

## Effect of Nursing Instructional Program for the Patients with Routine cataract surgery (extracapsular cataract surgery and phacoemulsification surgery

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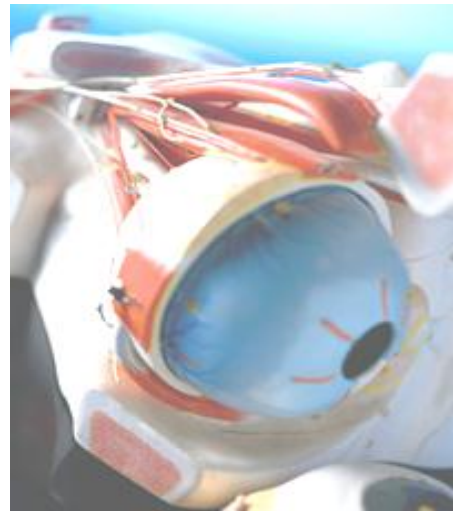
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### Summary

**Objective:** - To determine the effect of nursing instructional program to the patients with routine extra capsular cataract surgery and phaco emulsification surgery.

**Methodology:** - across – sectional study was conducted at IBN- AL Haythim teaching hospital for Eyes from December 2006 – July 2007. Probability sampling was comprised of 120 patient from routine extra capsular cataract and phaco emulsification surgery, each 60 patients was divided into (study group) patient who received nursing



instruction program and (30) patients (control group) .All the sample were follow- up for one month after surgery. Their health status was determine by the measurement of (Intra ocular pressure (IOP), Visual acuity (VA),and best correction) in addition to post operative complication such as (eye redness, swelling and eye tear ness )

**Results:** Results showed that the high percentage (81.6%)of patient with phaco emulsification surgery their intra ocular pressure(IOP) was ranges between (10 - 15 mm Hg) after surgery compared to before surgery their percentage was (45%). while the patient with routine extra cataract surgery was (30%) compared to before surgery was (27%) their intra ocular pressure was (10-16)mm Hg and there were statistically significant differences in testing (T. test) for IOP from pre and one month after surgery for both patients with routine extra capsular cataract surgery and phacoemulsification surgery. When examine the degree of vision, the

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result revealed that the study group is much better in phaco emulsification surgery. The education program had the highest percentage of improvement in the study group of routine extra cataract surgery and phaco emulsification surgery. High percentage for eye redness, swelling, and lacrimation(eye tears) after the operation.

**Conclusion:** The out come of phaco emulsification surgery was better than the routine extra cataract surgery. Instruction program was successful in improving information for both extra capsular cataract and phaco emulsification surgery; this was reflected through the measurement of (IOP), best correction and visual acuity before and after one month.

**Recommendation:** - it is recommended to application health education program by nurses to get highest result after the operation and to do more studies.

**Key words:** - phacoemulsification surgery, extracapsular cataract surgery, nursing instruction program

### **Introduction**

A cataract is the opacity of the crystalline lens. Caused vision problems, the most common type is the vision difficulty, even when the use of glass, the main point of medical treatment is a surgery to remove the affected lens and implant with artificial lens (1,2).

Cataract defined according to their type, location and degree. The types of cataract are congenital, age related, familial, traumatic, toxic, secondary to existing eye disease and associated with systemic disease (3,4). Patient with cataracts complain of gradual fading vision, often complaining that their vision is misty. Other visual disturbances include distortion of image, changes in color vision. Some complain of dazzling bright lights due to irregular refraction of rays through the opacities in the lens. .Some patients experience monocular diplopia. Posterior capsular opacities cause difficulty in near vision, leaving distance vision unaffected (4). The nurses are important advocates in helping the patient understand the complexities of treatment decisions and manage the side effect (°).

There is no evidence that reported studies which are related to the nursing instructional program to the patients with eye surgery are conducted in our country.

### **Methodology**

Quasi-experimental study conducted at the Ibn Alhythim hospital in the period from December 2006 to July 2007 on 120 patients who underwent routine cataract surgery (60 patient who extra capsular cataract surgery and

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60 patients who underwent phaco emulsification surgery), all patients whether the patients with extra capsular cataract surgery and phaco emulsification surgery were divided into two groups (study group included 30 patients and the control group included 30 patients. Study Group was giving them pre and after surgery information, while the control group had left on the routine procedure in hospital.

The study instrument was a questionnaire developed for the purpose of data collection. It was consisted of three parts

**Part I:** demographic characteristic (gender, age and address) and clinical characteristic (site of surgery, fasting blood sugar, serum blood urea and ECG).

**Part II:** The instruction Program was developed according to the reviewed and the related literature. Which include information before surgery (Top shower (shampoo), cleaning the eye, cutting eyelashes) and after surgery the surgery (Instructions for cleaning the eye within the aseptic technique , right methods of dropping in eye, administration of eye treatment, sleep after surgery, praying ,the impact of smoking on the eye, exposure to light, and top shampoo (shower).

**Part III:** tools to measure effectiveness of instruction. Which include (measurement of Intra ocular pressure (IOP), visual acuity, type of error and patients complain such as eye redness, swelling and eye tears. The pilot study is carried out to determine reliability, the result that instruction program was clear and understandable.

Research sample included all patients admitted to Ibn Alhythim hospital, and subject to extra capsular cataract surgery and Phaco emulsification surgery, those who met the inclusion criteria which ( were not undergoing surgery earlier appointed, scheduled for extra capsular cataract surgery and phacoemulsification surgery, and agree to participate in the study..

## Results

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**Table1 (1).Demographic Characteristic of patient with the extracapsular cataract surgery and Phacoemulsification surgery (study and control group)**

Variables	Phaco emulsification surgery n=60					routine extra capsular cataract surgery n=60				
	study group		control group		K.S	study group		control group		K.S.
	F	%	F	%		F	%	F	%	
<b>Gender</b>										
Male	17	56.6	14	46.6	(0.16)	16	53.3	14	46.6	(0.09)
Female	13	43.3	16	53.3	N.S.	14	46.6	16	53.3	N.S.
<b>Age</b>										
30 - 40	6	20	12	40	(0.204)	1	3.3	8	26.6	(0.19)
41 – 50	5	16.6	11	46.6	N.S.	5	16.6	7	23.3	N.S.
51 – 60	6	20	4	13.3		8	26.6	9	30	
61 and over	13	43.3	3	10		16	53.3	6	20	
<b>Address</b>										
North	7	23.3	11	36.6	(0.17)	9	30	7	23.3	(0.18)
Middle	15	50	10	33.3	N.S.	10	33.3	11	36.6	N.S.
South	8	26.6	9	30		11	36.6	12	40	

Results in the table ( 1) showed that the majority (56.6% and 53.3%) of patients in a study group of extracapsular cataract surgery and phacoemulsification surgery were men, while the results of the control group the majority (53.3%) of patients were female and 52.3% percentage their aged between 30 - 72 years. The mean of age was (55.2 ± 11.46) and most of the sample addresses of places from the meddle area of Iraq. No statistical significant differences were observed with regard to gender, age , and address between tow groups study and control (p>0.05) for patient with the extra capsular cataract surgery and Phaco emulsification surgery

**Table (2).Clinical Characteristics of the patient with extracapsular cataract surgery and phacoemulsification surgery ( study and control group)**

Variables	Phacoemulsification surgery n=60				extracapsular cataract surgery n=60			
	study group		control group		study group		control group	
	F	%	F	%	F	%	F	%
<b>Sit of surgery</b>								
R /EYE	17	56.7	15	50	17	56.7	14	46.6
L/EYE	13	43.3	15	50	13	43.3	16	53.3
<b>F.B.S</b>								
Normal	28	93.4	30	100	27	90	30	100
Above than normal	2	6.6	0	0	3	10	0	0
<b>B.U(serum blood urea</b>								
(3.3-7.5)mml Normal	30	100	30	100	30	100	30	100
<b>E C G (Electro cardio gram)</b>								
(Clear)	27	90	27	90	25	83.3	22	73.3
( Unclear)	3	10	3	10	5	16.6	8	26.6

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Seen from (Table 2) the percentage of the site of surgery was equal to the right and left eye in a study group for extracapsular cataract surgery and phacoemulsification surgery, either the control group were nearly equal percentages. Concerning laboratory tests such as fasting blood sugar sample was the high percentages of patients within the normal range for extracapsular cataract surgery and phacoemulsification surgery for the two groups (study and the control group) and the mean of the test was 5.15 and 5.1 mm/L respectively, as well as the percentage of serum blood urea was 100% normal range for extracapsular cataract surgery and phacoemulsification surgery (study and control group). Regarding ECG most of the sample was clear for both group.

**Table (3) Frequency and Percentage of eye Exam (IOP) before and after operation for patients with extracapsular cataract surgery and phacoemulsification surgery (before and after surgery)**

Intra ocular pressure(IOP) mmHg	Phaco emulsification surgery				routine extra capsular cataract surgery			
	before		after		before		after	
	F	%	F	%	F	%	F	%
10 - 15	27	45	49	81.7	17	28.3	18	30
16 - 20	33	55	11	18.3	43	71.7	42	70
Total	60	100	60	100	60	100	60	100

Table (3) shows that the Intra ocular pressure (IOP) of phacoemulsification surgery improved significantly after the surgery, where the percentage of patients is (81.7%) of the phacoemulsification surgery their Intra ocular pressure was (10-15 mmHg) while the extracapsular cataract surgery have not been improvements as much as before and one month after the surgery.

**Table ( 4 ). Mean, SD and t-test value of (IOP) test for the patients with extracapsular cataract surgery and phacoemulsification surgery (study & control group)**

Group	Group period	study		control	
		Mean ± SD	t	Mean ± SD	t
Phaco emulsification surgery	Pre	14.80 ± 2.17	3.184	15.30 ± 2.36	-
	1 month after	12..073 ± 2.45		17.30 ± 2.90	3.421
extra routine cataract surgery(extra)	Pre	16.06 ± 2.97	4.730	15.33 ± 2.48	-1.120
	1 month after	13.23 ± 3.28		16.56 ± 3.89	

df= 28 p < 0.01

This table showed that the (t test) for IOP exam was statistically significant difference between study and control group from pre and one

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month after surgery for both patient with extracapsular cataract surgery and phacoemulsification surgery.

**Table ( 5). Frequency Percentage of eye Exam ( visual acuity) for patients with extracapsular cataract surgery and phacoemulsification surgery ( study and control group)**

Variables	Phaco emulsification surgery						routine cataract surgery(extra)							
	study group			control group			study group			control group				
	Before %	After 1months		Before %	After 1months		Before %	After 1months		Before %	After 1months			
F	%	F	%	F	%	F	%	F	%	F	%	F	%	
V.A														
C.F (2meter)		13.3			23.3			8	26.6			15	50	
6/60		23.3			26.6			10	33.3			9	30	
6/36		26.6			26.6			8	26.6			1	3.3	
6/24		20			13.3			2	6.6			2	6.6	
6/18p		16.6			10			2	6.6	5	16.6	3	10	
6/18										6	20			2
6/12p						2	6.6							10
6/12			5	16.6		13	43.3			11	36.6			5
6/9p			6	20		7	23.3					1	3.3	8
6/9			13	43.3		5	16.6					7	23.3	2
6/6p			2	6.6		1	3.3							
6/6			4	13.3		2	6.6							

Table (5) shows that there is improvement visual acuity (VA) after the surgery compared with before surgery for patient with extracapsular cataract surgery and phacoemulsification surgery (study group). The improvement in visual acuity (VA) for patient with phacoemulsification surgery was better than the patient with extracapsular cataract surgery and this express by the visual acuity of study group after one month was ranged between ( 6/12 -6/6) , while the patient with extracapsular cataract surgery was ranged between ( 6 /18p-6/9) after surgery.

**Table (6). Frequency .percentage of red eye, swelling, and eye tears after one month for patient with extracapsular cataract surgery and phacoemulsification surgery (study and control group)**

		eye Redness		Swelling		Eye tears	
		F	%	F	%	F	%
Phaco emulsification surgery	Study: n=30	1	3.3	0	0	0	0
	Control : n=30	10	33.3	6	20	10	33.33
Routine extra capsular cataract surgery	Study: n=30	12	40	7	23.3	21	70
	Control: n=30	24	80	18	60.0	27	90

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Table 6 revealed that the eye redness was 3.3 after one month for the study group while the control group was 33.3% for patients with phacoemulsification surgery and 40% of the study group complain eye redness for patients with extracapsular cataract surgery while the control group was 80%. Concerning swelling and eye tear after one month the data revealed that the study group had no complain while the control group was 20% ,33.3% respectively for patient with phacoemulsification surgery and the swelling and eye tear after one month for patients with the extracapsular cataract surgery (study group) was 23.3 % , 70% respectively while the control group was 60%and 90%.

**Table (7 ). Type of errors after one month for patient with extra capsular cataract surgery and phacoemulsification surgery ( study and control group)**

Variables	phacoemulsification surgery n=60				extracapsular cataract surgery n=60			
	study group		control group		study group		control group	
	F	%	F	%	F	%	F	%
Hyper metropia	5	16.6	10	33.3	7	23.3	4	13.3
myopia	0	0	0	0	0	0	0	0
High myopia	0	0	0	0	0	0	0	0
Simple myopia	11	36.6	8	26.6				
Simple astigmatism	6	20	8	26.6	1	3.3	3	10
High astigmatism	0	0	4	13.3	16	53.3	14	46.6
Un clear	0	0	0	0	4	13.3	0	0

Table 7 revealed that the type of error for patient with phacoemulsification surgery was Simple myopia and Simple astigmatism for study and control group; while the patient with extracapsular cataract surgery had Simple astigmatism , most of them had high astigmatisms and unclear vision.

## Discussion

The finding of the present study shows that the highest incidence of the sample 31.66% was within the age group 61 and over. our finding is consistent with WHO and Sperduto, et al(7,8) who report In the United States, age-related lenticular changes have been reported in 42% of those between the ages of 52 to 64. Sixty percent of those patients were between the ages 65 and 74, and 91% of those between the ages of 75 and 85.

Both the study and the control groups were comparable with regard to various demographic characteristics for patient with extracapsular cataract surgery and phacoemulsification surgery. .

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The result show that the ninety and over ninety percent of the sample with normal fasting blood sugar, serum blood urea and clear ECG.

Data analysis has revealed that the out come of phaco emulsification surgery was better than the out come of extracapsular cataract surgery, through the measurement of Intra ocular pressure(IOP) after one month of surgery ,the IOP was (10-15 mmHg) for the patient phacoemulsification surgery was 81% while 18% for patient with routine extra capsular cataract surgery .For other measurements, like visual acuity and eye error, the effectiveness was observe after one month for patient with phacoemulsification surgery more than the patients with extracapsular cataract surgery because the high percentage 62.3% of patient with phacoemulsification surgery their visual acuity was 6/9-6-6 while the patients extracapsular cataract surgery the high percentage 23.3 was 6/9 and on one 6/6 .

The improvement of eye health status was observed for both groups (extra capsular cataract surgery and phaco emulsification surgery). Patients who participated in the instructional program clearly demonstrated improvement through the measurement of (IOP), best correction and visual acuity before and after one month The result in present study shows statistical significant between study and control group related to Intra ocular pressure (IOP) for both (extracapsular cataract surgery and phacoemulsification surgery). these finding supported by Koziar et al and Daniels(5,6) who mention nurses can give supported and information and nurses teach a variety of learner in various setting.

The instruction program had positive effect on patient with extra capsular cataract surgery and phacoemulsification surgery through assessment of patients complain as define eye redness, eye swelling and eye tears. The effect were clearly observed through the differences between the percentages of all complains between study and control group for both (extracapsular cataract surgery and phacoemulsification surgery). These results consisted with Fayers etal (8) who mention that the better awareness of the safety and rapid rehabilitation after modern cataract surgery is needed in hospitals and primary care centers. Other study (9) stated that the proper perioperative nursing for patients who underwent phacoemulsification of cataract surgery can prevent complications and raise patients' life quality.



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**Recommendation** :- it is recommended to application health education program by Nurses to get highest result after the operation and to do more studies and educate patients before and after doing the operation in the hospital .

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## الخلاصة

**الهدف:** لتحديد أثر البرنامج لتعليمي التمريض لمرضى جراحة الساد الروتينية ,وهي جراحة الساد خارج المحفظة وحراحة استحلاب العدسة

**المنهجية:** دراسة شبه تجريبية أجريت في مستشفى ابن الهيثم التعليمي للعيون من كانون الأول / ديسمبر ٢٠٠٧ -- تموز / يوليه ٢٠٠٨ . عينة احتمالية تتألفت من ١٢٠ مريض من مرضى

جراحة الساد خارج المحفظة وحراحة استحلاب العدسة

وكانت كل منها يتضمن ٦٠ مريضا (٣٠ مريض مجموعة الدراسة) يتلقى برنامج الارشادات التمريضية و (٣٠) من المرضى (مجموعة الضابطة). تم متابعة المجموعتين لمدة شهر واحد بعد الجراحة. وتحدد وضعهم الصحي بقياس (VA ، IOP ، Best correction) ، بالإضافة إلى ملاحظة المضاعفات بعد العملية مثل (احمرار العين وتورم العين وتدمع العين).

**النتائج:** أظهرت النتائج ان هناك فرق معنوي لقياس ضغط العين (I O.P) قبل و بعد العملية.

كانت النسبة ٨١,٦ % من مرضى حراحة استحلاب العدسة كان ضغط العين يتراوح ما بين ( ١٠ - ١٥ ملم.ز) مقارنة بقبل العملية كانت النسبة ٤٥ % أما جراحة الساد خارج المحفظة كانت النسبة ٣٠ % من المرضى تراوح ضغط العين ما بين (١٠ - ١٦ ملم ز) مقارنة بقبل العملية كانت النسبة ٢٧ % وان فحص درجة الرؤيا كان التحسن أفضل بكثير في حراحة استحلاب العدسة مقارنة بجراحة الساد خارج المحفظة

أما اثر البرنامج التعليمي فكان التحسن اكبر لمجموعة الدراسة نسبة الى المجموعة الضابطة لعمليات العين (جراحة الساد خارج المحفظة وحراحة استحلاب العدسة). وكانت هناك فروق ذات دلالة إحصائية في اختبار (T.test) لقياس ضغط العين بعد شهر من العملية مقارنة بقبل العملية. اما المضاعفات بعد العملية ( احمرارا لعين. وتورم العين وتدمع العين ) كانت اقل في مجموعة الدراسة عن المجموعة الضابطة لكلا العمليتين جراحة الساد خارج المحفظة وحراحة استحلاب العدسة.

**التوصيات :-** اوصت الدراسة على ضرورة تطبيق البرنامج التثقيفي من قبل كادر تمريضي للحصول على نتائج افضل بعد العملية / وإجراء دراسات أخرى بشكل أوسع / وتعليم وتنقيف المرضى الداخليين إلى المستشفى لإجراء العملية .