients' age, more than half of the studied patients were aged ≥ 50 years old. As regard gender and marital status, more than half of the studied patients were male and married. Concerning the educational level of patients under study, it was found that less than half of them had Secondary/Technical education. Also, more than half of the patients under study their duration of dialysis < 5 years.

Patients' levels of clinical outcomes.

The results of the current study appeared that a lot of studied patients reported high total clinical outcomes. From researcher point of view this might be due to the nurses was friendly toward patients, not abrupt patients about any changes in his cases and gave patients time to fully described their status and some patients able to eat, drink, work, slept and felt rested after this dialysis procedure, the nurses could be providing good nursing care to their patients and achieve patients' satisfaction through their good listening skills and ability to managed or treated patients as a person.

And the majority of the studied patients reported moderate functional status. this may be related to the patients sometimes walking uncomfortable, feeling pain, dizzy and stressed after the dialysis procedure. Also, a lot of the studied patients reported high patients' satisfaction. From the perspective of the researcher this might be due to the nurses treating them with respect, friendly ship and honest about their conditions, the nurses give fully answering about patients' questions. This finding was supported with the study was done in a tertiary health facility in Nigeria, by **Mobolaji**, et al. (2020)⁽⁴⁵⁾, who revealed that some of patients had a high level of satisfaction with nursing care. Also, these finding disagrees with study was done at Minia university hospital, by **Fouad, Abdelrahman and Mohamed** (2020)⁽⁴⁶⁾, who found out that half of patients low answered high level of satisfaction and the majority of patients exhibited responses toward level of satisfaction was a moderate at General university hospital.

Also, the study was done by **Hussain**, et al. (2019)⁽⁴⁷⁾, who illustrated that there found a significantly positive impact on patient satisfaction to promote a higher level of satisfaction. Also, another study was done by **Lu, Zhao and While** (2019)⁽⁴⁸⁾, who illustrated that nurses' job satisfaction when increased lead to improved patients' perceptions of care quality and make sure an adequate nursing workforce to increase the quality of patient care. This end result become incongruent with **Abd-El-Aziz and Wahab** (2019)⁽⁴⁹⁾, who found out that moderately satisfied with quality of care given to patients. there wasn't statistical significant positive correlation among nurses' satisfaction and patients' satisfaction with quality of care. Also, this finding agreed with study was done at a tertiary care hospital, by **Shinde and Kapurkar** (2014)⁽⁵⁰⁾, who revealed that statistically significantly high patient satisfaction with nursing care.

Also, the study was done at a tertiary care center in Lebanon, by **Ammo**, et al. (2014)⁽⁵¹⁾, which showed an acceptable level of satisfaction with the healthcare system delivered. Further, the study was done by Liu, et al. (2014)⁽¹³⁾, who demonstrated that the attributes of patients' outcomes including patient functional status and patient satisfaction are influenced by the patients' characteristics, health problems and offering good nursing care to whole patients was a main goal of nursing. Patient outcomes do significantly impact the quality of nursing care in nursing. These results come in the same line with the study done in south Egypt and Tanta, by **Abou Zeina** et al., (2013)⁽⁵²⁾ and **Elsayed, El-Melegy and El-Zeftawy** (2013)⁽⁵³⁾, who mentioned that patients become satisfied in health care facility through completing some expectations regarding his health status and his humanity and rights.

Relationship between the total clinical outcome of studied patients and their demographic characteristics

The result of this study reveals that highly statistical significant relations were present among total clinical outcome and their demographic characteristic. From researcher point of view this might be due to the patients able to talking effectively after dialysis procedure, absence of feeling stressed and able to work after dialysis procedure. the patients able to slept and rested after dialysis procedure, the most patients' not admitted to hospital after dialysis procedure. the nurses not abrupt the patients about any changes in your cases, the nurses gave the patients' time to describe your status and the nurses answered about the patients' questions.

This finding is matching with a study was done in HD Lahore general hospital unit, Pakistan, by **Iqbal**, et al (2021)⁽⁵⁴⁾, who founded that a lot of patients were satisfied with care they obtained at the dialysis unit. Also, this result was congruent with the study was done by **Ebada**, et al. (2019)⁽⁵⁵⁾, who discussed that implementation of self-care management has positive effect on improving patient's self-care, which enhancing all dimensions of patients' outcomes. Moreover, a study was done by **Karaca and Durna** (2019)⁽⁵⁶⁾, who revealed that patients were more satisfied with the caring by nurses and less satisfied with the information given.

Also, a study was done by **Hussein**, et al. (2018)⁽⁵⁷⁾, who demonstrate that intervention program had statistically significant positive effect on clinical outcomes. Also, this study result was disagreement with a study was done by **Adhikary**, et al. (2018)⁽⁵⁸⁾, who illustrated that the patients are not satisfied with their received care. In this respect with these findings, study was done by **Hasanah**, et al. (2017)⁽⁵⁹⁾, who revealed that there was a significant relationship between nurses caring and patient satisfaction. Also, the study was done by **Batbaatar** et al. (2015)⁽⁶⁰⁾, who demonstrate that patients' satisfaction reflects patients' perceptions and desires towards health service utilization. Additionally, this results disagreement with the study was done by **Palmer**, et al (2014)⁽⁶¹⁾, who founded that

hemodialysis patients are less satisfied with the aspects of nursing care. However, this study was inconsistent with a study applied in Kenyatta national hospital Nairobi, Kenya, by **Ndambuki** (2013)⁽⁶²⁾, who, founded that patient had been satisfied with nursing services.

Relationship between nurses' motivation and patients' outcomes

These study findings refereed that there has been a statistical significant relationship among nurses' motivation and patients' outcomes and demonstrated that when nurses' motivation increased lead to increase in patients' outcomes, vice versa. From researcher point of view this result might be attributed to; working in the hemodialysis department which had some properties such as imposition of physical and emotional demands on nurses, due to; load of work, absence of cooperation among nurses and physicians and scarce of resources. when nurses are encouraged this lead to enhance performance, good patients' functional status and patient satisfaction, which improves patients' outcomes.

This finding is congruent with a study was done by Likewise, **Jonker, Fisher and Badgett** (2022)⁽⁶³⁾, who said that nurses' involvement in clinical research is associated with better patient feedback and improved patient outcomes including mortality. This result was consistent with the study was applied in Minia hospital, by **Ramdan, Abd Elrhman and Abdel- Elrahman** (2021)⁽⁶⁴⁾, who illustrated that there was relationship among nurses' motivation factors and patients' satisfaction in dialysis units in Minia hospital. Furthermore, a study was done by **Fernet et al.** (2017)⁽⁶⁵⁾ in Canada, who explain that how motivation quality effect on the patient outcome. In addition, the study was done at the Amasaman Municipal Hospital in Ghana, by **Odoom** (2015)⁽⁶⁶⁾, who studying the effect of motivation on the nurse's performance and finding nurses are motivated by intrinsic and extrinsic factors, which relevant for effective work performance among nurses.

Also, this finding was compatible with the study was applied by **Bodur and Infal** (2015)⁽⁶⁷⁾, who revealed that there was a significant relationship among some motivation sources, satisfaction from the unit and perception of work stress. Additionally, a study was performed at Kenyatta National Hospital (KNH) by **Simeza** (2013)⁽¹¹⁾, who assessing the effect of nurses' motivation on patients' outcomes in renal unit. This study demonstrated that nurses are stimulated with achievement, recognition, autonomy and remuneration and the patients were satisfied with perfect nurses listening skills, deal with patient as a person, nurses' responsiveness and provision of information. In contrast, a study was performed at Addis Ababa hospital by **Negussie** (2012)⁽¹⁴⁾, who mentioned that the nurses were less motivated regarding to rewards which they will receive.

Conclusion:

The finding of the current study demonstrated that, there was a statistically significant relationship among nurses' motivation and patients' outcomes in hemodialysis departments at Kafr El-Dawar General, Central and Fever Hospitals. Also, the total motivation was low and high total clinical outcomes.

Recommendations:

Hospital administrators and nurse supervisors should:

- *Consistently implementing professional interventions and strategies for managing nurses' motivation and patients' outcome to foster a supportive work environment, enhance job satisfaction, and reduce turnover.
- *Improve the nurses' job motivation by creating a cooperative and collaborative working environment, and team spirit among nurses.
- *Create an equitable work environment and keep clear and open communication with nurses through conducting frequent periodic meetings to discuss and discover their work problems and complaints.
- *Encourage sharing system (knowledge, practical skills) among nurses to improve work productivity.
- *Provide the nurses with continuous comments and feedback about their performance and prevalent variations of individual.
- *Offer non-stop training to participate in decision making, problem-solving and improve nurses' skills practice or performance.
- *know the hospital mission and vision, additionally clarify the hospital aims with nurses which assist them to recognize their roles and obligations within side the hospital.

Nurses should:

- *Develop their problem-solving practice, participative in decision-making and high performance, skill practice through attending training program.
- *make their communication skills with the health care supervisor and top level managers were good by using

social and emotional intelligence technique.

*Attend orientation program about hospital mission, vision and policy.

*Nurses must usually offer correct and adequate information to their patients because this assist the patients in making an informed decision pertaining to the management of chronic illness.

Limitations of Study

*Some nurses and patients were worried from their questionnaire.

*A lot of time required to complete data collection of the study.

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CONFLICTS OF INTEREST

There is no conflict of interest to disclose.

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