Comparative analysis of life satisfaction of patients before and after diagnosis of eye pathologies

ABSTRACT

Aim: To compare the life satisfaction of patients before and after diagnosis of eye pathologies

Methods: This was a prospective cross-sectional survey amongst eye patients at Guinness Eye Centre, Onitsha, South East, Nigeria using pretested interviewer-administered structured questionnaire. Data collected included the socio -demographicsand the life satisfaction scores of the patients before, and 4-6 weeks after diagnosis.

Results: A total of 137 patients in the age range 18 to 88years, and with disease duration ranging from 1 to 23 years were enrolled.There was equal male to female ratio with mean age of 54.6 years.There wassignificant decreased mean life satisfaction scores from 25.9 before diagnosis to 24.3 after diagnosis among participants with eye pathology.

Conclusion: The diagnosis of a vision threatening eye pathology is associated with lowering of life satisfaction hence the need to incorporate psychotherapy in the long term management of these patients.

KEYWORDS: life satisfaction, eye, diagnosis, vision

INTRODUCTION

The ultimate goal which every human strives to achieve throughout their life is personal life satisfaction. It is the central aspect of human welfare. Life satisfaction is subjective but measurable. It is defined as the extent to which a person finds life rich, meaningful, full, or of high quality [1]. According to Ed Diener it refers to an individual's personal judgement of

wellbeing and quality of life based on his or her own chosen criteria [2]. These are variables that an individual finds personally important in their own life.

The importance of life satisfaction is underscored by the finding that when people are satisfied with life, they will feel less lonely and hopeless. As per research studies, a 46% reduction in the risk of depression has been witnessed by people with high life satisfaction [3]. Another study found that people who self-reported poor mental health had lower life satisfaction [4].Individuals who are satisfied with life have shown better post-operative surgical outcomes as a result of enhanced immune system [5]. A 26% reduced risk of mortality was found amongst people with high life satisfaction. This is not surprising given the positive correlations between life satisfaction and overall health[3].

Amongst the factors listed by experts: self-assessed level of health, family life, income and leisure time are the most important predictors of life satisfaction [6, 7]. For both genders income and leisure time are the weakest predictors of overall life satisfaction. Work satisfaction is more important for men than for women, whereas partner's happiness is more valued by female respondents [7]. Life satisfaction has shown robust associations with health outcomes (e.g., lower mortality, lower risk of hospitalization and chronic diseases) and health behaviors (e.g., not smoking, physical exercise, and fat intake restriction) [8-11].Moreover, the relationship between an individual's life satisfaction and health status varies with different structural circumstances. Life satisfaction increases in countries with lower income inequality and within a stronger welfare state [12,13]. A more equal distribution of economic resources also weakens the tie between wealth and self-reported health [14]. The strength of the satisfaction–health association varies according to the degree to which economic resources have been distributed to public health spending; in countries that spend less on healthcare services, life satisfaction depends to a greater extent on one's health status, compared to countries with more healthcare spending [15].

Most individuals place the highest premium on their eye health resulting from the fear of visual impairment or blindness. Ocular health has a unique place in the overall health and functioning of an individual. Reasonably, most people dread having eye problems in their lifetime let alone getting blind. A survey of 2044 Americans showed that Loss of sight was rated the worst health affliction for an individualand 87.5% believed that for a person to be said to be in overall good health, good vision must be present.Blindness was rated worse than, or equal to other serious losses like loss of limb, memory, speech and hearing. The participants' major reason was degradation of quality of life [life satisfaction] associated with loss of vision [16]. Despite this, the prevalence of visual impairment and blindness is still the least in the developed world as compared to third world countries where it is four times higher [17].

Typically, in Sub Sahara African countries such as Nigeria, where there is enormous burden of visual impairment and blindness resulting from the high occurrence of potential blindness – causing eye diseases there is greater need to study the magnitude of any change in the life satisfaction of the populace upon diagnosis [18]. Have they innately developed adaptive mindset? The fact that they chronically survive throughout their lives with these eye pathologies with minimal access to modern healthcaremay translate to shifted self–chosen criteria of life satisfaction. The mere act of diagnosis and subsequently informing them of their possibly long-

standing eye disease may or may not impact their chosen interpretation of a satisfied life. Therefore, this study done in a resource-poor country amongst patients with various eye pathologies aims at comparing their life satisfaction before and after diagnosis in order to recommend policy measures to optimally manage the mental and emotional balance of the patients.

METHODOLOGY

This is a cross-sectional descriptive study in which patients newly diagnosed with eye pathologies were recruited consecutively at the Guinness Eye Centre, Onitsha, Anambra State, South east Nigeria. The hospital is a tertiary eye facility serving all the five states in the South east geo-political zone in Nigeria. It holds clinics for anterior segment, vitreo-retina, glaucoma, paediatrics, and oculo-plastics, among other subspecialties services.

A sample size of participants with visual impairment was determined using the formula

$N = z^2pq/d^2$

Where,

N = Minimum sample size.

Z = Standard normal deviate, usually set at 1.96 corresponding to 95% confidence interval.

p = Assumed prevalence taken from the estimated prevalence of visual impairment (mild, moderate and severe) which is 10.1% (0.101) [18].

q = 1.0 − p (1.0 − 0.101) = 0.899.

d = Precision level acceptable = 5% (0.05).

This gives a minimum sample size of approximately 140.

On each clinic day all adult (18 years and above) new patients were serially selected from the new patients' attendance register compiled by the records unit. Informed verbal consent was then obtained from each respondent by the researchers. Oral informed consent was considered since the data was collected by using an interview administered structured questionnaire and also there was no invasive examination procedure conducted on the patients for the sake of this research. Patient information was obtained and confidentiality was maintained. Data obtained included the socio-demographics, and the life satisfaction score of each patient using the tool of SWLS (Satisfaction With Life Scale). See attached appendix.For each participant the interview was conducted twice: on the first day of presentation before definite diagnosis by an ophthalmologist was made, and on a follow-up visit four to six weeks later.

All new patients met the inclusion criteria. However, patients less than 18years and those who did not give consent were excluded.After the first interview only patients whose diagnoses were vision threatening were included and enrolled for the follow-up (second) interview. Three of these never made it for follow-up.

Data was analyzed using the Statistical Package for the Social Science version 22 (IBM Software Group, Chicago, IL, USA). Means of continuous variables was compared using Student's *t*-tests. Statistical significance was set at $P < 0.05$ for all analyses

RESULT

One hundred and thirty seven patients with ocular pathologies were interviewed. The age range was from 18 to 88years while the duration of illness ranged from 1 to 23years with a mean of 4.32years. The mean age was 54.6years (table 1). There was equal male to female ratio.

Table 1: Mean age and duration of illness of the patients

		mean	SD	1	2
1	Age	54.61	16.47	1	
2	Gender	-	-	-	1
3	Duration of illness	4.32	4.22		

The mean, standard deviation and standard error mean of the life satisfaction of the patients before (TSWLSB) and after diagnosis (TSWLS) are shown. The level of life satisfaction decreased from 25.86 before diagnosis of eye pathology to 24.26 after diagnosis as shown in table 2.

Table 2: Paired Samples Descriptive Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	TSWLSB	25.8686	137	5.37672	.45936
	TSWLS	24.2555	137	5.85113	.49990

Table 3 shows the paired samples correlation of patients' life satisfactions before and after diagnosis of eye disease.

Table 3: Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	TSWLSB & TSWLS	137	0.466	0.000

Table 4 shows a paired sample t test comparison of the TSWLSB and TSWLS.

Table 4: Paired Samples Test

	Paired Differences	t	df	Sig. (2-tailed)

		Mean	Std. Deviation	Std. Error Mean	95% C.I of the Difference				
					Lower	Upper			
Pair 1	TSWLSB - TSWLS	1.61314	5.81358	0.49669	0.63091	2.59537	3.248	136	0.001

The result of the paired T-test showed that the participant's level of life satisfaction decreased from before eye pathology diagnosis (Mean=25.87, SD =5.3) to after eye pathology diagnosis (Mean= 24.26, SD= 5.8); t-value = 3.25, P= .001, d=.28.

By implication, there was a significiant difference between life satisfaction before and after diagnosis among participants living with eye pathology.

DISCUSSION

On the average the participants were of middle age (54.6years) which increases the relevance of the impact of any significant change of life satisfaction on a productive workforce. This is also a period many of the participants would have started showing the earliest signs of certain potential vision -threatening diseases such as glaucoma and diabetic retinopathy. The exclusion of adolescent age group is justified by the finding that life satisfaction significantly decreased during this period as found by a German study [19]. The authors noted that this reduction was across all domains of life satisfaction including general and health-related domains. Similar evidence was reported in a review by Neugebauer and co-workers among high school students during COVID-19 pandemic; they found a decline in life satisfaction in winter 2020/2021 (Cohen's d = -0.40) that was approximately three times stronger than that in the general population and persisted until winter 2021/2022 [20].

The study found that the participant's level of life satisfaction decreased from before eye pathology diagnosis (Mean=25.87, SD =5.3) to after eye pathology diagnosis (Mean= 24.26, SD= 5.8); t-value = 3.25, P= .001, d=.28.This finding tallies with that from a comparative analysis of a large WHO study done in Ghana amongst older adults by Tetteh et al who reported lower life satisfaction in the visually impaired when compared with the non- visually impaired[21]. Although, a community-based study while the present study was hospital based,

the socio-economic and cultural variables in Ghana and the present study area are similar. Both studies had mean ages above 50years: the choice of study participants was based on the report by WHO that majority of people with vision impairment are over the age of 50 years[22].Additionally, according to the report, among VI (visually impaired) older adults, lower life satisfaction has been identified to be more prevalent among those depressed as compared with those who were not depressed. The severity of VI also determines the extent to which life satisfaction is affected. An older adult with VI reports increases in life dissatisfaction with increased severity of VI [21]. Furthermore, Brunes and Heir in Oslo reported that development of depression in the patients with visual impairment over time subsequently resulted in lowered life satisfaction [23].

In Nigeria, all known life satisfaction or QoL studies in relation to vision reported similar findings as this work. In Owerri, a very close city to the study area and same in almost all ramifications, a hospital-based study on the impact of VI and blindness on QoL of patients found a 19.1% reduction in QoL with worsening VI. This was also affected by age, duration of VI, and history of poor near vision [24]. The authors also reported that the mean QOL score decreased as the severity of illness increased, being highest in mild VI and worst among the blind, and this was statistically significant ($F = 11.42$, $P < 0.0001$). Although the index study did not categorize the various disease entities in relation to magnitude of decrease in life satisfaction, these authors documented that participants who were visually impaired from uncorrected refractive error had better QoL than those with cataract and glaucoma in that order [24].There were other studies in Lagos and Ibadan, Nigeria which reported similar findings as the index study [25, 26].

Furthermore, contrary to the finding of this study, in a non-ocular related work, an assessment of the satisfaction with life in a group of psoriasis patients in Poland revealed a surprise when the duration of the disease was considered. A longer duration of the disease was associated with a higher satisfaction with life. This phenomenon was most evident in women. In contrast, in men the disease lasting longer than 40 years was reflected by a marked decrease in the satisfaction levels, despite men having an increased satisfaction with life proportionally to the disease duration up to this cut off value [27]. Some patients who experience disease remission following improved modern care over time may expectedly gain in their satisfaction with life. No vision-related life satisfaction study has replicated this finding.

CONCLUSION

The prevalence of eye pathologies, hence visual impairment is known to increase with age. Consequently, increasing VI results in diminishing life satisfaction. Therefore, eye care-givers must be conscious of the psychosocial complications of eye pathologies especially amongst the elderly. Hence, in addition to early screening, diagnosis and management of eye pathology patients, early psychotherapy should be planned particularly for patients with chronic vision-threatening conditions. For holistic patient management, eye care-givers may be trained on detection of early signs of low life satisfaction in ocular patients for urgent referral.

CONSENT

The authors report no conflict of interest concerning this work.

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APPENDIX

QUESTIONNAIRE

General information

What is your gender Male----- or female------

What is your age now------

What is your Marital status Married-----or single------

What is your highest educational qualification

Primary school----

Secondary school ---

Higher institution----

Which eye condition were you diagnosed tick as appropriate.

1.

2.

3.

4.

5.

6.

How long have you been diagnosed with this condition -------

What is your present employment status: tick as appropriate

Student----------

Employed----------

Unemployed—

PART B

SWLS Before Diagnosis

Below are five statements with which you agree or disagree **Before The diagnosis of the present eye condition**. Using the 1 to 7 scale below indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neither agree nor disagree

5 = slightly agree

6 = agree

7 = strongly agree

1. **----------In most ways my life was close to my ideal or what I wanted**
2. **----------The conditions of my life were excellent**
3. **----------I was satisfied with my life**
4. **----------I have the important things I wanted in life**
5. **----------If I could live my life over, I would change almost nothing**

PART B

SWLS After Diagnosis

Below are five statements with which you agree or disagree **After The diagnosis of the present eye condition**. Using the 1 to 7 scale below indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding. The 7-point scale is as follows

1 = strongly disagree

2 = disagree

3 = slightly disagree

4 = neither agree nor disagree

5 = slightly agree

6 = agree

7 = strongly agree

1. ----------In most ways my life is close to my ideal or what I wanted

2. ----------The conditions of my life are excellent

3. ----------I am satisfied with my life

4. ----------So far I have gotten the important things I wanted in life

5. ----------If I could live my life over, I would change almost nothing