Perceived Stress Score Among Non-Trauma Patients Presenting At The General Outpatient Clinic Of A Nigerian Tertiary Health Institution.

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ABSTRACT

Background: Stress is a common concept that is experienced by everyone. Previous studies have demonstrated relationship between stress and health related issues. One of the instruments that have been developed to measure stress level is the perceived stress score (PSS). This study was designed to use this scale to measure the level of stress among the study population and identify any stress related factor in their characteristics and make appropriate recommendation.

Methods - This study which was part of a larger study was conducted over a period of three months (September-November, 2015) during which a total of 360 consenting patients who presented at the outpatient clinics were recruited into the study. The sample size was determined using the percentage of new patients seen the previous year which was 36%. A total of 360 patients were recruited by selecting 30 patients weekly out of an average of 107 new patients per week using a regular interval ratio. Analysis was done by the use of SPSS version 17. Being employed n this study was defined as having regular source of income.

Results – the mean PSS score among the respondents was 19.5±8.46 with 44.7% scoring above 20. The mean age and Body Mass Index (BMI) were 42.14±14.87 years and 25.0±3.16 respectively.

Marital status was negatively associated with PSS score while earning above $1.25 per day had a positive association.

Conclusion - The finding that 44.7% of respondents scored above 20 on the PSS scale is regarded as demonstrating high level of stress among the study population. The negative association with marital status demonstrates the positive influence of marital relationship on health. The positive association of PSS with higher earning power could be a reflection of excess burden placed on the few members of the family with high income in a setting of high poverty and unemployment rate.It is recommended that doctors should be competent in psychotherapy in view of the dearth of clinical psychologist in our country.

I.   Introduction

The World Health Organization In 1948 Defined Health As A State Of Physical, Mental And Social Well-Being And Not Merely Absence Of Disease Or Infirmity[1,2]. Within This Background Of Holistic Approach To Health Care Arose The Biopsychosocial Concept In Health Care. Many Retrospective And Prospective Studies Have Demonstrated A Relationship Of Stress To Illness By The Findings That An Increase In Stressful Life Events Precedes The Development Of A Wide Range Of Different Diseases. Life Events That Are Perceived Negatively Or Are Not Within The Individual's Control Have The Most Adverse Effect On Health[3, 4]. Studies Have Linked Perceived Stress With Individual's State Of Health. High Perceived Stress Score Levels Have Been Associated With Poor Physical Health Especially The Development Of Coronary Heart Disease[5,6]. High Stress Levels Have Also Been Associated With Poor Mental Health Outcomes Like Anxiety[5,7,8] And Depression[5,9,10]. Among The Elderly, Perceived Stress Has Also Been Demonstrated To Be A Predictor Of Mortality[11,12,13,14]. It Has Been Proposed That There Are Pathways Linking Stress And To Poor Health And This Include Stress-Related Neuro-Endocrine Dysregulation, Poor Attention To Health, Lack Of Engagement In Health Behaviours, And Use Of Unhealthy Coping Strategies, Including Smoking, Alcohol And Emotional Eating[5].

Stress May Refer To Any Of The Three Components Of What Has Been Called The Stress Process: The Stressor Which Is The Environmental Events Perceived And Experienced By An Individual, The Physiological Response To Stressors, And The Health Consequences Of Stressors[3]. The Most Successful Method For Studying Stress And Health Has Been To Examine Stressors, Particularly The Relationship Of Perceived Stressful Life Events To Illness[3].

Holmes And Rahe In 1967 Developed Their Life Event Scale By Asking A Random Sample Of The Population To Rank How Stressful They Perceived Each Of 43 Common Life Events To Be[15,16,17,18]. Physicians Frequently Encounter Patients Who Have Recently Experienced Stressful Life Changes And Who Have Weak Social Support And An Accumulation Of Evidence Indicates That These Psychosocial Profiles Are Associated With Health Impairment[4]. It Has Been Recommended That A Research In This Area Is Needed To Develop Effective Clinical And Public Health Strategies That Prevent Or Minimize Adverse Health Consequences[4].

In 1948, Cohen And Colleagues Developed A 14 - Item English Version Of The Perceived Stress Scale (Pss - 14) As A Global Measure Of Stress[19]. Other Versions Of The Pss Have Also Been Developed Like The 10 - Item Version (Pss-10) And 4 – Item Version (Pss - 4). However, Various Studies Have Demonstrated That The Pss -10 Not Only Provides An Adequate Measure Of Perceived Stress And Similar Correlations With Smoking And Health-Related Measures As The Complete Version, But Has Also Shown A Higher Reliability Among Chinese Patients[20,21]. The Pss Is Considered To Be A Brief Scale Measuring Perceived Stress That Can Be Administered In A Few Minutes[22].

II.   Methodology

Setting Of The Study – This Is A Descriptive, Cross Sectional Study Conducted Among Non-Trauma Patients Presenting For The First Time At General Outpatient Clinic Of Ekiti State University Teaching Hospital, Ado-Ekiti.

Study Population – All Consenting Patients Presenting For The First Time At The Affected Clinic Were Recruited Until The Required Sample Size Was Obtained.

Sample Size – The Sample Size For This Study Is Derived Using The Formula $N = P(1-P)(Z/D)^2$
Where N Is The Required Sample Size, P Is The Percentage Of The Total Number Of Patients Seen In The Previous Year That Were New Patients Which Was 36%, Z = Confidence Level At 95% (Standard Value Of 1.98), D = Margin Of Error At 5% (Standard Value Of 0.05).

The Total Number Of Patients Seen Over The Previous Year Was 14,063 And This Is More Than 10,000.
$N = (0.36)(1-0.36)(1.96/0.05)^2$
$= 354.04$
Therefore The Minimum Sample Size For This Study Should Be 354.

Sampling Technique – From An Average Of 107 New Patients Per Week, A Total Of 30 Patients Were Selected Weekly Using A Regular Interval Ratio Over A 3 Month Period (Sept-Oct 2016).

Perceived Stress Score Of Respondents Was Assessed Using The 10-Item Version (Pss-10) Which Consist Of Six Negative And Four Positive Items. Each Item Is Rated On A Five-Point Scale From O=Never, To 4= Very Often, Covering The Preceding Month. The Positive Items Are Scored In A Reversed Order. High Scores Indicate Greater Level Of Stress. The Questionnaire Asked Participants To Rate How Often They Had Felt Certain Ways Over The Past Month.

Data Collection - An Interviewer Administered Questionnaire Was Used To Collect Information On The Socio-Demographic Characteristics Of The Patients. Information On Health Risk Factors Like Smoking, Alcohol Intake And Exercise Were Also Obtained. Specific Questions On Their Perceived Stress Over The Previous One Month Was Also Obtained Using Pss – 10. Weight And Height Were Taken To Determine Their Body Mass Index (Bmi).

Exclusion Criteria – Patients Who Are Referred From Another Hospital With Chronic Illness Were Excluded From The Study.

Data Analysis – Data Collected Was Analyzed Using Statistical Package For Social Science Version 17 Software.

Frequency Tables And Diagram In Form Of Chart Were Generated For Relevant Variables. Mean And Standard Deviation (Sd), Proportions And Percentages Were Determined As Applicable. Further Analysis Was By Liner Regression Model. The Level Of Significance Of This Study Was Set At 5% (P<0.05).

Ethical Consideration

Ethical Approval For This Study Was Obtained From The Ethics And Research Committee Of The Ekiti State University Teaching Hospital Before Starting The Study. A Written Consent Was Obtained From The Participants.

Result

This Study Included Three Hundred And Sixty Subjects Comprising Of 138(38.3%) Male And 222(61.7%) Female. The Mean Age For The Subjects Was 42.14 ± 14.87 Years, Mean Body Mass Index (Bmi) Was 25.0 ± 3.16 And The Mean Total Stress Score For The Total Sample Was 19.59 ± 8.46.

Fifty-Five Percent (55.6%) Were Presently Married, 75% Were Employed While 77.8% Earn Above One Dollar Per Day (Employment Being Defined As Having Regular Source Of Income), Forty-Four (44.7%) Were Educated Up To Tertiary Institution.

Table I: Social Demographic And Other Characteristics Of The Subjects

Variables	frequency	percentages(%)
Sex:		
Male	138	38.3
Female	222	61.7
Marital Status		
Separated	5	1.4
Divorced	15	4.2
Widowed	47	13.1
Single	93	25.8
Married	200	55.6
Ethnicity:		
Hausa	14	3.9
Igbo	68	18.9
Yoruba	278	77.2
Religion:		
Muslim	45	12.5
Christianity	315	87.5
Level Of Education:		
No Formal	16	4.4
Primary	49	13.6
Secondary	134	37.2
Tertiary	161	44.7
Employment Status:		
Not Employed	90	25.0

Employed	270	75.0
Income:		
<$1.25/Day	80	22.2
≥$1.25/Day	280	77.8
	Frequency	Mean (Sd)
Age In Years	360	42.14 (14.87)
Bmi	360	25.0 (3.16)
Stress Score	360	19.59 (8.46)
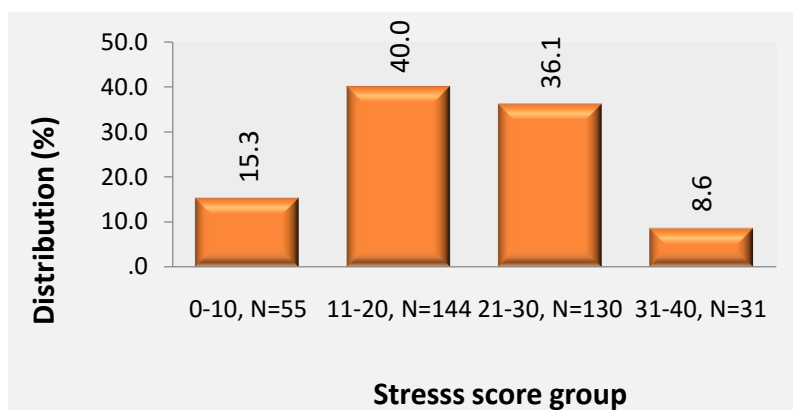
Figure 1 - Distribution of Subject Base OnPss Score

Table Ii:Health Related Behavior Of Respondents

Characteristics	Frequency	Percentage (%)
Alcohol Intake		
Never	185	51.4
In The Past	86	23.9
Drink Presently	89	24.7
Cigarette Smoking		
Never	295	82.2
In The Past	43	11.9
Smoke Presently	21	5.8
Physical Exercise		
None	259	71.9
At Least Once/Week	101	28.1

Table III: Distribution Of Subjects According To Bmi

	Frequency	Percent	Interpretation
<18.5	3	.8	Under Weight
18.5 - 24.9	185	51.4	Normal
25.0 - 29.9	162	45.0	Grade 1 Over Weight
30.0 - 39.9	8	2.2	Grade 2 Over Weight
=/>40	2	.6	Grade 3 Over Weight
Total	360	100.0	

Table Iv: Comparison Of Mean Pss Score Based On Gender

Paired Samples Test									
		Paired Differences					T	Df	P - Value
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval				
					Lower	Upper			
	Male Female	.587	12.435	1.059	-1.506	2.680	.555	137	.580

Table V: Regression Analysis Of Covariates

	B	S.E.	Wald	Df	P – Value	Or	95% C.I.	
							Lower	Upper
Smoking	-.100	.295	.116	1	.734	.904	.507	1.613
Marital Status	-1.237	.234	27.863	1	.000	.290	.183	.459
Monthlyincome	.750	.351	4.565	1	.033	2.117	1.064	4.212
Employment Status	.534	.336	2.525	1	.112	1.705	.883	3.293
Constant	-.454	.376	1.452	1	.228	.635		

Table I Shows The Demographic Characteristics Of The Respondents While Table Ii Shows The Health Related Behaviour Of The Respondents.

Figure I Shows The Distribution Of Respondents According To Pss Score And Those Who Score Above 20 Constituted 44.7%.

Table Iii Shows The Distribution Of Respondents According To Body Mass Index (Bmi) While Table Iv Shows The Comparison Of The Mean Pss Score Between Male And Female Subjects. There Is No Statistically Significant Difference Between The Two Means (T = .555, P = 0.580).

Table V Shows Regression Analysis Of Covariates. There Is A Significant Association Between Marital Status (B = - 1.237, P = 0.000), Income(B = .750, P = 0.03) And Pss Score.

III. Discussion

There Was No Significance Difference In The Total Mean Pss Score Between Male And Female In This Study, Though The Mean For The Male Is Slightly Higher Than For The Female In This Study. This Is In Contrast With Finding By Doris Ypl Et Al Who Found A Significant Difference Between In The Mean Pss Score Between Male And Female With Female Scoring Higher Among Chinese Cardiac Patient[20]. The Difference In Finding May Be Due In Part To The Fact That The Subjects Recruited For This Study Were Acutely Ill Patients Who Were Otherwise Involving Themselves In Normal Daily Activity In Contrast With Cardiac Patients. The Cultural Differences Between The Two Study Environments May Also Be A Contributing Factor. Our Society Is Changing From The Former Male Dominated Bread Winner To A Situation Where Both Male And Female Fend For The Family And Therefore Share The Associated Responsibility In Comparable Proportion.

Marriage Has Been Said To Bear The Most Influential Relationship On Health As Married Individuals Are Healthier Than Widowed, Who Are In Turn Healthier Than Divorced Or Never Married Individual. Those Who Are Married Have Healthier Lifestyles, Longer Lives And Less Disability[3].

Research In Psycholoimmunology Has Demonstrated That Stress Can Decree Immunity And Make Individuals More Susceptible To Many Different Diseases, Including Infaections[23].

Higher Income Also Had A Positive Association With Pss Score In This Study. One Would Have Expected That A Higher Income Level Would Translate To Less Stress Score But The Positive Association Could Be Due To The Nature Of Most African Societies. As A Developing Country With High Unemployment Rate And Large Family Size, The Custom Of Being Ones Brothers' Keeper And Extended Family System That Characterize Traditional African Societies May Create An Undue Stress On The Few That Have Regular Source Of Income.

IV. Conclusion

A High Proportion (44.7%) Of Respondents Scored High On The Pss. This May Negatively Impact On The Overall Health Of The Population. Being Married And Cigarette Smoking Were Negatively Associated While The Level Of Income Has A Positive Association With Stress Score Respectively.

This Work Has Raised Some Issues That Demand Further Research Especially The Association Between High Income And High Stress Score.Finally, This Study Has Demonstrated That Physicians Need To Be Knowledgeable About Psychotherapy Considering The Dearth Of Clinical Psychologists In Our Hospitals.

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