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Risks of Disability Among Adults Living with Musculoskeletal Pain in Enugu, Nigeria: A Cross-Sectional Survey

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Pain has remained one of the disabling conditions in humans. Several survey studies have emphasized the magnitude of pain as a public health issue, citing its negative impact on patients' functional status and quality of life. This study sought to ascertain the disability risks among adults with low back pain in Enugu State with respect to age, gender, marital status, Body Mass Index (BMI) and occupation. A standard Orebro Questionnaire was administered to respondents in a cross-sectional survey using a convenience sampling technique. The questionnaire had three sections: (A social demographic details; B occurrence of pain and interventions for pain relief; C risks of disability). The weight and height of the participants were measured using weighing scale and stadiometer respectively. Ethical approval was obtained from the Research and Ethics committee of University of Nigeria Teaching Hospital, Enugu, while the informed consent of the participants was duly obtained before commencing the study. A total of 400 questionnaires were distributed and recovered. Data were analyzed using descriptive statistics of relative frequency and inferential statistics of Chi-square. Among the 400 respondents 236 were females (59.0%) and 164 males (41.0%). Among age range, adults within the age range of 55-64yrs had the highest risk of disability (31.1%); among genders, females had the highest risk of disability (55.2%); among marital status, married had the highest risk of disability (82.8%). Chi-square analysis showed that there was significant relationship between risk of disability and age, occupation and BMI ($p < 0.05$) Coping strategies adopted were; sitting and resting after a few hours of work, standing after few hours of sitting down, use of over-the-counter analgesics and mild to moderate physical exercise to alleviate the LBP.

Keywords: Risk of disability, musculoskeletal pain, quality of life, functional status

INTRODUCTION

Disability is any restriction or lack (resulting from an impairment) of ability to perform an activity in the manner or within the range considered normal for a human being (Sunder, 2003). Impairment is any loss or abnormality of day to day living because of disability; unable to fulfil the obligations required of them and play the role expected of

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them in society. Functional status of individuals describes the capacity and performance of safe activities of daily living (ADL) and instrumental activities of daily living (IDL) (Blyth, *et al.*, 2001). Disability in developing countries stems largely from preventable impairments associated with injuries, communicable, maternal and prenatal disease and prevention has to remain a primary focus (Elwan, 1999).

Pains such as musculoskeletal pain (MSP) are a global problem affecting all spheres of human endeavours; gulping a lot of money as compensation in many developing and developed countries (Akinpelu *et al., 2010; Ekechukwu et al, 2018a)*. The economic burden of musculoskeletal pain is second only to that of cardiovascular disease (International Association for the study of pain, 2009). In the United States of America, the overall cost of MSP was estimated to be about 214.9 billion US Dollars, of which 38% was spent on hospital admission and 21% on nursing home care (Akinpelu et al., *2010)*. Musculoskeletal pain is the second most common cause of disability in the United States and a common reason for missing work.

Pain remains a major health challenge facing the health care services delivery industry. Figures and facts still show that musculoskeletal pains are major complaints from patients seeking medical attention across the globe. The African nations including Nigeria are not exempted (Louw, *et al., 2007)*.

Musculoskeletal pain makes an impact on the quality of life and interferes with the daily activities of the individuals especially for physical activities, sports and the ability to go to work and perform their job functions (Blyth et al., 2001; Ekechukwu et al, 2018b*)*. Pain interferes on patient's mental state and 1/3 of these individual presents a pathological mental score as follows: 21% suffer depression, 49% feel older, 26% are unhappy, and 31% feel so bad that they consider death. Chronic pain has an effect on the individual's relationship with friends, relatives and works colleagues, leading to suffering and worsening in quality of life. (Lazarus & Neumann, 2001).

Several studies have been done on the prevalence of low back pain among pregnant women and health workers especially in developed countries, but community-based studies done on the risks of disability among adults with musculoskeletal pain are few. Hence, the need for this study to determine the risks of disability among adults with musculoskeletal pain

MATERIALS AND METHODS

The Orebro Musculoskeletal Pain Questionnaire (OMPQ) is a standardized questionnaire used for assessment of risks of developing disability among persons with musculoskeletal pain (Linton and Boersma, 2003). It has three sections: A socio-demographic data, B occurrence of pain and interventions used for pain relief and C risks of disability. The questionnaire has reliability index of 0.83. An improvised height meter was used to measure the height of the participants in meter. A weighing scale (BSM 01 mechanical scale made in China): was used to measure the weight of the participants in kg. The study utilized a cross-sectional survey research design and was carried out in Uwani, Enugu Metropolis, Capital of Enugu State. Enugu is located in the South East of Nigeria. Enugu is predominantly Igbo speaking State, although people from various states of the country reside in the State. The study employed convenience sampling technique. The sample size was determined using formula (Uzoagulu, AE, 1998)

$$n = \frac{N}{1 + N(e)^2}$$

Where n = sample size
N = population (722,664)
e = level of significance (0.05)
1= unity

$$n = \frac{722{,}664}{1 + 722{,}664 \times (0.05)^2}$$
$$n = 400$$

Selection Criteria

(a) Inclusion Criteria

- This study involved only adults in Enugu Metropolis.
- Subjects' age ranged from the 18 years and above.
- Only those who could read and write in the English language participated.

(b) Exclusion Criteria

- Adults that were pregnant at the time of the study did not participate.
- Adults who had traumatic injuries, fracture, neurological conditions such as neuropathies and metabolic diseases such as diabetes were excluded.

Ethical Consideration

The Study sought and obtained ethical approval from the Research and Ethics committee of the University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu. Written informed consent of the participants was also duly obtained.

Procedure

The questionnaires were administered by direct contact to the participants who volunteered to participate in the study and recovered immediately after completion. Only those who met the inclusion criteria were involved in the study. Subjects' height and weight were measured using height meter and weighing scale respectively.

Data Analysis

Analyses were performed using the Statistical Package for Social Sciences (SPSS) version 20. The data were analyzed descriptive using percentages and inferentially using Chi-square.

Table 1. Sociodemographic profile of participants

Variables	Frequency	Percentage
18-24	128	32.0
25-34	105	26.3
35-44	72	18.0
45-54	57	14.3
55-64	25	6.3
65 & above	13 3.	3
Male	164 4	1.0
Female	236	59.0
Married	154	38.5
Widow	1	0.3
Divorce	1	0.3
Single	244	61.0
Civil servant	119	29.8
Students	206 5	1.5
Self-`employed.	67	16.8
Nil	8	2.0
Under wt. (< 20)	64	16.0
Normal wt. (20-24)	206	51.5
Over wt. (25-30)	117	29.3
Obese (30 & above)	13	3.3

RESULTS

Table 1 shows the demographic data of participants. A total of 400 copies of questionnaire were distributed and returned giving a response rate of 100%. Data from the 400 participants were computed and analyzed. Out of 400 participants, 236 (59%) were females and 164(41%) males.

Table 2 shows that 236 (59.0%) out of the 400 participants had pain, while 164(41.0%) had no pain. Also, out of 236 adults that had musculoskeletal pain 29(12.3%) had the risk of disability, while 207(87.7%) had no risk of disability.

Table 3 shows that among the participants (12.3%) that had the risk of disability 31.0% of them were within the age range of 55- 64. Among genders, 55.2% of the female participants had the highest risk than males.

Table 4 shows the Chi-square p-value for age, sex, marital status, occupation and BMI were 0.000, 0.663, 0.140, 0.001 and 0.001 respectively. This showed that the prevalence of risk of disability among adults with respect to age, occupation and BMI was significant with the p-value less than 0.05($p < 0.05$) while that of sex and marital status was not significant because the p-value was greater than 0.05 ($p > 0.05$). Also, the relationship between risk of disability and age, sex, marital status, occupation and BMI. There was significant relationship between risk of disability and age, occupation and BMI (p-value 0.000, 0.001and 0.001) respectively, while there was no significant relationship between risk of disability and sex and marital status (p-value 0.663 and 0.140) respectively.

DISCUSSION

The results on disability risks of the participants show that 12.3% had risks of disability, while 31.0% of them were within the age range of 55- 64yrs and so had the highest risk. This agreed with the result of the study done by Eggermont *et al.*, 2005*,* on pain characteristics associated with the onset of disability in older adults which showed that older women reported more pain and had more disability than older men.

Also, the result on disability risk of the participants showing that 12.3% had risk of disability, while 31.0% of them were within the age range of 55-64yrs and so had the highest risk which is in-line with the result of the study done by Buchman *et al. o*n Musculoskeletal Pain and Incident Disability in Community-Dwelling Older Adults.

A study was done by Yu Kaiho, *et al,* on Impact of Pain on Incident Risk of Disability in Elderly Japanese

Table 2. Musculoskeletal pains and risk of disability

Variable	Freq.	%
Pain	236	59.0
No pain	164	41.0
Total	400	100.0
Risk of disability Present	29	12.3
Risk of disability absent	207	87.7
Total	236	100

Table 3. Prevalence of risk of disability among adults with musculoskeletal pain in Enugu Metropolis with respect to age, sex, marital status, occupation and BMI

Variable	Disability	Freq. %	No disability	Freq. %	p-value
		Age range			
18-24	1	3.4	41	19.8	0.001
25-34	0	0.0	46	22.2	
35-44	8	27.6	54	26.1	
45-54	7	24.1	43	20.8	
55-64	9	31.0	14	6.8	
64 & above	4	13.8	9	4.3	
		Sex			
Male	13	44.8	84	40.6	0.663
Female	16	55.2	123	59.4	
		Marital status			
Married	24	82.8	105	50.7	0.140
Widow	0	0.0	1	0.5	
Divorce	0	0.0	1	0.5	
Single	5	17.2	100	48.3	
		Occupation			
Civil serv.	18	62.1	79	38.2	0.001
Student	2	6.9	82	39.6	
Self emp.	7	24.1	44	21.3	
Nil 2	6.9	2	1.0		
		BMI			
Under wt. (< 20)	1	3.4	36	17.4	0.001
Normal wt. (20-24)	12	41.4	114	55.1	
Over wt. (25-30)	12	41.4	53	25.6	
Obese (30 & above)	4	13.8	4	1.9	

supports the result on disability risk of the participants showing that 12.3% had risk of disability, while 31.0% of them were within the age range of 55-64yrs and above.

The result showing that there was no significant relationship between risk of disability and sex and marital status (p-value 0.663 and 0.140) respectively disagreed with the result of the study on Prevalence of low back pain and its relation to quality of life and disability among

Table 4. The relationship between risk of disability and age, sex, marital status, occupation and BMI and interventions sought by affected adults

Variables	Chi-square p-value	
Risk of disability * age	0.001	
Risk of disability * sex	0.663	
Risk of disability * marital status	0.014	
Risk of disability * occupation	0.001	
Risk of disability * BMI	0.001	
Variables	Freq.	%
Doctor	90	38.1
Physiotherapist	18	7.6
Nurse	2	0.9
Self-medication	122	51.7
Nil	4	1.7
Total	236	100

women in rural area of Puducherry, India done by Guna et al.,2016.

The results on treatment interventions undertaken by the participants who had pain show that 38.1% met doctors for treatment; 7.6% physiotherapist; 0.9% nurse, while 51.7% had self-medication. These results disagreed with the result of the study on exercise therapy compliance in acute low back pain patients (Schneiders, 1998)**.**

A Systematic Review of the Effects of Exercise and Physical Activity on Non-Specific Chronic Low Back Pain done by Rebecca Gordon and Saul Bloxha, also disagreed with the result on treatment interventions undertaken by participants who had pain show that 38.1% met doctors for treatment; 7.6% physiotherapist; 0.9% nurse, while 51.7% had self-medication.

CONCLUSION

Risks of disability were more in female, married, civil servants, normal weight and among the age range of 55-64yrs. Risk of disability had a relationship with age, occupation and BMI. Majority of adults resorted to self-medication.

RECOMMENDATIONS

Based on the observations made in this study, the following recommendations are made:

Public health awareness should be carried out in Enugu State on causes and complications and prevention of musculoskeletal injuries/pain.

Ergonomic principles should be thought to the public and especially civil servants and students in Enugu State.

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CONFLICT OF INTEREST

The authors report no conflict of interest

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