Assessment of pre and postoperative psychiatric comorbidity among patients scheduled for elective cataract surgery in Lagos, Nigeria

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Abstract

Objective: Comorbid psychiatric disorders have been reported to be associated with pre and postoperative periods. Studies on pre and postoperative comorbid psychiatric disorders among ophthalmological patients are scanty in Nigeria and other sub-Saharan countries. This study was aimed at determining pre and postoperative comorbid psychiatric disorders among patients scheduled for elective cataract surgery in Lagos, Nigeria.

Methods: Seventy-seven adult patients scheduled for elective cataract surgery at the ophthalmology clinic of the Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria were recruited and assessed 24 hours pre and 24 hours postoperatively for psychiatric morbidity by asking them to complete the twentieth version of the Self-rating Questionnaire and the Hospital Anxiety and Depression Scale.

Results: The findings of this study showed that only 5.2% of the participants experience preoperative mental illness and anxiety respectively while the 9.1% experienced depression. Post-operative assessments revealed that none of the participants experienced any mental illness or depression apart from 1.3% who experienced anxiety postoperatively. There were no statistically significant findings between the sociodemographic variables and anxiety, depression and mental illness.

Conclusions: The findings of this study indicated that there were comorbid psychiatric disorders among ophthalmological patients scheduled for cataract surgery in Lagos, Nigeria. Therefore, patients who are to undergo surgery should be screened for psychiatric morbidity. Likewise, adequate and appropriate surgical information should be given to patients to reduce associated comorbid psychiatric disorders.

Keywords: Psychiatric morbidity, preoperative, postoperative, anxiety, depression, cataract

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Évaluation de la comorbidité psychiatrique pré et postopératoire chez les patients devant subir une chirurgie de la cataracte élective à Lagos, au Nigeria

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Résumé

Objectif: été rapportée comme étant associée à des périodes pré- et post-opératoires. Les études sur les troubles psychiatriques concomitants pré et postopératoires chez les patients en ophtalmologie sont rares au Nigeria et d'autres pays d'Afrique subsaharienne. Cette étude visait à déterminer les troubles psychiatriques concomitants pré et postopératoires chez les patients devant subir une chirurgie de la cataracte élective à Lagos, au Nigeria.

Méthodes : Soixante-dix-sept patients adultes devant subir une chirurgie de la cataracte élective à la clinique d'ophtalmologie du CHU de l'Université d'État de Lagos, Ikeja, Lagos, Nigeria ont été recrutés et évalués 24 heures avant et 24 heures après l'opération de la morbidité psychiatrique en leur demandant de remplir la version vingtième l'Évaluation propre questionnaire et l'Hospital Anxiety and Depression Scale.

Résultats: Les résultats de cette étude ont montré que seulement 5,2% des participants éprouvent une maladie mentale préopératoire et l'anxiété respectivement, tandis que 9,1% ont connu la dépression. Les évaluations post-opératoires ont révélé qu'aucun des participants a connu une maladie mentale ou de dépression en dehors de 1,3% qui ont connu l'anxiété postopératoire. Il n'y avait pas des résultats statistiquement significatifs entre les variables sociodémographiques et l'anxiété, la dépression et la maladie mentale.

Conclusions: Les résultats de cette étude ont indiqué qu'il y avait des troubles psychiatriques concomitants chez les patients ophtalmologiques réguliers pour la chirurgie de la cataracte à Lagos, au Nigeria. Par conséquent, les patients qui doivent subir une intervention chirurgicale devraient être examinés pour la morbidité psychiatrique. De même, l'information chirurgicale adéquate et appropriée devrait être donnée aux patients pour réduire les troubles psychiatriques concomitants associés.

Mots clés: Psychiatric morbidité, préopératoire, postopératoire, l'anxiété, la dépression, la cataracte

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Introduction

Preoperative and postoperative comorbid psychiatric disorders have been documented to be globally common among individuals scheduled for elective surgical interventions (1-3). Comorbid psychiatric disorders in surgical patients were also reported to be challenging especially in the psychiatric management of these patients (1-4). The relationship between individuals with cataract who were scheduled for surgery and the presence of comorbid psychiatric disorders were postulated to be due to agony of anaesthesia, fear of becoming blind from surgery, blood transfusion, and the persistent worry that nobody will take care of their family in case death from surgery (5-6). However, the reported psychiatric symptoms or disorders that patients programmed for surgery experienced pre and postoperatively include generalized anxiety, depression, phobia, confusion, delirium and panic (1-3,4-6). When patients who were programmed for elective surgery experienced the aforementioned symptoms or disorders and these symptoms were not recognized by the anaesthetist or surgeon, they could further bring about unpleasant states of tension, heightened nervousness, attention-seeking behaviour, insomnia, and general uneasiness (1-5). Previous reports have also indicated that negative psychological and physiological states could also lead to preoperative tachycardia and high blood pressure due to peripheral vaso-constriction (6). The sensory organs too could become very sensitive to stimuli such as touch and pain thereby leading to increased use of anaesthesia (6). Published documents have severally reported significant relationships between preoperative psychopathological states and postoperative pain and recovery (1,5-6). The reported prevalence of psychiatric morbidity among patients scheduled for elective surgery ranges from 1% (7), through 34% (8), to a high rate of 80% (9).

Cataract has been reported to be a leading cause of reversible blindness globally and the incidence and prevalence of cataract and cataract surgery are anticipated to increase as the population ages (1-4). Therefore, gaining an understanding of the psychological effects of cataract surgery is important for maintaining the health and safety of older adults. In the same vein, loss of vision due to ophthalmological disorders such as cataract has been reported to be associated with psychiatric disorders such as depression and anxiety in older adults (1-4). In this light, scientific studies on preoperative and postoperative comorbid psychiatric disorders are therefore necessary to prevent the psychological complications of surgery and also improve the general surgical outcomes (1,3,6). In the same vein, studies on psychiatric aspects of individuals scheduled for surgery are lacking in Nigeria and other sub-Saharan African literature. To our knowledge, and from various manual and electronic searches, no quantitative scientific research has been carried out in Nigeria or any sub-Saharan country that measures the associations or relationships between anxiety, depression and psychiatric morbidity pre and postoperatively among patients scheduled for cataract surgery. This study will therefore make contributions towards understanding comorbid psychiatric disorders among patients scheduled for cataract surgery. The findings of this study will also generate recommendations for future cataract surgical programmes that will prevent or alleviate the burden of psychopathological conditions associated with cataract surgical interventions. This study was therefore aimed at evaluating preoperative and postoperative comorbid psychiatric disorders among ophthalmological patients scheduled for elective cataract surgery at the ophthalmology unit of the Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria.

Materials and Methods

Design and Setting: The study was conducted at the ophthalmology unit of the department of surgery of the Lagos State University Teaching (LASUTH), Ikeja, Lagos, Nigeria between July and December 2015. A convenience sampling that selected every consecutive patient schedule for surgery was used.

Participants: Seventy-seven patients that were prepared for elective cataract surgery were recruited for the study. They were interviewed 24 hours preoperatively and 24 hours postoperatively.

Measures: The recruited participants were asked to complete the twentieth version of the Self-rating Questionnaire (SRQ-20) and the Hospital Anxiety and Depression Scale (HADS). The SRQ-20 (10) is a self-rating questionnaire was used to determine the presence of mental illness. The SRQ-20 consists of twenty yes and no questions with a reference period of the previous thirty days. It has acceptable levels of reliability

and validity in developing countries and is recommended by the World Health Organisation. The cut off score of 8 was used to separate probable non-cases/cases of common mental illnesses. The SRQ-20 has previously been used to measure maternal illness in Nigeria (11). The HADS (12) is a self-report inventory made up of 14 four-point scaled items designed to detect anxiety and depression in general medical outpatients. It has two sub-scales, seven for anxiety (HADS-A) and depression (HADS-D). Anxiety subscale items are 2,4,6,8,11,12 and 14 while the depression subscale items are 1, 3, 5, 7, 9, 10 and 13. For the scoring, each item is scored from 0-3 making the maximum score per scale to be 21. Scores between 0 and 7 are generally regarded as "non-cases," while those above 8 and 10 are regarded as "doubtful cases". Scores between 11 and 21 are regarded as "definite cases." For the purpose of this study, values of 7 and below were "non-cases" while values of 8 and above were defined as "cases" based on the validated cut-off for Nigerians (13). HADS has been reported to perform well in assessing the symptom severity of anxiety disorders and depression in both somatic, psychiatric and primary care patients and in the general population. The reported sensitivity and specificity for both HADS-A and HADS-D of approximately 0.80.

Statistical analysis: Data collected was analyzed using the twenty-fourth version of the IBM Statistical Package for Social Sciences (IBM, SPSS, 24: Ill Chicago). Percentages, means and standard deviation of nominal variables were determined. Categorical variables were compared with Chi square and where appropriate Fisher's exact test. Means of numerical variables were compared using student's t test. Multivariate logistic regression was used to predict variables for anxiety and depression. P value was set at < 0.05.

Ethical considerations: The protocol for the study was approved by the Ethics and Research Committee of the hospital. Written informed consents were taken from all patients that took part in the study.

RESULTS

There were more female participants 49 (63.6%) compared to the males 28 (36.4%). The age bracket 55 to 74 years had the highest frequency 42 (54%) followed by those within the age bracket 75 to 84 years 14 (18.2%). Only 7 (9.1%) of the participants were not formally educated. However, 26 (33.8%) had higher education, followed by those who had secondary education 27 (35.1%) and primary education 17 (22.1%) respectively. Among the participants, only 20 (26.0%) were currently in employment, majority of them 53 (68.7%) were unemployed and 4 (5.2%) were students. More than half 50 (64.9%) of the participants were married, 7 (9.1%) were single and 20 (26%) were either separated, widow or widower as reflected in Table 1. With regards to the preoperative psychiatric assessments, 7 (9.1%) had probable depression, 4 (5.2%) experienced probable anxiety while the SRQ-20 showed that 4 (5.2%) of the participants had mental illness. The post-operative assessment also revealed that none of the participant experienced any depression or mental illness. The findings however, showed that only 1 (1.3%) of the participants manifested with probable anxiety as shown in Table 2. The computed statistics did not show any significant associations preoperatively between the sociodemographic variables and the psychometric variables. With regards to age, results (X^2=3.103, p=0.795), (X^2= 6.331, p=3.75), and (X^2=1.824, p=0.612) did not show any significant statistical relationships with regards to depression, anxiety and mental illness respectively. Similarly, the relationship regarding gender (X^2=0.529, p=0.768), (X^2=2.11, p=0.347), (X^2=0.235, p=0.628) did not show any significant statistical relationships with regards to depression, anxiety and mental illness respectively. Likewise, those regarding educational status, (X^2=5.47, p=0.0485), (X^2=7.74, p=0.255), and (X^2=0.764, p=0.858) did not show any significant statistical relationships with regards to depression, anxiety and mental illness respectively. Similarly, results with regards to marital status (X^2=7.224, p=0.301), (X^2=3.241, p=0.778), and (X^2=0.236, p=0.506) did not show any significant statistical relationships with regards to depression, anxiety and mental illness respectively. However, there was a statistical significant relationship between age and the psychometric variables with (X^2=18.323, p=0.04) postoperatively. Table 3 showed the Pearson's correlation matrix between the psychometric subscale variables which indicated strong relationships among the psychometric variables. The binary logistic regression analysis also did not show any significant statistical associations between the

sociodemographic variables such as age, sex, educational and marital statii and psychopathology.

DISCUSSION

This study was designed to investigate preoperative and postoperative comorbid psychiatric disorders among ophthalmological patients scheduled for cataract surgery at the ophthalmology unit of the department of surgery, Lagos State University Teaching Hospital, Ikeja, Lagos, Nigeria. The findings of this study showed that only 5.2% of the participants experience preoperative mental illness and anxiety respectively while the 9.1% experienced preoperative depression. Post-operative assessment revealed that none of the participant experienced any mental illness or depression apart from 1.3% who experienced anxiety postoperatively. These findings however are lower when compared to findings from other countries. With regards to the findings on preoperative anxiety, high preoperative anxiety rates that ranged from 11% to 80% had been reported in previous studies (2,7-9). The possible reasons for these high rates of preoperative psychopathology include fear of going blind, dying or developing complications from the cataract surgery, fear of blood transfusion or permanent disability after surgery and fear that nobody will take care of their family in case death from surgery (4-5). However, it has been demonstrated scientifically that if comorbid anxiety or depression were recognized and treated pre or postoperatively, they could reduce the risk for postoperative delirium (14). The findings of this study also showed that the level of anxiety dropped from preoperative 5.4% to 1.3% postoperatively. Prior studies have also indicated that the rates of preoperative anxiety usually decreased postoperatively (1,5,9). The reasons for reduction of the levels of anxiety postoperatively are possibly due to successful surgery, reduction of pain and tension from the illness, and possibly from the negative beliefs that they will not wake up from anaesthesia (1,5,9). Studies also showed that postoperative surgical patients who experienced mild anxieties were prepared and reassured adequately preoperatively, while those with high rates of anxiety were observed not to have been briefed adequately about the elective surgery (6,9).

With regards to preoperative depression, our findings showed that 9.1% of our participants experienced probable depression. Although this result could be said to be low compared with other published rates (4,14-16). The possible reasons for high rates of preoperative depression were adduced to be the fear of the unknown, fear of surgery or anesthesia, fear of going blind, dying or unanticipated complications from anesthesia, fear permanent disability from surgery, fear of nobody to take care of the family in case of death, fear of spending longer time in the hospital, fear of the competence of the surgeon, fear of the postoperative nursery care, fear of waking up in a strange environment (1,3-6,14-15). However, published evidence indicated that elderly patients scheduled for elective surgery have preoperative prevalence rates of depression between 15% and 20% (14). These rates were also found to be even higher than those of the general population (14). The possible reason for high prevalence of depression among the elderly who are scheduled for elective surgery could be due to the presence of mild to moderate psychiatric symptoms such as anxiety or depression before surgery (14). Likewise, high degrees of depression could also lead to higher anaesthetic and analgesic requirement, prolonged hospital stay, delayed recovery and increased and postoperative pain (1-3,6,17).

It has therefore been suggested that patients with high preoperative emotional states should be identified early and managed psychologically to improve post-surgery outcomes (1,4-5,7). Studies have also shown that depression has direct biological and physiological effects on pain threshold and wound healing through the influence of neuroendocrine–immune pathways. For this reason, high levels of preoperative depression can also bring about poorer postoperative surgical outcomes (7,14-15). With regards to the reduced postoperative rate of depression, studies have shown that the reduction could be due to elevation in mood associated with successful surgery, improvement of the medical illness and the realization that the patient did not go blind or die from the surgical operation (1,4,7).

Other reasons adduced for high pre and postoperative psychopathological states include the failure of the surgeon or anaesthetist to obtain psychiatric history when clerking surgical patients. Since the prevalence of anxiety and depression are relatively high in the general population, it could therefore be deduced that some percentage of preoperative surgical patients scheduled for elective surgery may also be suffering from various types of common

psychiatric disorders and might have been neuroleptics (1,4,7). Since surgery has been documented to be emotional stressful, it could possibly trigger relapse among the vulnerable ones previously free of psychiatric symptoms (1,4,7). Similarly, Pre and postoperative psychiatric symptoms may occur if appropriate and adequate informed consent was not given empathically. This is because documents have shown that when adequate information about intending surgery were given empathically, they were found to reduce postoperative pain, anxiety, depression and ultimately reduce long hospital stay (1,4,7). It has also been documented that surgeons are less likely to refer surgical patients for psychiatric evaluation or assessments, because they were observed to under recognize psychiatric disorders among their surgical patients (6-8). For this reason, pre and postoperative psychiatric manifestations were observed to be misdiagnosed, underdiagnosed and therefore undertreated psychologically (6-8). Therefore surgeons may not ask for psychiatric assessment of their patients until they became overtly restless and disturbing during pre or postoperative period (6).

Other documented and identified factors that can prolong postoperative recovery include psychoactive and alcohol use, abuse or dependence or withdrawal, presence of personality disorders, preoperative delirium, posttraumatic stress and preoperative excessive pain (3,6,19-20). Frequent alcohol use or abuse were observed to be common among surgical patients, this is because alcohol is used during traumatic period or after traumatic periods (6,19). Postoperative alcohol withdrawal syndrome was reported to lead to seizures, delirium and life-threatening situations (6,19). Postoperative delirium was also found to be common in the elderly, and those with pre-existing cognitive disturbance such as dementia (19-20). In the same vein, posttraumatic stress disorder was reported to be common preoperatively especially after severe injuries such as burns or road traffic accidents when operative course is prolonged and complicated (19-20).

Previous studies have shown that cataract is more common in women than men. Published documents also showed that there were higher rates of cataract extraction in women when compare to men. Nonetheless, research has been directed towards the role of estrogen in cataract formation especially in women. It was also postulated that decrease in estrogen at menopause could lead to an increased risk of cataract in older women (21-22). In order to reduce the comorbid psychiatric disorders associated with the pre and postoperative periods, surgical patients should be given accurate and thorough information about their elective surgery. They should also be taught some anxiety reducing psychological procedures such as breathing and relaxation techniques. If possible they should also receive cognitive behaviour therapy from a clinical psychologist before the elective surgery (23-24). Similarly, there must be friendly and effective doctor-patient, nurse-patient relationships and friendly reassurance visits from the anaesthetist during the preoperative periods (1,6,21-24). The presence of psychological morbidity also depend on the coping skills of the patient in dealing with the stress previously before the elective surgery (3,6,21-24).

The possible explanation why there were low results from this study could be due to the setting of the study which is the Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos which is a relatively new teaching hospital that was well-equip both in medical equipment and personnel. The consultant ophthalmologists who are all females and also senior lecturers at the Lagos State University were also noticed to be friendly with appropriate doctor-patient communication relationships. It could also be deduced that adequate and appropriate informed consents were given in empathic manner preoperatively. Likewise, LASUTH ward nurses were noted for their friendliness while caring for patients on the wards. In the same manner, 68% of the participants had either secondary school or tertiary institution education. Studies have shown that patients that are educated could easily predict the risk of surgery when compared to the less-educated patients (1,3,6). Although this study provided scientific data regarding the preoperative and postoperative psychiatric comorbidity morbidity among ophthalmological patients scheduled for cataract surgery, It also has its limitations which could be addressed in future research. The sample size was relatively small and the study was conducted in one tertiary hospital in Lagos, Nigeria therefore, its results might not be representative of all ophthalmological centres in Nigeria. The study did not measure the patients' degrees of psychopathology prior to admission and this may also have some influence on the results. Nonetheless, future research should focus on

multi-centred longitudinal studies with the use of definitive psychiatric tools pre and postoperatively.

CONCLUSION

This study was designed to investigate preoperative and postoperative comorbid psychiatric disorders among ophthalmological patients scheduled for elective cataract surgery in Lagos, Nigeria. The findings of this study indicated that there were comorbid psychiatric disorders among ophthalmological patients scheduled for cataract surgery in Lagos, Nigeria. Therefore, patients who are to undergo surgery should be screened for psychiatric morbidity with simple psychometric instruments. The patients who are scheduled for elective surgery should also be given simple, appropriate and adequate necessary information about their intending surgery in order to reduce or prevent associated comorbid psychiatric disorders.

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Table 1 Socio-demographic characteristics of the participants

Variables	Frequency (n)	Percent (%)
Age		
15-34	9	11.7
35-54	12	15.6
55-74	42	54.5
> 75	14	18.2
Sex		
Male	28	36.4
Female	49	63.6
Educational Status		
No education	7	9.2
Primary school completed	17	22.3
Secondary school completed	27	35.2
Tertiary school completed	26	33.2
Occupational status		
Student	4	5.3
Unemployed	53	68.7
Employed	20	25.9
Marital Status		
Single	7	9.1
Married	50	64.9
Separated/widow/widower	20	26.0
Tribe		
Yoruba	58	75.3
Igbo	9	11.7
Hausa	5	6.5
Others	5	6.5-

Table 2 Comparison of prevalence of depression, anxiety and mental illness among participants

Variable	Preoperative Frequency Percent	Postoperative Frequency Percent	X^2	p
HADS				
HADS- Depression				
No depression	70 (90.8)	77 (100)	2.533	0.723
Presence of depression	7 (9.1)	--		
HADS- Anxiety				
No anxiety	73 (94.8)	76 (98.7)	6.231	0.988
Presence of anxiety	4 (5.2)	1 (1.3)		
SRQ-20				
No mental Illness	73 (94.8)	77 (100%)	3.230	0.834
Presence of Mental illness	4 (5.2)	--		

Table 3 Pearson's correlation matrix between the three psychometric subscale variables

Variables	Depression	Anxiety	Mental illness
Depression	1	0.852	0.643
Anxiety	0 .852	1	0.798
Mental Illness	0.643	0.798	1

Table 4 Binary logistic regression model predicting depression, anxiety and mental illness among the participants with regards to their sociodemographic details

Variable	OR			Confidence Interval (95%)			Pvalue		
	Depression	Anxiety	SRQ	Depression	Anxiety	SRQ	Depression	Anxiety	SRQ
Age									
15-34	0.000	7.385	2.321	0.000--	0.254-214.697	0.000--	0.999	0.245	1.000
35-54	2.557	5.400	418.59	0.352-18.596	0.680-42.882	0.000--	0.354	0.111	0.999
55-74	0.716	1.588	79200.67	0.177-2.898	0.364-6.933	0.000--	0.640	0.538	0.998
Male	1.183	1.393	0.629	0.356-3.928	0.411-4.717	0.050-7.978	0.784	0.595	0.720
Education									
None	0.840	1.254	0.000	0.111-6.356	0.173-9.069	0.000--	0.866	0.822	0.999
Primary	1.820	2.358	1.314	0.464-7.143	0.572-9.715	0.063-27.260	0.391	0.235	0.860
Secondary	1.262	4.406	2.520	0.354-4.497	1.124-17.264	0.131-48.418	0.720	0.033	0.540
Marital Status									
Single	0.237	0.011	3.082	0.010-5.736	0.000-0.428	0.000--	0.376	0.016	1.000
Married	0.552	0.211	7058.029	0.135-2.259	0.045-0.978	0.000--	0.408	0.047	0.999
Separated	0.947	0.531	3813.196	0.119-7.557	0.064-4.438	0.000--	0.959	0.559	0.998
Occupational Status									
Employed	1.252	0.697	3.075	0.30-5.223	0.156-3.10	0.27-34.87	0.758	0.636	0.365
Student	31505.0	1.377	0.647	0.000--	0.042-45.08	0.000--	0.999	0.857	0.647
Unemployed	2.62.17	2.419	0.903	0.000--	0.137-42.600	0.000--	0.999	0.546	0.903

OR: Odds ratio
P is < 0.05 level