Biopsychosocial and Educational Needs of Patients with Glaucoma

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Abstract

Background: Glaucoma is a leading cause of irreversible visual impairment worldwide. Glaucoma comprises a set of heterogeneous diseases that differ in their causes, risk factors, symptoms, and treatment. The discussion takes the biopsychosocial needs of patients with glaucoma to facilitate connections to holistic patient care. Aim: To assess the biopsychosocial and educational needs of patients with glaucoma. Descriptive exploratory design was utilized to meet the aim of this study. Setting: This study was conducted at the outpatient clinic of Damanhour Ophthalmology Hospital in Al-Bahira, affiliated with the Ministry of Health. Subjects: A convenient sample of all available adult patients with glaucoma (90 patients) who attended the previously mentioned setting for six consecutive months. Tools for data collection: Tool I: Patient's interviewing questionnaire. Tool II: Lawton instrumental activities of Daily Living (IADL). Tool III: Feelings of depression, Anxiety, and Stress Scale-21 Items (DASS-21). Tool IV: Social dysfunction rating scale. Results: (62.2%) of the studied patients had unsatisfactory education about glaucoma. And (77.8%) of the studied patients were independent regarding daily living activities. Also (83.3%) had a mild level of total psychological needs. Additionally, (96.7%) of the studied patients had mild levels of social dysfunction. Conclusion: Most of the studied patients had unsatisfactory educational needs about glaucoma. More than three-quarters of the studied patients were independent regarding daily living activities. At the same time, more than four-fifths of the studied patients had a mild level of total psychological needs. Also, most of the studied patients had a mild level of total social dysfunction. Recommendation: A simplified and comprehensive booklet should be available for patients with glaucoma. Including the most information regarding the disease, therapeutic regime, and self-care, and cover the biopsychosocial needs of the glaucoma patients.

Key wards: Biopsychosocial, Educational Needs, Patients, Glaucoma

Introduction

Glaucoma comprises a set of heterogeneous diseases which differ in their causes, risk factors, symptoms, and treatment. Glaucoma is referred to as a progressive loss of vision due to acquired loss of retinal axons and ganglion cells within the optic nerve with a subsequent development of the peculiar optic nerve head appearance. Such peripheral loss of vision is a unique feature of glaucoma. It occurs silently, leading to irreversible optic neuropathy (*Alqahtani et al.,2021*).

Glaucoma not only causes permanent visual disability, but also has a negative influence on mental and psychological health, which is subjective and individual specific. Individuals with glaucoma tend to develop negative emotions such as anxiety or depression, which are detrimental in the daily functioning and wellbeing. With the number of glaucoma cases projected to rise, the psychosocial aspect of glaucoma is now becoming a global concern for clinicians all over (*Dayal*, 2021).

Risk factor of glaucoma as increased Intraocular Pressure, age everyone over age 40 year is at risk of developing glaucoma; family history, chronic diseases as diabetes, migraine, high blood pressure, conditions use of steroid for prolonged periods of time and previous eye surgery also puts people at risk (*John, 2020*).

Patients with glaucoma are prone for developing psychological disturbances that in tun negatively affect quality of life. Apart from visual disability, psychological effect of diagnosis, treatment related adverse effects and financial issues play an important role in hampering the quality of life. A comprehensive

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approach consisting of patient education, psychological assessment, motivational counseling and vocational therapy should be adopted as a part of glaucoma management protocol. This would enable clinicians to provide customized holistic treatment for each patient, thereby increasing compliance and providing better quality of life (*Dayal*, 2021).

The biopsychosocial approach systematically considers biological, psychological, and social factors and their complex interactions in understanding health, illness, and health care delivery. The biopsychosocial needs presumes that it is important to handle the three together as a growing body of empirical literature suggests that patient perceptions of health and threat of disease, as well as barriers in a patient's social or culture environment, appear to influence the likelihood that a patient will engage in health-promoting or treatment behaviors, such as medication taking, proper diet or nutrition and engaging in physical activity (*Milliron et al., 2021*).

The nurse play a significant role in providing care to glaucoma patients and role begins thoroughly proper evaluation of the patients that lead to reduction of the cancelled surgical operation. Additionally nurse responsible for providing patients with necessary information and meeting their physical, educational, social and psychological needs. also the nurse should emphasize on minimize patient's pain and discomfort, involving the patient and his family in care, preventing complications as possible, and providing complete instructions for glaucoma patients (Gad et al., 2023)

Significant of the study

Glaucoma is a group of diseases that is characterized by increase in the ocular tension that yields damage in the optic nerve and eventually ends up by either partial or total vision loss. Glaucoma, it is one of the major causes for low vision and blindness contributing around 8.5% of total blindness worldwide, and around 6.9% in the Middle East and North African region among the population of 50 years and above. The estimated number of people affected with glaucoma globally in the year 2020 was 76 million inhabitant, that number is subjected to a rapid increase to reach up to 112 million inhabitant by the year 2040 (*Allison et al., 2020*) As regard *Bright Focus Foundation*, (2022) *reported that* there are 80 million people worldwide with glaucoma, and this number is expected to increase to over 111 million by 2040. Studies from Egypt as well as the eastern Mediterranean region show that the prevalence of glaucoma increases more towards the southern governorates for community and ophthalmology reasons that implies the availability and quality of services and the pattern of eye care service utilization. That matter is more affecting women than men (*Othman et al.*, 2021).

Glaucoma is recognize as the "silent thief" because the majority of patients remain unaware of their disease until observe changes and a decline in vision. Glaucoma is a chronic disease that required lifetime care. Uncontrolled glaucoma may lead to blindness. Long term treatment of glaucoma cannot composite for the losses and cannot improve vision. However, treatment can prevent the advancement of the damage and aggravate the patient's condition. The objective of glaucoma treatment is to maintain visual performance (*Hassankhani et al.,2020*). So the current study conducted to assess the biopsychosocial and educational needs of patients with glaucoma.

Subjects and Methods Aim Of This Study

The aim of this study was to assess the biopsychosocial and educational needs of patients with glaucoma through:

- Assess physical needs for patients with glaucoma.
- Assess psychological needs for patients with glaucoma.
- Assess social needs for patients with glaucoma.
- Assess educational needs for patients with glaucoma.

Research Questions

- This study answered the following questions:
- What are the physical needs for patients with glaucoma?
- What are the psychological needs for patients with glaucoma?
 - What are the social needs for patients with glaucoma?

- What are the educational needs for patients with glaucoma?
- This study was portrayed under the four main parts as following:

I. <u>Technical design</u>

The technical design included: research design, research setting, subject and tools of data collection.

Research design

Descriptive exploratory design was utilized to meet the aim of this study.

Research setting

This study was conducted at the outpatient clinic of Damanhour Ophthalmology Hospital in Al- Bahira. A convenient sample of all available adult patients with glaucoma (90 patients) who visited the ophthalmology outpatient clinic, through consecutive six months duration of data collection.

Tools for data collection: the following tools were used for data collection: -

Tool I: Patient's interviewing questionnaire

It was developed by the investigator in a simple Arabic language based on the extensive review of relevant and recent literature. to assess educational needs of patients with glaucoma (*Komolafe et al., 2013; Al-Zubi et al., M. 2017; Hoffmeyer-Zlotnik et al., 2018; Toledano-Toledano et al., 2019; Alqahtani et al., et al.2021*).

It was consists of three parts: -

- The first part was concerned with sociodemographic characteristics of the studied patients as the following (age, gender, marital status, level of education, occupation, residence, treatment system, income, house condition, light in the housing and primary caregiver in the home and daily habits).
- The second Part was concerned with patients' medical history data, and used to assess patients' present medical history (affected eye, how long the symptoms started and glaucoma symptoms), patients' past medical history (including other chronic diseases, previous eye surgeries, previous eye problems), and Family medical history.
- The third Part was concerned with educational needs assessment interview questionnaire and used to assess patients' educational needs about glaucoma as definition of glaucoma, sign and symptom,

risk factors, treatment, complication and prevention of glaucoma; it was consisted of 6 parts of 22 questions .

Scoring system:

This tool consisted of 22 questions, which are scored as (one) for a correct answer and (zero) for an incorrect answer. The scores of each statement were summed up giving a total score; the total score of all patients' educational needs was calculated and categorized as the following:

If total score <70% (<15grade) was considered unsatisfactory level of educational needs

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f total score \geq 70% (\geq 15grade) was and consider satisfactory level of educational needs

Tool II: Lawton instrumental activities of Daily Living:

It was adapted from (Lawton& Brody 1969: Lawtonet al., 2003; Terheyden, Jan Henrik, et al.2022), used to assess Patient's physical ability to perform activities of Daily Living. It was translated to simple Arabic language and it was composed of nine domains as the following: A recreational activity (use telephone, watch Shopping activities. television). Food preparation, Household tasks (housekeeping &laundry), Personal hygiene, Job tasks, Mode of transportation (movement inside /outside home) Responsibility for own medications and A financial affair.

Scoring system:

Lawton instrumental activities of Daily Living included twelve item and three responses for each item ranged from (zero to two) classified as the following: (0) = Dependent. (1) = Partial independent. (2) = Independent

The total score of Lawton was (zero to twenty four); the lower score is the higher patients' physical needs (dependent), while higher score indicate the lower patients' physical needs (independent). The patients' score was calculated and classified as the following:

- The score from (≤60%) were considered dependent and had higher physical needs.
- The score from (>60 % < 80%) were considered partial dependent.
- The score from (≥80%) were considered independent and had lower physical needs.

Tool III: Feelings of depression, Anxiety and Stress Scale-21 Items: It is adopted from (*henry&Crawford, 2005*) and it used to assess feelings of depression, Anxiety and Stress for patients with glaucoma. It was translated to simple Arabic language and it was composed of twenty one statements.

Scoring system:

Depression, Anxiety and Stress scale (DASS) included twenty one statements, each statement had four response ranged from (zero to three) classified as the following: 0 = Never apply to me. 1= Sometimes apply to me.2 = Often apply to me. 3 = Always applied to me.

The total score of Depression, Anxiety and Stress scale was (zero to sixty three). The higher score is the higher psychological needs. The patients' total score was calculated and classified as following: The score (\geq 44) = sever need. The score (38-43) = moderate needs. The score (0-37) = mild needs

Tool IV: Social dysfunction rating scale:

It was adopted from (*Linn, et al., 1969*). It was written in Arabic language used to assess social needs of patients with glaucoma. it was included twenty one items, which measures the negative aspect of an individual social adjustment, this scale was divided into three subscales:

- The self- perception system
- The interpersonal relationship system

• The social Performance system Scoring system:

The scale was composed of twenty one items each had four responses, ranged from (zero to three) as following: 0 = Never. 1 = Sometimes.2 = Often. 3 = Always.

The total score of instrument was ranged from (0-63) the higher score is the higher social needs. The patient total score was calculated and classified as the following:

- The score (≥ 44) = Sever social **dysfunction**
- The score (38-43) = Moderate social dysfunction

• The score (0-37) = Mild social dysfunction

II-Operational Design: -

It included preparatory phase, validity and reliability of developed tool, pilot study and fieldwork.

A) The preparatory Phase:

It included reviewing of related recent national and international literatures and theoretical knowledge of various aspects of this issue in order to develop the data collection tools by using books, article, magazines and internet resources.

B) Validity and reliability: Testing validity

Validity was conducted to test the tool for appropriateness, relevance, comprehensiveness, understanding. applicability, easiness for administration, and clearance of tool (patient's questionnaire interviewing and patient's biopsycosocial need questionnaire) through a jury of five experts, of the medical-surgical nursing department staff at the faculty of nursing, Ain Shams University. some questions were omitted, some were added and other were rephrased in educational needs and daily living activity questionnaire and then the final form was developed in biopsychosocial and educational needs scales which used for data collection.

Reliability

the suitable reliability test was carried out to test reliability through measuring internal consistency by Cronbach's alpha test, the reliability for study tools as follow:

- Patients' educational needs was (0.620)
- Lawton instrumental activities of Daily Living was (0. 717)
- Feelings of depression, Anxiety and Stress was (0.913)
- Social Dysfunction Scale was (0.865)

C) Pilot Study: -

A pilot study was carried out on 10% (9 patients) of the patients under study to evaluate the applicability, clarity, efficiency and time needed to fill in the tools. The necessary modifications were done according to the result of the pilot study. some questions were omitted, some were added and other were rephrased and then the final form was developed in biopsychosocial and educational needs scales which used for data collection. The patients recruited in the pilot study were excluded from the current study subjects.

D) Field Work:

The data collection was carried out from the beginning of September 2022 to the end of February 2023 covering six months. The investigator was available at glaucoma clinic of Damanhour Ophthalmology hospital (2) days per

week from 9 am: 3 pm to collect data from patient. At the beginning of the interview the investigator greeted and introduced herself to each patient. The investigator was explained the purpose and aim of study briefly to each patient.

- Oral consent was obtained from patients after explaining the aims of the study.
- Filling the tool took 35-45 minutes for every patient distributed

Ethical considerations: -

An ethical approval from directors of Ain shams Hospital University was taken then, A written approval to conduct the study was obtained from the scientific ethical and research committee of the Faculty of Nursing Ain-Shams University before starting the study.

The investigator clarified the aim of the study to all patients included in the study, the investigator was assuring maintaining privacy and confidentiality of subjects data and he informed the patients that they are allowed to choose to participate or not in the study and they have the right to withdraw from the study at any time.

Oral consent was obtained from all the study participants.

III- Administrative Design

An official letters were issued from the Faculty of Nursing at Ain-Shams University explaining the aim of the study to obtain permission for collection of data; this letters were submitted to the directors of Damanhour Ophthalmology hospital

IV- Statistical Design

The data was collected, tabulated and analyzed by using statistical package for the social science (SPSS) version 26. Data were presented as number, percentage means and standard deviation.

Two types of statistics were done:

1.

escriptive statistics [e.g. percentage(%), mean(x), and standard deviation(SD)

2.

nalytic statistics: which include the following tests:

 Chi-square test (χ2): was used to study association between qualitative variable.

- Pearson correlation: was used to show relation between two variables.
- P-value considered
- Highly statistical significant (HS) difference (P-value <0.01).
- Statistical significant (S) difference (P-value <0.05).</p>
- No statistical significant (NS) difference (P-value > 0.05).

Results

Table (1): Clarified that (52.3%) of the studied patients had an age group from 30-50 years, with mean age was (47.86 ± 19.5) , (55.6%) of them were male and (72.2%) were Single. In relation to educational level it was found that (61.1%) Illiterate, while (46.7%) don't work, and (82.2%) of them lived at rural area. As regarding treatment cost, it was found (90%) of the studied patients had health insurance, (60%) of them reported that their monthly income not enough to treatment cost. (78.9%) of the studied patients lived at ground floor with (55.6%) of them hadn't enough light at home and (71.1%) of them taking primary caregiver from one of the household.

Figure (1): Clarified that (62.2%) of the studied patients had Unsatisfactory educational n needs and (37.8%) had a satisfactory educational needs about glaucoma

Table (2): Demonstrated that (77.8%) of the studied patients were independent, (16.6%) of them were partial dependent and only (5.6%) of them were dependent regarding daily living activities.

 Table (3): Reported that (97.8%) of the studied patients had a mild level of stress, and 2.2% of them had a moderate level of stress.

Table (4): Showed that (73.3%) of the studied patients had a mild level of anxiety, (20%) of them had a moderate level of anxiety, and only (6.7%) of them had a sever level of anxiety.

Table (5): Clarified that (77.8%) of the studied patients had a mild level of depression, (21.1%) of them had a moderate level of depression, and only (1.1%) of them had a sever level of depression

Table (6:) Clarified that (96.7%) of the studied patients had a mild level of social dysfunction, and only (3.3%) had a moderate level of social dysfunction.

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Socio-demographic characteristics	N	%
Age/ years		
18 - >30	13	14.4
30 - >50	47	52.3
\geq 50	30	33.3
Mean ± SD	47.86±1	19.52
Gender:		
Male	50	55.6
Female	40	44.4
Marital status:		
Married	25	27.8
Single	65	72.2
Education level:		
Illiterate	55	61.1
Primary education	24	26.7
Secondary education	7	7.8
University education	4	4.4
Occupation:		
Office work	9	10.0
Manual work	39	43.3
Don't work	42	46.7
Residence:		1
Rural area	74	82.2
City	16	17.8
Treatment system		
Health insurance	81	90.0
Self-payment	9	10.0
Income sufficient for treatment cost:		I
Yes	36	40.0
No	54	60.0
Housing status (floor):		
Ground	71	78.9
Upper	19	21.1
Light in the housing:		
Enough	40	44.4
Not enough	50	55.6
primary caregiver at the home		
One of the household	64	71.1
Other primary caregiver	8	8.9
None	18	20

Table (1): Frequency distribution of Socio-demographic characteristics for the studied patients (n = 90):



Figure (1): Distribution of the studied patients regarding to total educational needs score about glaucoma (n=90):

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Table (2): Frequency distribution of the studied patients' ability regarding performs daily living activities (n=90):

Ability to perform daily living	N	%
activities		
Independent	70	77.8
Partial dependent	15	16.6
Dependent	5	5.6

 Table (3): Frequency and distribution of the studied patients regarding to stress level (n=90):

Stress level	N	%			
Mild	88	97.8			
Moderate	2	2 2.2			
Severe	0	0.0			
Table (4): Frequency distribution of the studied patients regarding to anxiety level (n=90):					
Anxiety level	Ν		%		
Mild	66	73.3			
Moderate	18		20.0		
Severe	6	6.7			
Table (5): Frequency distribution of the studied patients regarding to depression level (n=90):					
Depression level	N		%		
Mild	70 77.8		77.8		
Moderate	19	9 21.1			
Severe	1	1.1			
Table (6): Frequency distribution of the studied patients regarding to social dysfunction (n=90):					
Social dysfunction	n	Ν	%		
Mild level of social dysfunction		87	96.7		
Moderate level of social dysfunction		3	3.3		
Severe level of social dysfunction		0	0.0		

Discussion

Glaucoma is an ophthalmic disease that can severely affect patients' visual health, limiting their ability to live well, impacting their functionality, productivity, and overall quality of life. Glaucoma is also a chronic disease that progresses asymptomatically over an extended period, requiring medical treatment, contributing significantly to healthcare costs (*McLaughlin et al., 2023*). So the aim of this study is to assess the biopsychosocial and educational needs of patients with glaucoma

As regard to age of the studied patients, the current study result clarified that more than half of the studied patients had an age group from 30-50 years, with mean age was (47.86 ± 19.5) . The percentage of patients with glaucoma increases dramatically with age. these results was contrasted with *Maiouak et al.* (2023) who applied study to measure the quality of life in

Moroccan patients with glaucoma and determine associated factors and found that less than two thirds of the studied patients had an age > 60 years, with mean age was (42.20 ± 16.39)

Regarding to gender of the studied patients, the current study result found that more than half of the studied patients were male and less than three quarters of them were single. This result was supported with *Hua et al. (2023)* in a qualitative study in China entitled "Self-management challenges and support needs among patients with primary glaucoma" and found that : Half of them were males while less than three quarters of them were married.

Moreover, the current study result showed that less than two thirds of the studied patients were illiterate. These findings in the same side with *Priyadarshini & Chander (2020)* who applied a study in India entitled "To study glaucoma awareness, knowledge, attitude towards screening in patients of western Uttar Pradesh" and reported that less about two thirds of the studied patients were illiterate.

Regarding to residence of the studied patients, the current study result found that most of the studied patients lived at rural area. This result was contrasted with *Muhsen et al. (2023)* in a cross-sectional survey in Jordan entitled "Predictors of glaucoma knowledge and its risk factors among Jordanian patients with primary open angle glaucoma at a tertiary teaching hospital" and showed that two thirds of the studied patients lived at urban areas.

Moreover, the current study result showed that the majority of the studied patients had health insurance, less than two thirds of them reported that their monthly income not enough to treatment cost. And more than three quarters of the studied patients lived at ground floor, also more than half of them hadn't enough light at home and less than three quarters of them taking primary caregiver from one of the household. This may due to most patients not worked and high cost of living and insufficient income.

The current study result supported with *Abu Hassan et al. (2020)* in a study in Jordan entitled "Awareness and knowledge about glaucoma among patients attending outpatient clinics of Jordan University Hospital" and showed that highly percentage of the studied patients had monthly income not enough.. While this result disagreed with *Fathy et al. (2021)* conducted study in Egypt to assess the knowledge, self-care practices and expectations of care among patients with glaucoma and found that less than two thirds of the studied patients had enough monthly income.

As regards the current daily habits of the studied patients, the present study result clarified that most studied patients were nonsmokers and did not use lenses. This result may be due to knowing about the dangerous effects of smoking on deteriorating health and insufficient monthly income. These findings disagreed with Krishnan (2023), who applied a study in India to assess awareness and Knowledge about glaucoma among the cases attending the Ophthalmology outpatient department in a Tertiary care center, who showed that more than two-fifths of the studied patients were smokers.

Regarding to total knowledge score about glaucoma, the current study result clarified that less than two thirds of the studied patients had unsatisfactory knowledge and more than one third of them had a satisfactory knowledge about glaucoma. From the investigator point of view this result may be due to highly percentage of the studied patients were illiterate. These result answered the first research question

This result in the same side with Yenegeta et al. (2020) in a study entitled "Knowledge of glaucoma and associated factors among adults in Gish Abay town, Northwest Ethiopia" and low percentage of the studied subjects had good knowledge about glaucoma. While this result was contrasted with Anbesse & Gessesse (2022) who applied a study in Ethiopia entitled "Knowledge and practice towards glaucoma among glaucoma patients at the University of Gondar Tertiary Eye Care and Training Center" who found that less than half of them had good knowledge about glaucoma. Also Becerril-Ledezma et al. (2022) who applied a study in Mexico City entitled "Knowledge and awareness of glaucoma in Mexican patients with and without glaucoma diagnosis in an Ophthalmology Referral Center," which showed that more than two-thirds of them had moderate knowledge, more than one-third of them had poor knowledge about glaucoma.

Concerning the total ability to perform activities of daily living of the studied patients, the current study result demonstrated that more than three quarters of the studied patients were independent, more than one tenth of them were partial dependent and minority of them were dependent regarding daily living activities. This result may be because less than three-quarters of the studied patients had one eye affected. These results answered the second research question

These results were on the opposite side of **Ren** et al. (2023), who applied a cross-sectional study in China entitled "Influencing factors of fear of falling among glaucoma patients in west China, "which showed that more than two-fifths of the studied patients were fully independent while more than half of them were mild dependence or less regarding activities of daily living.

As regards feelings of stress among the studied patients, the current study result reported that more than three-quarters of them had a mild level of stress, and a minority of them had a moderate level of stress. These may be due to fear of other eye affection or becoming blind.

The current study result was contrasted with *Ji et al.* (2022), who applied a prospective survey study entitled "Perceived stress levels and associated factors in adult patients with primary open-angle glaucoma," which showed that less than half of the studied patients had a high-stress level.

Regarding anxiety levels among the studied patients, the current study result showed that less than three-quarters of the studied patients had a mild level of anxiety, one-fifth of them had a moderate level of anxiety, and a minority had a severe level of anxiety.

This result may be because three-quarters of the studied patients were single, while marital status is essential, as a life partner is likely to be the primary caregiver. Patients with living spouses are likely to have better emotional and social support.

These results were supported by *Ajith et al.* (2022), who applied a study entitled "Cross-sectional study of depression, anxiety and quality of life in glaucoma patients at a tertiary center in North Kerala" who reported that a minority of the studied patients had to severe anxiety while three-quarters of the studied patients had no anxiety.

Regarding depression levels among glaucoma patients, the current study result clarified that less than a quarter of the studied patients had a mild level of depression, slightly more than one-fifth of them had a moderate level of depression, and a low percentage had a severe level of depression. From the investigator's point of view, this result may be due to illiterate glaucoma patients not knowing how to cope and deal with psychological disorders related to glaucoma and disease progress.

The present study result was in accordance with Zhou et al. (2022) in a cross-sectional study in China entitled "Mental health and selfmanagement in glaucoma patients during the COVID-19 pandemic" and found that highly percentage studied patients of the had a mild level of depression. Moreover, Okudo et al. (2021) applied a study entitled "A comparative analysis of anxiety and depression among glaucoma and cataract patients in Southwest Nigeria," which showed that less than one-tenth of the studied patients had a severe level of depression while more than onetenth of them had mild level of depression.

Regarding total psychological needs, the present study reported that more than four-fifths of the studied patients had a mild level of total psychological needs. These results answered the third research questions.

Concerning total social dysfunction among glaucoma patients, the current study result clarified that most studied patients had a mild level of social dysfunction. In contrast, a minority of them had a moderate level of social dysfunction. These findings may be due to most studied patients living in rural areas, characterized by strong social bonds that decrease social dysfunction. These results answered the fourth research question.

The current study result contrasted with *Wang et al.* (2019) in a study in China entitled "Resilience mediates the relationship between social support and quality of life in patients with primary glaucoma" and reported that patients with glaucoma had poor social dysfunction and had low quality of life. While contrasted with *Mushtaha & Eljedi* (2020) who applied study entitled "Quality of life among patients with glaucoma in Gaza Governorates" and showed that less than three quarters of the studied patients had score of the social function domain **Conclusion**

In the light of the current study findings, it can be concluded that:

Less than two-thirds of the studied patients had unsatisfactory knowledge. More than threequarters of the studied patients were independent. Moreover, more than four-fifths had a mild level of total psychological needs. Also, more than half of the studied patients had a mild level of total social dysfunction.

Recommendations

Based on the current study finding the following recommendations were proposed:

- Health education for patients with glaucoma should be started from the first day of diagnosis. Also, awareness of high-risk groups and the family to know the early symptoms of glaucoma.
- A simplified, illustrated, and comprehensive booklet should be available for glaucoma patients, including the most information regarding disease, treatment, and self-care.

- Multidisciplinary team approach is necessary for managing glaucoma patients to meet the studied biopsychosocial and educational needs.
- Further studies are recommended to study the effect of designing& implementing educational program for nurses based on the studied biopsychosocial and educational needs assessment for glaucoma patients to improve nurses' performance and consequently enhance the quality of life for such group of patients.
- Replication of this study on a large sample of patients in different hospitals is recommended to generalize the study results.

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