Effectiveness of health literacy for informed consent on patient satisfaction undergoing surgery: A randomized controlled study

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Abstract

Background:-Informed consent can be considered as a time-wasting and a process that request high effort and intensive experience. The need for educating patients regarding their surgical operation or any medical procedure improves their satisfaction with their evaluation, as well as satisfaction in general. This study aimed to evaluate the effect of health literacy for informed consent on patient satisfaction undergoing surgery. The study hypothesized that, health literacy for informed consent process will be have positive effect on patient's satisfaction undergoing surgery. **Design:** Prospective randomized controlled trial using video assisted method. **Sample &Setting:** A total of 218 patients undergoing to surgery at Al-Salam Hospital at Port Said city and Gastroenterology Hospital, Damietta Egypt, were randomly selected and assigned into two groups (simple random sample). **Tools of data collection:** data was collected through three tools named as, tool I awareness of patients regarding informed consent, tool II: patient perception toward perioperative anesthesia service questionnaire, tool iii: leiden perioperative care patient satisfaction. **Results:** There was statistical difference between health literacy and higher level patient satisfaction related to informed consent in interventional groups than non-interventional after the surgical operation. **Conclusion:** Great effect of health literacy of informed consent for intervention group on overall patient satisfaction after surgery. **Recommendation:** Nurses necessity be attentive of health literacy function toward delivering healthcare and precisely supporting patients during the procedure of informed consent.

Keywords: Informed consent, Surgical operation, Empowerment, Health literacy, Patient satisfaction, Perception.

Introduction

The accurate informed consent procedure must be developed based on physician-patient communication. Patient must get the required information associated with the diagnostic results, treatment alternatives and potential hazards predicted to occur in future, allowing patient to take the informed decision (Stacey et al., 2017). Each patient must be treated individually during the surgical informed consent process. Patient awareness towards surgical informed consent is different, some patients need to be answered about reasons for each step and procedure occurred and need to recognize each details of the procedure while other patients may need to recognize only the essentials (Ganai, 2019).

Informed consent was not considered merely a file but rather a procedure (Bernat, Peterson, 2006 &Wakefield et al., 2018). Throughout it is morally important and legitimately authoritative of health care provider to convey information regarding healthcare processes that defines benefits, hazards, and decision options (Chima, 2018&Farrell et al., 2014). Informed consent is vital for patient whose has the adequate knowledge about all procedures that will happen to him in that healthcare setting to agree with performing these procedures (Mbonera, 2017, Farrell et al., 2014)

The negotiations that occurred during the informed consent process are personalized and individualized for the patients' condition and surgical operation objectives

nevertheless also their changing data requirements, health literacy, angered worry (Perrenoud et al., 2015). Moreover notifying patients around medical procedure and surgical operations with it's substitutes encourages satisfaction and happiness of patients with their decision and choice they made regarding surgery (Ganai, 2019 & Hallock et al., 2017) mentioned that it is not recognized to what degree a patient's accepting the surgical plan that has an influence on his satisfaction with the choice to progress with this operation.

Health literacy was defined with World Health Organization as "The intellectual and societal abilities that control the inspiration and capability of individuals to gain access, recognize and use information in ways which promote and maintain good health" (Delgado& Salamanca, 2018). Health literacy includes two basic types: the first one, functional health literacy which stated the personals' capability to read information related to the health status and health problems. The second type is comprehensive health literacy which concerned with personals' capacity to acquire, recognize, evaluate, and relate information regarding health to improve wellbeing or avoid illnesses (Almaleh, Helmy, Farhat, Hasan & Abdelhafez, 2017).

Evidence from several studies surveyed that there are a numerous influences which affect the degree of health literacy. These factors contain occupation status, gender, level of education, socio-economic status and age. Researchers recommend and summarized that level of education is the most significant factor that affect the health literacy (HLS-EU Consortium, 2018 & Maliket al., 2017 & Rimnacova et al., 2018).

Patient satisfaction can be considered as a multi-dimensional healthcare concept which influenced by many factors. Informed consent may shape and impact patient satisfaction, which has a great effects of positive attitudes regarding patients such as confidence, efficiency and outcomes. Caring, compassion, consistency, responsiveness and sensitivity are factors that can be predicted to relate patient satisfaction to be improved (Bastable, 2017). Patient satisfaction is an approach, although it does not confirm that the patient will keep on trustworthy to the healthcare organization such as hospital or healthcare provider such as the nurse, it is continue to be a powerful positive motivating factor toward patient happiness and being gladness form the healthcare service provided. Patient satisfaction can be considered as an indicator of the health care service quality and the performance of healthcare providers (Stacey et al., 2017).

Significance of the study:

Informed consent can be considered as an administrative fundamental policy to any research based on the principles of patient rights, autonomy and self-determination, to achieve the purpose of informed consent it must be legitimate, efficient and provided with simple language suitable to educational level of the patient or relative. The details given at the informed consent should be correct, cover all significant parts, with disclosure of all important and unimportant data (Hoeyer, 2018).

Health care provider have a significant role in taking patient consent, and each member or patient should be given the adequate time required for the decision, with peaceful atmosphere to reflect on the detailed knowledge they obtain. Legally, simple consent guards patients against assault and battery in the form of undesirable healthcare interventions (Danie et al., 2019).Informed consent is important to healthcare provider to deliver the needed intervention as well as the patient's right to accept or reject clinical evaluation, treatment, or both (Timothy et al., 2018). In addition to, providing patients with complete, comprehensible information is essential for informed consent and patient satisfaction.

Aim of the study:

This study aimed to evaluate the effect of health literacy for informed consent on patient satisfaction undergoing surgery.

The research hypotheses:

We hypothesized that, health literacy for informed consent process will be have positive effect on patient's satisfaction undergoing surgery.

Subjects and Method

Study subjects

The study include 218 patients who waiting and scheduled for surgical operation basis were randomly assigned into two groups (simple random sample): intervention group received structured informed consent, paper, handout and nonintervention group received formal nurse education. The intervention group received information regarding the dangers and benefits of surgery, and postoperative care while, nonintervention group received formal nurse education. Exclusion criteria were: inability to write or read the consent format and situations of urgent surgical operations, the total sample size was calculated according to (Daniel, 1999) formula: n = [DEFF*Np(1-p)]/ [(d2/Z21-α/2*(N-1) +p*(1-p)]. According to that formula, the appraised sample size for each group of patients was for the interventional group 109 and non-interventional group 109 patients. Giving a total appraised sample size of 218 patients who accepted to participate in this study from both genders, of various ages, educational levels.

Sample size n = [1*187 (1-50)]/ [$(5^2/95^2_{1-\alpha/2}$*(187-1)+50*(1-50)]= 109 patient for each group, with confidence Level equal = (95%).

Study settings

The study was conducted at Al-Salam Hospital Port Said city and Gastroenterology Hospital, Damietta city, Egypt.

Data collection

Data of this study was collected using four different tools. **Tool I awareness of patients regarding informed consent.** This tool adopted by Mbonera, 2017. It includes three parts, first part which includes personal data as age, educational level. The second part was initially, structured, face-to-face interviews of preoperative patients undergoing surgery aimed to assess the knowledge, opinion &perception regarding informed consent. The third part comprised structured, face-to-face interviews seventh day after the surgery at the end of the first surgical follow up visit in outpatient clinic in mentioned setting, aimed to measure patients level of satisfaction about perioperative care and health literacy. The study questionnaire consists of five domains: A) General Information, including health relevant characteristics, knowledge of patient regarding informed consent about surgical-operations. The response is scored on a Likert scale, whereby a higher score was best satisfactory response and the lower response was low satisfactory and the overall response was measured. Scoring system was awareness of 100 to 80 percent was classified as high, 79 to 70 percent was classified as moderate, and less than 70 percent was considered low.

Tool II: **patient perception toward perioperative anesthesia service questionnaire:** This tool is adapted from (Sulaiman et al., 2015; Roberts, 2006) to measure the extent of patient perception of informed consent for surgical procedures. The response is scored according to the Likert scale, the higher score was best satisfactory response and the lower response was low satisfactory and the total score was determined. Scoring system was calculated from 80% to 100% perception of informed consent was classified as high, 79 to 70 percent was classified as moderate, and less than 70 percent was considered low.

Tool III: Leiden Perioperative Care Patient Satisfaction (LPPSq) was adopted with (Andemeske et al., 2019) to assess patient satisfaction with the perioperative service (care). It consists of three elements of peri-operative assessment. The first part is patients' satisfaction that comprises three elements (information, concern and fear, patient -staff relationship). The second part measures service and professional competence, the third part measures the prevalence of unwanted outcomes of anesthesia (needs and discomfort). Answers the items of the last mentioned three elements of satisfaction will be measured ina five-point Likert sort. The responses about patient-staff relationship and information were completely satisfied, satisfied, neither dissatisfied nor satisfied, dissatisfied and completely dissatisfied. The five-point Likert scale also had two questions from the 'service' dimension that addressed the waiting period. The responses to the element "fear and concern" are A little bit, Not at all, and Moderately A bit little more and Extremely". But, responses to the other items for service

and competence of professional element was No and Yes.

Field work:-Implementation stage:-

Next to the preparation and finishing the tools of data collection, and the official permissions obtained for starting the collection of the data, every patient was interviewed individually with face to face conversation with the first tool, each patient assessed for knowledge regarding informed consent. Then the other tools were examined pre and post implementation of the intervention for both groups. The intervention program was implemented between March 2018 till to May 2019 in the last mentioned settings during the morning and afternoon shift. Using video-assisted material about informed consent function, role, elements, advantage and risks, the researcher develop a material to be shown to each patient. The program was implemented at a separate individual interview session for each patient from the interventional group according to the patient needs concluded from the interview that done with the first tool, while the non-interventional group has the official hospital staff nurse education. The total allocated time for each day was 6 hours with two days per week, 30 minutes was the length of each session. Sessions begun from 11:00 am to 5:30 pm. Several learning and teaching tactics (multimedia-using material, lecture using handout, brain storming and discussion) were used, all principles of learning applied during the interview using questions and discussions strategies. Assessment of the effect of the implemented program was done immediately after implementation of the intervention by comparing between post-intervention results with the pre-intervention findings achieved by pre-test tools. The same tools were used in post-test assessment.

Administrative design and ethical consideration: Ethical approval achieved after communicating Research Ethics Committee of Nursing Faculty at Port Said University. Permission has been obtained from the respective hospital administrations to perform the analysis. Written informed consent was obtained from the study subjects (patients) before the selection of them to be included in the study. Questionnaires were made anonymous to maintain confidentiality.

Statistical analysis

Data were fed to the computer and analyzed using IBM SPSS software package version 21.Data were revised, coded and analyzed. Quantitative data was presented using mean, and standard deviation (range, minimum and maximum). Statistical significance difference of the gotten results was measured at the 5% level. The statistical tests that have been used were Chi-square test for variables that have categories, to compare between different groups, fisher's Exact or Monte Carlo correction for chi-square, marginal homogeneity test used to analyze the significance between before and after interventions.

Results

218 adult patients were planned undergoing surgery. The majority of patients were female, married, more than one third with age group 40-50 of age, less than half of them have higher level of education, approximately three quarters of them was working from both the intervention and nonintervention groups as presented at Table (1).

Table (2); at this table, no significant difference in health literacy dimensions' scores related to informed consent between two groups before surgical operation with poor knowledge, negative opinion, moderate perception, and poor total health literacy dimensions. Also a greater improvement in health literacy knowledge scores, opinion, perception and total health literacy after the educational session for the interventional group than the non-interventional group. Finally, there is statistical significant differences ($p=<0.001$) between interventional and non-interventional groups after surgical operation in knowledge, opinion, perception and total health literacy with the same (p) value.

Table (3) shows that most of the patients in interventional group have good knowledge, positive opinion, and satisfactory perception and total level related to informed consent after surgery with a higher percentage than before surgical operation with a statistically significant difference($p=<0.001$).

Table (4): illustrates that there were a statistical significant difference between

interventional and nonintervention patients in their scores for the next dimensions: telling information related to surgery(p=<0.001), Relation (p=<0.001), Discomfort and upset (p=0.020), Fear and worry (p=0.047), needs (p=0.039), and total Satisfaction dimensions (p=<0.001). The patients in the interventional group displayed increased satisfaction responses after providing the intervention than the nonintervention group after surgical operation.

T**able (5)** :Illustrates the relation between socio-demographic characteristics and level of health literacy dimensions among interventional group after the surgical operation. There is no statistically significant relation between level of health literacy and all socio-demographic characteristics except age (p=0.012) and educational level (p=0.002).

Table (6): illustrates the correlation between the health literacy dimension and satisfaction dimensions toward informed consent for interventional study group after surgical operation. It shows a positive correlation between total satisfaction, knowledge, opinion, perception and total literacy health.

Table (I): Frequency Distribution of Patient's According to Demographic Characteristics

Socio-demographic characteristics	Intervention group		Non-interventional group	
	N= (109)	%	N= (109)	%
Age (years)				
18-30 years	5	4.5%	8	7.3%
> 30 – 40 years	21	19.3%	12	11%
> 40 – 50 years	39	35.8%	40	36.7%
> 50 – 60 years	34	31.2%	36	33%
More than 60 years	10	9.1%	13	11.9%
Min. – Max.	18.0 – 72.0		18.0 – 71.0	
Mean ± SD	46.20±10.24		47.06±11.48	
Gender				
Male	61	56%	64	58.7%
Female	48	44%	45	41.3%
Marital status				
Single	2	1.8%	5	4.6%
Married	83	76.2%	82	75.2%
Divorced	14	12.9%	11	10.1%
Widowed	10	9.1%	11	10.1%
Educational level				
Illiterate	6	5.5%	7	6.4%
Primary & preparatory education	13	11.9%	15	13.8%
Secondary education	24	22%	17	15.6%
Technical education	24	22%	25	22.9%
Higher education	42	38.5%	45	41.3%
Job				
Work	83	76.1 %	78	71.6 %
Not work	16	14.7 %	14	12.8 %
Retired	10	9.2 %	17	15.6 %
Family member number				
1-3	31	28.4 %	25	22.9 %
4-5	74	67.9 %	76	69.7 %
More than 5	4	3.7 %	8	7.4 %
Family income (Egyptian pound)				
Less than 1500 p.	3	2.8 %	7	6.4 %
1500-3000 p.	53	48.6 %	42	38.5 %
3001-5000 p.	43	39.4 %	50	45.9 %
More than 5000 p.	10	9.2 %	10	9.2 %

Table 2: Health literacy dimensions' related to informed consent between two groups (n =218)

Dimensions	Before surgical operation						After the surgical operation					
	Non-Intervention group (109)		Intervention group (109)		c^2	P-value	Non-Intervention group (109)		Intervention group (109)		X^2	P-value
	No	%	No	%			No	%	No	%		
General Knowledge												
Poor	63	57.8	68	62.4	0.764	0.683	17	15.6	7	6.4	39.474*	<0.001*
Moderate	38	34.9	32	29.4			48	44.0	13	11.9		
Good	8	7.3	9	8.3			44	40.4	89	81.7		
Opinion												
Negative	81	74.3	85	78.0	0.940	MCp= 0.637	51	46.8	7	6.4	64.700*	<0.001*
Neutral	27	24.8	22	20.2			45	41.3	41	37.6		
Positive	1	0.9	2	1.8			13	11.9	61	56.0		
Perception												
Unsatisfactory	34	31.2	39	35.8	0.662	0.718	24	22.0	4	3.7	32.307*	<0.001*
Moderate	66	60.6	63	57.8			35	32.1	16	14.7		
Satisfactory	9	8.3	7	6.4			50	45.9	89	81.7		
Total												
Poor	50	45.9	53	48.6	0.204	0.903	4	3.7	2	1.8	54.407*	MCp<0.001*
Moderate	52	47.7	50	45.9			71	65.1	20	18.3		
Good	7	6.4	6	5.5			34	31.2	87	79.8		

MC: Monte Carlo test X^2: chi square test*: Statistically significant at $p \leq 0.05$

Table 3: Health literacy dimensions' scores related to informed consent before and after surgical operation for the interventional group (n =109)

Dimensions	Before		After		MH	P-value
	No	%	No	%		
General Knowledge						
Poor	68	62.4	7	6.4	3.712*	<0.001*
Moderate	32	29.4	13	11.9		
Good	9	8.3	89	81.7		
Opinion						
Negative	85	78.0	7	6.4	9.431*	<0.001*
Neutral	22	20.2	41	37.6		
Positive	2	1.8	61	56.0		
Perception						
Unsatisfactory	39	35.8	4	3.7	9.409*	<0.001*
Moderate	63	57.8	16	14.7		
Satisfactory	7	6.4	89	81.7		
Total						
Poor	53	48.6	2	1.8	9.477*	<0.001*
Moderate	50	45.9	20	18.3		
Good	6	5.5	87	79.8		

*: Statistically significant at $p \leq 0.05$ MH: Marginal Homogeneity Test associating between before and after

Table 4: patient satisfaction response after the surgical operation for non-intervention group and intervention group (n =218)

Satisfaction dimensions	Non-Intervention group (109)				Intervention group (109)				X^2	p
	Unsatisfactory		Satisfactory		Unsatisfactory		Satisfactory			
	NO	%	NO	%	NO	%	NO	%		
1. Telling Information related to surgery	78	71.6	31	28.4	32	29.4	77	70.6	38.829*	<0.001*
2. Discomfort and upset	54	49.5	55	50.5	37	33.9	72	66.1	5.451*	0.020*
3. Fear and worry	45	41.3	64	58.7	31	28.4	78	71.6	3.959*	0.047*
4. Needs	53	48.6	56	51.4	38	34.9	71	65.1	4.244*	0.039*
5. Relation	54	49.5	55	50.5	20	18.3	89	81.7	23.649*	<0.001*
6. Waiting time and services	50	45.9	59	54.1	53	48.6	56	51.4	0.166	0.684
7. Information related to Anesthesia	53	48.6	56	51.4	44	40.4	65	59.6	1.504	0.220
Total	65	59.6	44	40.4	11	10.1	98	89.9	58.904*	<0.001*

X^2: Chi square test
***: Statistically significant at $p \leq 0.05$**

Table (5) Relation between socio-demographic characteristics and level of health literacy among interventional study group after surgical operation (n =109)

Socio-demographic Characteristics	Levels of health literacy surgical operation						X^2	^{MC}p
	Poor (n = 2)		Moderate (n = 20)		Good (n = 87)			
	No.	%	No.	%	No.	%		
Age								
18-30 years	1	50.0	3	15.0	1	1.1		
> 30 – 40 years	1	50.0	5	25.0	15	17.2		
> 40 – 50 years	0	0.0	7	35.0	32	36.8	16.329*	0.012*
> 50 – 60 years	0	0.0	5	25.0	29	33.3		
More than 60 years	0	0.0	0	0.0	10	11.5		
Gender								
Male	2	100.0	11	55.0	48	55.2	1.255	0.663
Female	0	0.0	9	45.0	39	44.8		
Marital status								
Single	0	0.0	1	3.1	1	100.0		
Married	2	25.0	13	40.6	0	0.0	8.119	0.185
Divorced	4	50.0	10	31.3	0	0.0		
Widowed	2	25.0	8	25.0	0	0.0		
Educational level								
Illiterate	1	50.0	3	15.0	2	2.3		
Primary & preparatory education	1	50.0	2	10.0	10	11.5		
Secondary education	0	0.0	8	40.0	16	18.4	19.316*	0.002*
Technical education	0	0.0	4	20.0	20	23.0		
Higher education	0	0.0	3	15.0	39	44.8		

X^2:chi-square test MC: Monte Carlo

P: p-value for associating between different categories*Significant (P<0.05).

Table (6) Correlation between Health literacy dimension and satisfaction toward informed consent for interventional study group after surgical operation

Satisfaction dimensions	Health literacy after surgery			
	Knowledge	Opinion	Perception	Total
Total satisfaction	P= 0.126 r=0.043*	P= 0.063 r=0.358	P= 0.146 r=0.031*	P= 0.221 r=0.001*

*Significant (P<0.05).Spearman's test for correlation.

Discussion

Informed consent has a core element which is the understanding of potential hazards and risks occurring during surgical or medical procedures, also the possible consequence until accomplishment of the desired outcome (Leeet al., 2017). While, health literacy is the capability to know, recognize, practice medical data to create informed judgments (Batterham et al., 2016 & Kutner et al., 2006). Several

studies have been conducted to develop the role and importance of informed consent. But scarce studies have revealed a development of patient perception during use of video assisted demonstrations and role-play in informed consent awareness (Steffenino et al., 2007, Schwalmet al., 2012).

Current study showed a negative opinion, moderate perception, and poor knowledge and, total health literacy dimensions related to informed consent between two groups before the surgical operation with no statistically significant differences and this may be attributed to their negligence to informed consent procedure and lack of community awareness. These findings are congruent with a previous study by Yesufet al., (2019) who found that nearly two-thirds of subjects has low knowledge and moderate perception regarding informed consent of surgical procedures. Moreover, they were in line with Rastegar et al., (2020) who found that before the intervention, the two groups did not have substantially different health literacy scores; that is, in terms of their health literacy, the two groups were similar. In addition, Yesuf et al., (2019) discovered that the patient's information concerning informed consent for surgical actions was inadequate and their awareness concerning informed consent was low.

The present study results showed improvement of the level of health literacy related to knowledge, opinion, perception, and total level related to informed consent between the two groups after surgical operation with statistical significance and this magnitude the effect of our intervention with a health literacy approach and disclosure performance. This result is congruent with prior literature by Shoemaker et al., (2018). Moreover, Fleisher et al., (2014) revealed that non-interactive procedures, like reading additional information that done by patients independently or checked assisted videos, were less likely to increase the understanding of patients.

Also, according to (Yesuf et al., 2019) whose results indicated that nearly two-thirds of patients after surgery seeming as the informed consent did not notify them of the surgical procedure's danger through the consent process. Burks et al., (2019) believe that health literacy shows an imperative role in patients' experience in participating and considering clinical trials. Levels of literacy can influence the degree of knowledge which patients and relatives appreciate, also patients stated that consent has a role to be informed before experimental or therapeutic procedures. In another study by (Lewis et al., 1991) they concluded that is greater comprehension and postoperative recall of knowledge for patients who have been given written information.

While, this result similar to Rastegar et al., (2020) they found that, next to applying the intervention, a strong improvement founded at the intervention group's total health literacy score relative to the controls immediately and after the intervention by three weeks for the intervention group. While, Cakmak et al., 2018 mentioned that Preoperative anesthesia education, on the other hand, can improve a patient's understanding of the anesthesia protocol and compliance with perioperative instructions. The kind of knowledge provided, incentive and enthusiasm of patient, and the patient's literacy all influence the efficiency of this knowledge transfer.

Discussing that most of the patients have good knowledge, positive opinion, satisfactory perception and total level related to informed consent in interventional groups after surgery with a higher percentage than before surgery with a statistically significant difference, (Hadden et al., 2020) found that little health literacy is linked with reduced health outcomes in many long-lasting illnesses which have a significant function in decisive patient outcomes. In such perspectives, Yesuf et al., (2019) explored that the awareness of patients regarding informed consent revealed that approximately 59.6 % of post-surgical patients were unaware to the threats surrounding to surgery during the process of consent and this may due to anxiety feelings prior to surgery.

In our study, it was revealed that the major group of patients were highly satisfied in the interventional group than the non-interventional group with a statistically significant difference in some dimension as telling information related to surgery, relation, and total percentage in relation to patient satisfaction and this may be explained as, when giving knowledge to patient regarding

informed consent this led to decreased anxiety level thus increased satisfactory level. This finding is inconsistent with the previous twenty-seven research which measured patient satisfaction with the mechanism of informed consent. Compared to standard informed consent, eight studies showed higher satisfaction among the intervention group (Ham et al., 2016, Lin et al., 2018, Bowers et al., 2017, Zhang et al., 2017) and 19 studies found no difference in elements of satisfaction. In this regard, congruent with Lin et al., (2018) found that patients of the intervention group confirmed the greater satisfaction with informed consent process than in the non-interventional group.

Our study shows that the majority of the interventional study group patients' response had a higher standard deviation in ensuring that the patient is fully aware and understanding what will happen or may happen to him, protecting the hospital and its staff from the judiciary and a courtesy gesture or kindness regarding the role of informed consent after the surgical operation and this may be due to knowledge given. According to this view, Akyüz et al., (2019) found that 21.7 percent of all nurses agreed that informed consent must be received to legally protect the medical staff. In other studies, there is also (Yıldırım et al., 2014) indicating that regarding the fact that nurses consider consent to be legally secured was deemed to be delivered from the fact that those staff nurses didn't understand or recognize their roles and responsibilities at the field, as well as their legal obligations and in many aspects, the nurses may have legal difficulties.

The findings regarding demographic and level of health literacy among interventional study group after surgical operation found that significant difference in age, level of education and adequate health literacy. Also found age-related effect in terms of health literacy retention in patients older than 50 – 60 years with statistical significant in age and educational level. This stands in contrast to other studies that assessed the informed consent procedure in cataract patients and establish decreased information while age increased (Tipotsch-Maca et al., 2016). While, Johnson et al., (2011) mentioned that the degree of education plays a major role in patient ability, understanding and recalling the given knowledge to them. Other studies found that age and increasing level of education being extremely linked with satisfactory health literacy (Komenaka et al., 2014). Also, (Quevedo et al., 2018) illustrated that in the intervention group, the perception of informed consent was higher but there is no statistically significant. In low educational and socioeconomic environment, the program that delivered using the video-assisted material regarding informed consent procedure doesn't vary from the other traditional methods of delivering informed consent. Moreover, other researchers (Hallock, et al., 2017, Lin et al., 2018) found that educational level, race, anxiety score, age have no relation with health literacy and there was no major variance or difference between the highly satisfied patients and not highly satisfied classes.

Also, other researcher found that higher levels of education were correlated with better performance in the regression model that included only demographic characteristics as education Ownby et al., (2015). The same result by Yesuf, et al., (2019) revealed that having higher educational level with previous history of surgical procedure were significantly linked to high knowledge related to informed consent, whereas being urban, higher education, type of surgery, and obtaining consent from the doctor have a statistical relation that correlated with healthy knowledge of patients regarding informed consent.

The study found a positive correlation between total patient satisfaction and total health literacy dimension (knowledge, opinion, perception). This finding was similar to a study by Hallock et al., (2017) which found that the total satisfaction score of patient was high, which suggests improved satisfaction of decision made by patient. As assessed in the preoperative phases, satisfaction of a patient with his decision was strongly correlated with high awareness of the scheduled operation. Moreover, as well as patient satisfaction improved after educational awareness regarding consent (Lin et al., 2018).Influence of using video-assisted system in getting consent for surgical operations was analyzed by Nehme et al., (2013), which concluded that it was hard to determine that high satisfaction

of patient was associated with better comprehension or just during usage of video-assisted software, they said.

Moreover, researchers Lin et al., (2018) found a new idea about video-assisted learning that can help in enhancing awareness and improving the satisfaction among patients during the procedure of consent. Also there is a need to be stressed as substantial changes that being made while companies make attempts to enhance patient care, security, and standard of treatment, through the transition of formal care details and the method of consent standardization in the emergency department.

Conclusion:

According to the findings in the current study, it is concluded that, there is a great positive effect of intervention on a health literacy and overall patient satisfaction after surgery for the informed consent process.

Recommendations:

Based on the study findings, the study suggest the following recommendation; intervention about informed consent using video-assisted material can be standardized then applied in the field of nursing care to improve patient awareness regarding the surgical procedure, prevent dangers of surgery and increase patient satisfaction.

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