

# Duration of Illness and Resilience as Determinants of Life Satisfaction amongst Patients with Eye Pathologies

## ABSTRACT

**Aim:** To determine how duration of disease and resilience as determinants correlate with life satisfaction amongst eye pathology patients

**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. Information such as the socio-demographics, duration of disease and questions aimed at assessing the resilience and life satisfaction scores of these patients were collected.

**Results:** A total of 137 patients in the age range 15 to 88years, and with disease duration ranging from 1 to 23 years were enrolled. Gender and age of the participants were controlled as covariate. There was significant correlation between duration of eye pathology diagnosis and life satisfaction  $r = -0.22$ ,  $p = 0.01$ , and resilience and life satisfaction  $r = 0.30$ ,  $p = 0.01$ . In other words as the duration of eye pathology diagnosis increases, the more likely that the patient will report lesser life satisfaction. In contrast, patients who report higher resilience were more likely to also report higher life satisfaction.

**Conclusion:** Life satisfaction amongst eye pathology patients is significantly determined by duration of eye disease and resilience.

*Keywords: Eye pathology; eye disease; life satisfaction; quality of life.*

## 1. INTRODUCTION

“Life Satisfaction is the central aspect of human welfare. It is an ultimate goal and every human being strives to achieve this goal throughout their life. 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” [1].

“It is subjective, but measurable. Life satisfaction is based on the variables that an individual finds personally important in their own life. A person’s life satisfaction will not be determined based on a factor that he/she does not actually find personally meaningful” [2]. “Quality of Life (QOL), a term related to life satisfaction, is a measure of well-being. It is associated with living conditions like the amount and quality of food, the state of one’s health, and the quality of one’s shelter” [3]. “However, the difference between this related variable and life satisfaction is that life satisfaction is subjective and more inherently emotional. Someone who is homeless or terminally ill may well have a higher life satisfaction than a wealthy person in good health, because they may place importance on a very different set of variables than those involved

in quality of life. Amongst the factors listed by experts income and self-assessed level of health are the most important predictors of Life satisfaction” [4].

“Resilience, although with several definitions, fundamentally, refers to positive adaptation, or the ability to maintain or regain mental health, despite experiencing adversity” [5]. “More broadly, it is “the protective factors and processes or mechanisms that contribute to a good outcome, despite experiences with stressors shown to carry significant risk for developing psychopathology” [6]. “The various definitions together acknowledge 2 points: various factors and systems contribute as an interactive dynamic process that increases resilience relative to adversity; and resilience may be context and time specific and may not be present across all life domains” [7]. “Resilience is multidimensional and can be affected by multiple factors. There are four main themes of factors affecting resilience: (1) the influence of individual factors (e.g. individual traits, temperament, having a higher purpose, being self-determined), (2) environmental and organizational factors (e.g. workplace culture), (3) approaches that an individual takes when interacting with her/his

professional circumstances (e.g. professional shielding and self-reflection), and (4) effective educational interventions (e.g. resilience workshops)" [8].

"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 individual and 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 associated with loss of vision" [9].

A person lives his life, and sees life from personal perspective. In other words, an individual ultimately determines the metrics of his satisfaction. A low QOL may co-exist with good life satisfaction. In this light, a life satisfaction study of persons with eye pathologies might reveal the situation from the patient's point of view. A number of authors have carried out vision related QOL studies worldwide with outstanding results, however, as life satisfaction is the ultimate goal the authors have set out to investigate the effects of eye pathologies on the life satisfaction of adults in Nigeria; looking out on how resilience of the patients and duration of eye disease correlate with life satisfaction. The results of this study will be useful in the wholesome management of the patients with eye pathology. The eye-care giver will be better informed on the occasional need, if any, for referral for patient psychological assessment.

## 2. MATERIALS AND METHODS

This is a hospital –based cross-sectional descriptive study in which patients diagnosed with eye pathologies at the Guinness Eye Centre, Onitsha, South east Nigeria were interviewed to determine the role of patients' resilience and duration of eye pathologies as determinants of their life satisfaction. The Eye Centre is located in Onitsha, a predominantly commercial city, and serves as a major tertiary eye hospital covering all the five south eastern states and environs in Nigeria. This centre is also a sub-unit of the Nnamdi Azikiwe University Teaching Hospital, Nnewi, south eastern, Nigeria. It has clinics for anterior segment, vitreo-

retina, paediatric ophthalmology, glaucoma, and oculoplastic subspecialties.

The participants were non-first time presenters at the clinic who had been diagnosed of vision impairing or potential blindness-causing eye pathologies.

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

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

Where,

N = Minimum sample size.

Z = The 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) [10].

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.

After consultation with an ophthalmologist the eligible patients were serially selected and interviewed by the authors to obtain data using an interviewer-administered structured questionnaire. This tool contained questions on socio-demographics, the SWLS (Satisfaction With Life Scale) and the UNIZIK R Scale (Nnamdi Azikiwe University Awka Resilience Scale). See the appendix.

All old patients (that is non-first time presenters) were included in the study. However, patients less than 15years, those who did not give consent, those with inconclusive diagnoses, and patients with eye pathologies without potential of causing visual impairment were excluded.

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*-test and ANOVA. Statistical significance was set at  $P < 0.05$  for all analyses.

## 3. RESULTS

One hundred and thirty seven patients with ocular pathologies were interviewed. The age range was from 15 to 88years while the duration

of illness ranged from 1 to 23years (mean 4.32 years).

The male to female ratio was 1:1.

The study explores the duration of eye pathology diagnosis, and resilience as determinants of Life satisfaction among patients living with some eye pathologies. Gender and age of the participant were controlled as covariate.

The initial correlations showed that there was significant correlation between duration of eye pathology diagnosis and life satisfaction  $r = -.22$ ,

$p = .01$  resilience and life satisfaction  $r = .30$ ,  $p = .01$  (see Table 1).

Further analysis to test the study hypotheses utilizing hierarchical multiple regression shows that duration of eye pathology diagnosis, and resilience contributed to 13.2% ( $R^2 = .132$ ) of life satisfaction among the participants. The ANOVA summary shows that the model was significant at  $F(4,136) = 6.18$ ,  $P = .01$  (see Table 2).

Specifically, the beta coefficient shows that duration of eye pathology diagnosis negatively

**Table 1. Descriptive (mean and standard deviation) and correlation of the study variables**

		mean	SD	1	2	3	4	5
1	Age	54.61	16.47	1				
2	Gender	-	-	-	1			
3	Life satisfaction	24.25	5.85	.15	.03	1		
4	Duration of Illness	4.32	4.22	.14	-.13	-.22**	1	
5	Resilience	32.29	3.78	.02	.02	.30**	-.10	1

\*\* $p = .01$

**Table 2. Multiple regression for duration of illness and resilience as determinants of life satisfaction**

	R <sup>2</sup>	Df1(df2)	F	Beta	T
Model 1	.01	2(134)	1.78		
Age				.16	1.85
Gender				.05	.56
Model 2	.13	2(132)	6.17**		
Duration of Illness				-.21**	-2.56
Resilience				.28**	3.47

\*\* $p = .01$

and significantly predicted Life satisfaction.  $B = -.21$ ,  $P = .01$ . In other words as the duration of eye pathology diagnosis increases, the more likely that the patient will report lesser life satisfaction.

The second hypothesis was accepted, resilience positively and significantly predicted life satisfaction among patients living with some eye pathologies at  $\beta = .28$ ,  $P = .01$  (see Table 2). In other words patients who report higher resilience were more likely to also report higher life satisfaction.

#### 4. DISCUSSION

There are several quality of life (QoL) studies on patients with eye pathologies, however, none was found dwelling on the aspect of life satisfaction and its determinants in patients with ocular diagnoses. Nonetheless, few studies have suggested that 'life satisfaction assessment could be considered a measure of quality of life'

[11,12]. Yildirim et al reported that a significant positive correlation was found between life satisfaction and QoL among nursing students in Turkey [12]. This correlation is true for the various domains of QoL. In corroborating the choice of life satisfaction assessment over QoL as in this study, Diener and co-workers asserted that the judgement of how satisfied people are with the present state of affairs is based on a comparison with a standard which each individual sets for him or herself. They say that it is not externally imposed. For this reason researchers believe that self-report is the most direct and most accurate way to measure life satisfaction [13,14].

From this study it was found that as the duration of the eye diseases since diagnosis increased the patients were less satisfied with life ( $r = -0.22$ ,  $p = 0.01$ ). This significant negative correlation may be accounted for by the fact that most long lasting eye diseases tend to cause more burden

of visual impairment hence more impact on life satisfaction. In fact, the Blue Mountain Study on the impact of bilateral visual impairment on health-related quality of life (HRQOL) reported that the impact appeared to be directly related to the severity of visual impairment but not to the underlying eye condition. The impact of visual impairment was comparable with that of major medical conditions and affected mental more than physical domains [15]. Furthermore, Brunen and Heir in Oslo reported that development of depression in the patients with visual impairment over time subsequently resulted in lowered life satisfaction [16]. In a comparative analysis of a WHO study done in Ghana amongst older adults Tetteh et al also reported lower life satisfaction in the visually impaired when compared with the non- visually impaired [17]. A different report from study of Parkinson disease patients indicated that increasing disease duration correlated with lower HRQOL when assessed as a global construct. However, when subscales were evaluated, difficulties with bodily discomfort and cognitive complaints were comparable in individuals in the 1-5years and 6-10years duration groups [18]. Furthermore, in contrast to the finding of this study 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 [19]. Some patients who experience disease remission following improved modern care over time may expectedly gain in their satisfaction with life. This was typically demonstrated in the work done by Gothwal and Mandal who assessed the QoL and life satisfaction of young adults (mean age 22.5 years) diagnosed and treated for primary congenital glaucoma in early childhood. They found that better QoL was significantly related to rural residence and higher education, while higher LS was significantly related to marital status, unilateral affliction, and higher education [20]. It is possible this aspect of positive correlation between duration of disease and life satisfaction also resulted from build-up of resilience to the disease over considerable number of years.

This study found that the more resilient the eye pathology patients were the better their

satisfaction with life ( $r= 0.30, p=0.01$ ). This was consistent with most other previous studies. Peng et al in China, while studying glaucoma patients, reported a significant positive correlation between resilience and QoL with sleep disturbance as a mediating factor [21]. They found that this relationship between resilience and QoL is mitigated in patients with sleep disturbance. Accordingly, glaucoma patients with severe sleep disturbance have lowered QoL. In a similar study, resilience was found to mediate the relationship between social support and quality of life in primary glaucoma patients [22]. This finding suggested that increasing resilience and social support can improve the quality of life of primary glaucoma patients in clinical practice. Studies done in other chronic medical conditions showed similar trend: inflammatory bowel disease [23], recurrent coronary artery disease [24], Parkinson's disease [25], rheumatoid arthritis [26], epilepsy [27], diabetes [28] and colon cancer [29]. This study shows that in combination resilience and duration of disease significantly accounted for 13.6% of total life satisfaction of the patients although further analysis was not done to determine the other contributors to life satisfaction. This may include level of income/employment, educational level, social support and environmental factors [12]. Similarly, a study has shown that the extent of resilience exhibited may be determined by the type of coping strategy adopted by the patients especially the strategies of "positive refocusing", "positive revaluation" and "positive thinking" [30]. In contrast, few studies show that the physical component of quality of life is also related to resilience, but in a negative way [30,31]. Patients undergoing oncological treatment could be suffering from numerous physical severe symptoms that directly influence their physical condition, such as bodily pain, fatigue, sleep difficulties, gastrointestinal or endocrine disorders, among others [31]. This relation could be derived from the influence of bodily pain, which is also negatively and significantly associated with resilience.

This study is limited by the non- categorization of the specific eye pathologies in relation to the findings as most eye pathologies do not carry the same weight of visual morbidity. In addition, the comparison of QoL studies with this present study on life satisfaction may pose some analytical errors. However, the findings of significant correlations of disease duration and resilience with life satisfaction will open a new horizon of further studies on the validity of interchangeability of usage of both tools in assessing patients.

Furthermore, this study did not aim at subsequent life satisfaction changes with institution of adequate modern care.

## 5. CONCLUSION

The life satisfaction of eye disease patients is negatively affected as the duration of the disease prolongs. However, patients with enhanced resilience have improved satisfaction with life. Psychotherapies aimed at enhancing resilience will positively impact on life satisfaction of eye pathology patients. 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. Eye care-givers may be trained on detection of early signs of low life satisfaction in ocular patients for urgent referral.

## CONSENT

Prior informed written consent was obtained from each respondent. Oral informed consent was considered since the data was collected by using an interview administered structured questionnaire, and there was no invasive examination procedure conducted on the patients for the sake of this research. Patient information was obtained with no identifier and confidentiality was maintained.

## ETHICAL APPROVAL

As per international standards or university standards written ethical approval has been collected and preserved by the author(s).

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## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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## APPENDIX

### QUESTIONNAIRE

#### PART A (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.

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

What is your present employment status: tick as appropriate

Student-----

Employed-----

**Unemployed—**

#### PART B

#### SWLS (SATISFACTION WITH LIFE SCALE)

Below are five statements with which you agree or disagree since 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

#### PART C

#### UNIZIK R Scale (RESILIENCE)

**Instruction: Using the response options below tick (✓) how often each statement applies to you.**

**Strongly Disagree =1, Disagree =2, Undecided = 3, Agree = 4, Strongly Agree = 5**

S/N		Strongly Disagree	Disagree	undecided	Agree	Strongly Agree
1	I do overcome difficult challenges	1	2	3	4	5
2	I encourage myself in every situation	1	2	3	4	5
3	Many a time, I give up on daunting tasks	1	2	3	4	5
4	I always overcome hard times	1	2	3	4	5
5*	I can not handle urgent situations	1	2	3	4	5
6*	I avoid complicated task	1	2	3	4	5
7*	I feel like not going back home sometimes	1	2	3	4	5
8*	I get nervous whenever any member of my family is in trouble	1	2	3	4	5
9	I am always happy when I remember home	1	2	3	4	5
10*	I am afraid of asking questions when faced with difficult tasks	1	2	3	4	5
11*	I easily lose focus when experiencing difficulty	1	2	3	4	5
12*	I get angry with people who don't share my views	1	2	3	4	5
13	I have control of situations around me	1	2	3	4	5
14*	I find it difficult coping with changes around me	1	2	3	4	5
15	I can easily do well in any environment	1	2	3	4	5
16	Whenever I start a task I finish it	1	2	3	4	5
17	I see problems in my community as an opportunity to help	1	2	3	4	5