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Prevalence of common musculoskeletal disorders among rheumatology patients in Imo state: A focus on age and gender

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Abstract
Global health burden of disease and musculoskeletal disorders were reported to be the second leading cause of disability worldwide. This suggests that many people are affected with musculoskeletal disorders worldwide imposing huge financial cost in treatment and management of musculoskeletal disorders among patients globally. Consequently the need arises for the study on the socio-demographic variables associated with prevalence of common musculoskeletal disorders among rheumatology patients in Imo State with respect to age and gender of the patients. Three research questions and three hypotheses guided the study. The study adopted ex-post facto research design. It was carried out in Imo State. Population of this study consisted of all the 17,787 patients both old and young who were screened for musculoskeletal disorders in the hospitals that offer services on musculoskeletal disorders in Imo State from 2016-2020 based on census sampling. The instrument for data collection for this study was valid folders of the patients (a proforma). Data collected were analyzed using descriptive statistics of frequency count and percentages to answer the research questions while inferential statistics of chi-square was used to test the hypotheses at $p < 0.05$. The results revealed that demographic variables (such as year, age and gender) associated significantly with the level of prevalence of common musculoskeletal disorders among inhabitants in Imo State. Based on the findings of the study, it was concluded age and gender have effects on prevalence of common musculoskeletal disorders patients. It was recommended among others that the government should plan a gender and age specific enlightenment programmes for the most at risk group of common musculoskeletal disorders.

Keywords: musculoskeletal disorder, prevalence

Introduction

Musculoskeletal disorders are among the most prevalent chronic diseases that can affect a wide range of age groups globally, but yet little or no attention is given to them in terms of early diagnosis and treatment. Example of such diseases are; rheumatoid arthritis, gout, systemic hepes, osteoarthritis, juvenile idiopathic arthritis, psoriatic arthritis and so many others. Musculoskeletal disorders (MsDs) affect more individuals than other disease groups. A one third of people of all ages are affected by MsDs at some point during their lifetime (Springs, 2019) [22]. According to World Health Organization (WHO, 2019) [10], musculoskeletal conditions are not just conditions of older age; they are prevalent across the life course. According to WHO, between one in three people (including children) live with musculoskeletal condition.

Musculoskeletal disorders are often known as "silent" illness. Despite living with them and their disability, many people with these diseases look well but these illnesses affect a large number of people (patients, their family members, caregivers, and health care providers). By recognizing how common and severe musculoskeletal disorders really are, health care providers and other people involved will begin to shed light on these illnesses and not to overlook them. These patients are found in rheumatology clinics of some hospitals. Rheumatology is a branch of medicine specializing in arthritis and other ailments of the joints, and a doctor specializing in the treatment of these ailments is a rheumatologist. Musculoskeletal disorders also called rheumatic diseases can broadly be categorized as joint diseases, physical disability and spinal disorders (WHO, 2020). They are leading causes of morbidity and disability giving rise to enormous health care expenditure and loss of work. They are characterized by pain and consequent reduction in the range of motion and function in one or more areas of the musculoskeletal system (Shiel, 2018) [21]. In some of these diseases there are signs of inflammation, swelling, redness and warmth in the affected areas. They are diseases that affect the muscles and skeletal system.

Some people use the word "arthritis" to refer to all musculoskeletal disorders. Arthritis, which literally means joint inflammation, is just part of the musculoskeletal disorders. According to Higvera (2017) [13], musculoskeletal is not a single disorder, it encompass more than 200 different diseases. They can produce a wide variety of signs and symptoms such as eye inflammation or infections, rashes and sores, pain in the neck, spine or back, difficultly taking a deep breath, muscle pain, tenderness, persistent joint pain and inflammation indicated by joint swelling (Higvera, 2017) [13]. In this study, the prevalence of MsDs will be determined by the number of reported cases of these different types of MsDs based on the aforementioned signs and symptoms.

Prevalence is the number of individuals with a disease either at a specific time or over a specific period of time (Public Health Agency, 2020) [20]. The key concept about prevalence is that it includes both new and existing cases of disease. According to Harvard School of Public Health (2021) [11], prevalence refers to the total number of

individuals in a population who have a disease or health condition at a specific period of time, usually expressed as a percentage of the population. It can be regarded is a measure of frequency of an illness, disease, or health conditions. According to National Institute of Mental Health (2017) [18], there are three different types of prevalence: point prevalence, which is the proportion of a population that has the characteristic at a specific point in time. Another is period prevalence which is the proportion of a population that has the characteristics at any point during a given time period of interest. The third is lifetime prevalence which is the proportions of a population who, at some point in life has ever had the characteristics. This study will be concerned with period prevalence.

The period prevalence rate of MsDs refers to the proportion of the population of people that has MsDs at any point during a given time period of interest. For this study the time period of interest of the researchers will be from 2016-2020. This period was chosen by the researcher because there is already existing record of the musculoskeletal disorder at this period of time and the records will be more current. According to World Health Organization (2020) [29], a recent analysis of global Burden of Disease (GBD) data showed that approximately 1.71 billion people globally have musculoskeletal conditions. While the prevalence of musculoskeletal conditions varies by age and diagnosis, people of all ages everywhere around the world are affected. Musculoskeletal conditions are also the biggest contributor to years lived with disability worldwide with approximately 149 million people according to Laday (2020) [16] accounting to 17 percent of all years lived in disabilities. As at 2017, Laday reported there were approximately 1.3 billion (95%) cases of musculoskeletal disorders worldwide, leading to 122, 300 deaths and 138.7 million disability adjusted life years.

Arthritis and Rheumatology (2020) published a study that described the enormous burden of musculoskeletal conditions. This study summarized the results from the Global Burden of Disease (2019) that observed musculoskeletal conditions are under-recognized despite their enormous cost to individuals, the economy and the health system. Arthritis and Rheumatology further opined that global response is needed. And this should be integrated with other strategies that can address some of the modifiable and important risk factors of musculoskeletal disorders, including obesity, poor nutrition, smoking and sedentary lifestyles. According to Wanyonyi and Frantz (2015) [27], MsDs are highly prevalent in many African countries ranging from 15 percent to 93.6 percent. About 20 percent of this overall prevalence is contributed by the industrial sector which includes mining, blacksmith, and so many others. Certain gene variant, environment and socio-demographic factors can increase a person's susceptibility to musculoskeletal disorders (Nwachukwu *et al*, 2009; Kebede *et al*, 2014; Joker & Joker, 2018) [14]. Socio-demographic relates or involves a combination of social and demographic factors. These factors can also be described as socio-demographic variables or socio-economic characteristics of a population expressed statistically, as age, sex, education and marital status (Koukoulis, *et al*, 2002; Usenbo *et al*, 2015; Kooffreh *et al*, 2016).

Various factors can put one at great risk of developing one or more musculoskeletal disorders. For example, osteoarthritis is more common in older adult than younger adults, the chance of developing the disease increases with age (Tey *et al*, 2010) [23]. Most people over age 60 have osteoarthritis to some degree, but its severity varies (Zelman, 2020). Zelman further explained that people in their 20s and 30s can get osteoarthritis due to some underlying reason, such as joint injury or repetitive joint stress as a result of overuse. At older age bones become weaker and may break more easily. Breakdown of the joints may lead to inflammation, pain, stiffness and deformity resulting to osteoarthritis (Medline Plus, 2021) [17]. According to Cherney (2018) [5] musculoskeletal disorders are common and the risk of developing them increases with age. Some of the most frequent musculoskeletal disorders of the elderly are; osteoporosis, osteoarthritis, microcrystal disorders and fractures (Dim & Dim, 2010; Gheno, *et al*., 2012) [9].

Another factor which seen to influence MsDs prevalence is gender. Women are far more likely than men to develop rheumatoid arthritis, scleroderia, fibromyalgia arthritis, fibromyalgia and hypes which are MsDs, while gout and spondyio arthropathris are more common in men (Enwuru *et al*, 2008; Chinedu *et al*, 2008; Tey *et al*, 2010; Tinazz *et al*, 2011) [23, 24]. Filling (2009) [8] carry out a review of non-veteran samples which suggested that women have a higher prevalence of musculoskeletal pain, neuropathic pain and fibromyalgia than men. Similarly, Haskell, *et al*., (2012) [12] opined that rates of chronic pain are higher among women veterans relatives to men with prevalence rates as high as 78 percent.

From the literature review several studies has been done on socio-demographic variables associated with prevalence of common musculoskeletal disorders among rheumatology patients such as; Cherney (2018) [5] observed that musculoskeletal disorders are common and the risk of developing them increases with age. Also Bernard (2003) [2] opined that education is a risk factor of musculoskeletal disorders for men when occupation was taken into consideration. No research on this issue has been done in Imo State to the best knowledge of the researchers. It is based on this that the study was been designed to study the socio-demographic variables (such as age and gender) and prevalence of common musculoskeletal disorders among rheumatology patients in Imo State.

Statement of the Problem

Global health burden of disease and musculoskeletal disorders were reported to be the second leading cause of disability worldwide. Estimate of the outcome of the global health burden of disease study suggests that almost 2 billion people are affected with musculoskeletal disorders worldwide imposing huge financial cost in treatment and management of musculoskeletal disorders among patients which is associated with an economic burden of over 200 billion per year globally. There is a result of high prevalence of musculoskeletal related complaints. Studies carried out by Ukibe, *et al*. (2015) [25], Okoroiwu *et al*. (2016) [19] and Faloye *et al* (2020) [7] all in Nigeria centered on pattern of osteoarthritis, prevalence of rheumatoid arthritis and systemic lupus respectively, showed high prevalence of specific types of musculoskeletal disorders. of all the studies stated above and other related studies carried out in Nigeria, by different researchers, none was carried out involving other common types of musculoskeletal disorders among patients in Imo State. It is against this background that this

study has been designed to determine the socio-demographic variables associated with prevalence of common musculoskeletal disorders among rheumatology patients in Imo State from 2016 to 2020.

Research Questions

The following research questions guided the study:

1. What is the prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020?
2. What is the influence of age on the prevalence of common musculoskeletal disorders among patients in Imo state from 2016 to 2020?
3. What is the influence of gender on the prevalence of common musculoskeletal disorders among patients in Imo state from 2016 to 2020?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

1. There is no significant difference in the prevalence of musculoskeletal disorders of patients in Imo State from 2016 to 2020.
2. There is no significant difference in the prevalence of musculoskeletal disorders of patients in Imo State in relation to their ages.
3. There is no significant difference in the prevalence of musculoskeletal disorders of patients in Imo State in relation to their gender.

Method

The study adopted ex-post facto research design. It was carried out in Imo State in south East Nigeria. Population of this study consisted of all the 17,787 patients both old and young who were screened for musculoskeletal disorders in the hospitals that offer services on musculoskeletal disorders in Imo State between 2016 -2020. The two hospitals are; Imo State Specialist Hospital Owerri and Mark of Glory Hospital Owerri. Patients case files represent the actual patients for the study since the study mainly concerned about the patient past records. The entire population was studied without sampling technique. The instrument for data collection for this study was the folders of the patients (a proforma). Medical record officers from Imo State Specialist Hospital Owerri and Mark of Glory Hospital ensured the validity of the medical records. The folder is a known, standardized data collection tool currently in use in Health facilities. Therefore, no reliability was required. Data collected were analyzed using descriptive statistics of frequency count and percentages to answer the research questions while inferential statistics of chi-square was used to test the hypotheses at $p < 0.05$.

Results

This section presents the analysis of data for the study according to the research questions and hypotheses.

Table 1: Prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020

Year	Common Musculoskeletal Disorders (CMD)					Prevalence per year	
Year	RA	OA	Gout	PA	JIA	Frequency	Percent (%)
2016	484	601	146	130	95	3472	45.11
2017	558	646	138	125	105	3589	46.63
2018	465	585	110	146	90	3414	44.35
2019	607	686	187	155	117	3771	48.99
2020	524	648	126	123	100	3541	46
Total	2638	3166	707	679	507	17787	100
Prevalence (%)							55.18

Prevalence = 55.2%

Table 1 shows the prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020. Out of all the patients tested, a total of 17,787 cases of common musculoskeletal disorders was recorded within the period under study with a prevalence rate of 55.2%. The prevalence for each year during this study were as follows: 2016 (45.1%), 2017 (46.6%), 2018 (44.3%), 2019 (48.9%) and 2020 (46.0%). Within the period assessed, the prevalence was highest among in 2019 and lowest in 2018.

Table 2: Prevalence of common musculoskeletal disorders among patients in Imo state based on age from 2016 to 2020

2016 Table based on age										
S/N	CMD	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-above	Total
1	RA	11	17	22	23	17	23	13	25	151
2	OA	12	23	26	31	24	30	14	34	194
3	Gout	3	5	5	6	6	6	5	9	45
4	PA	3	4	4	6	5	6	3	7	38
5	JIA	3	3	5	5	3	4	2	3	27
6	Total	32	52	62	71	55	69	37	78	456
2017 Table based on age										
S/N	CMD	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-above	Total
1	RA	9	23	24	28	22	16	23	24	179
2	OA	11	27	29	35	29	20	24	42	217
3	Gout	3	5	5	6	6	4	6	7	42
4	PA	2	4	5	5	5	4	5	7	37
5	JIA	2	7	8	9	3	2	4	5	40
6	Total	27	66	71	83	65	46	62	95	515

2018 Table based on age										
S/N	CMD	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-above	Total
1	RA	8	15	19	25	8	22	16	29	142
2	OA	10	20	26	34	11	23	20	37	181
3	Gout	2	4	5	6	3	5	3	6	34
4	PA	4	5	5	8	3	7	5	7	44
5	JIA	2	4	4	6	1	5	2	5	29
6	Total	26	48	59	79	26	62	46	84	430
2019 Table based on age										
S/N	CMD	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-above	Total
1	RA	11	23	30	36	17	29	14	43	203
2	OA	14	29	7	12	23	37	17	54	193
3	Gout	3	7	5	7	5	8	4	12	51
4	PA	3	6	5	7	5	7	4	10	47
5	JIA	3	5	11	6	2	5	2	7	41
6	Total	34	70	58	68	52	86	41	126	535
2020 Table based on age										
S/N	CMD	6-15	16-25	26-35	36-45	46-55	56-65	66-75	76-above	Total
1	RA	7	18	17	30	9	9	34	38	162
2	OA	9	23	23	42	12	13	38	49	209
3	Gout	2	4	4	8	2	3	7	8	38
4	PA	2	4	3	6	2	3	11	7	38
5	JIA	3	4	4	7	1	2	5	6	32
6	Total	23	53	51	93	26	30	95	108	479

Table 2 shows the prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020 based on age. The result revealed that patients within the age of 6-15 years (5.9%) were diagnosed with common musculoskeletal disorders, 16-25 years (12.0%), 26-35 years (12.5%), 36-45 years (16.4%), 46-55 years (9.3%), 56-65 years (12.2%), 66-75 years (11.7%) while 76 years and above (20.0%). Within the period of 2016-2020, the prevalence was highest among patients within 76 years and above and lowest within the age of 6-15 years.

Table 3: Prevalence of common musculoskeletal disorders among patients in Imo state based on gender from 2016 to 2020

2016 Table based on gender				
S/N	**CMD**	**Male**	**Female**	**Total**
1	RA	37	56	93
2	OA	48	65	113
3	Gout	17	12	29
4	PA	9	17	29
5	JIA	10	10	20
6	Total	121	160	281
2017 Table based on gender				
S/N	CMD	Male	Female	Total
1	RA	33	62	95
2	OA	53	71	124
3	Gout	16	11	27
4	PA	11	15	26
5	JIA	8	9	17
6	Total	121	168	289
2018 Table based on gender				
S/N	CMD	Male	Female	Total
1	RA	38	49	87
2	OA	53	55	108
3	Gout	14	8	22
4	PA	13	16	29
5	JIA	9	8	17
6	Total	127	136	263
2019 Table based on gender				
S/N	CMD	Male	Female	Total
1	RA	45	69	114
2	OA	60	83	143
3	Gout	20	14	34
4	PA	12	19	31
5	JIA	11	11	22
6	Total	148	196	344
2020 Table based on gender				
S/N	CMD	Male	Female	Total
1	RA	40	62	102

2	OA	51	65	116
3	Gout	16	9	25
4	PA	8	16	24
5	JIA	9	9	18
6	Total	124	161	285

Table 3 shows the prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020 based on gender. The result revealed that common musculoskeletal disorder was more prevalence among females (56.2%) than males (43.8%).

Testing of Hypotheses

H_{01}: There is no significant difference in the prevalence of common musculoskeletal disorders of patients in Imo State from 2016 to 2020.

Table 4: Summary of Chi-square on the prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020

Year	O	E	χ^2_{Cal}	χ^2_{Crit}	df	$p-value$
2016	3472	3557.4				
2017	3589	3557.4				
2018	3414	3557.4	21.013	9.49	4	0.012
2019	3771	3557.4				
2020	3541	3557.4				
Total	17787					

From the summary of Chi-square analysis in Table 4, the statement of hypothesis 1 is rejected; implying that there is a significant difference in the prevalence of common musculoskeletal disorders of patients in Imo State from 2016 to 2020. This is because, the p-value (Sig. = 0.012) is less than 0.05 alpha level.

H_{02}: Age does not significantly influence the prevalence of common musculoskeletal disorders among patients in Imo state from 2016 to 2020.

Table 5: Summary of Chi-square on the prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020 based on age

Variable	χ^2_{Cal}	df	$p-value$	*Decision*
CMD	321.300	266	.011	Significant
Age				

From the summary of Chi-square analysis in Table 5, the statement of hypothesis 2 is rejected; implying that there is a significant difference in the prevalence of common musculoskeletal disorders of patients in Imo State in relation to their ages. This is because, the p-value (Sig. = 0.011) is less than 0.05 alpha level.

H_{03}: There is no significant difference in the prevalence of common musculoskeletal disorders of patients in Imo State in relation to their gender.

Table 6: Summary of Chi-square on the prevalence of common musculoskeletal disorders among patients in Imo State from 2016 to 2020 based on gender

Variable	χ^2_{Cal}	df	$p-value$	*Decision*
CMD	24.000	28	.682	Not Significant
Gender				

From the summary of Chi-square analysis in Table 6, the statement of hypothesis 3 is accepted; implying that there is no significant difference in the prevalence of common musculoskeletal disorders of patients in Imo State in relation to their gender. This is because, the p-value (Sig. = 0.682) is greater than 0.05 alpha level.

Discussion of Findings

The findings of the study revealed that the prevalence of common musculoskeletal disorders within the period of study (2016-2020) was 55.2% from the total of 17,787 cases. This was lower than the rate of 48.8percent from the findings of Carmen, *et al*. (2019) in Cape Town but higher than 57.0 percent in Nigeria reported by Ekechukwu *et al* (2020) [6]. The findings of this study were in tandem with the report of the CDCP (2020) that Nigeria was seen as one of the countries with highest cases of common musculoskeletal disorders in the world and remained a major target in the global control of the disease. Furthermore, the number of all common musculoskeletal disorders cases reported annually in Imo state showed a declining trend. The study revealed that the prevalence for each year during this study were as follows: 2016 (45.1%), 2017 (46.6%), 2018 (44.3%), 2019 (48.9%) and 2020 (46.0%). Within the period assessed, the prevalence was highest among in 2019 and lowest in 2018. This was not surprising as chemotherapy and awareness creation might have played some roles in the reduction of trend of disorder. It could also be that common musculoskeletal disorders cases notification decreased over the period reviewed; it is most likely that the active case detection strategy might have been responsible for the observed common musculoskeletal disorders case detection rate decline. Thus, there may be need for the common musculoskeletal disorders programme in Imo State to consider incorporating this strategy into their programme. This may be similar to the entire nation.

This finding was in line with the findings of Faloye *et al* (2020) [7] that the trends of common musculoskeletal disorders burden and prevalence revealed that the state's disease burden was related to that of the entire nation. Though, this trend was also observed in the annual national reports and a related study from other states, it should, however, stimulate further research especially as regards the quality of the microscopic centres within the DOTS services of the State and Nigeria. Kebede *et al* (2014) found that the common musculoskeletal disorders burden was lower than previously thought, which may indicate better programme performance. However, a high proportion of common musculoskeletal disorders among young people suggests that common musculoskeletal disorders is circulating in the community and that there is a need for more efforts to limit the spread of common musculoskeletal disorders. The result of this study corroborated the result of Kooffreh *et al* (2016) who determined the prevalence rate of common musculoskeletal disorders among patients attending the out-patient Department of Dr. Lawrence Henshaw Memorial Hospital, Calabar. The retrospective study was carried out

consisting of all documented cases of common musculoskeletal disorders from January 2005 to April 2015. Out of 20185 patients tested, a total of 5,004 cases of common musculoskeletal disorders were recorded within the period of this study with a prevalence rate of 24.8 percent.

The finding of the study revealed that patients between ages 15 and 40years had the highest prevalence of 13.97 percent in 2013, and 11.76 percent in 2014. Generally, 15 -40 years had the highest prevalence of 50.88 percent, followed by 41 – 66years, 67years and above with 37.79 percent and 11.34 percent respectively. It was observed that patients within the age group of 15 -40 had the highest prevalence, followed by 41 – 66 years as well as 67 years and above. This might be that patients within the age group of 15-40 years had psychological influences that made them prone to common musculoskeletal disorders. The implication is that, an adolescent girl or boy might imbibe some eating or hygiene habits that are undesirable, thereby exposing themselves to the disease. Moreover, people of this age bracket are mostly in schools where they live independent of parental control, and as such indulge in negative habits thereby exposing themselves to common musculoskeletal disorders. In addition, there was a significant difference in the prevalence of common musculoskeletal disorder cases in Imo State from 2013 – 2017 based on the ages of the patients. This showed that the prevalence of common musculoskeletal disorders was highly associated with age.

In support of the findings, Chinedu *et al* (2008) and Enwuru,*et al* (2002) reported that among 150 patients studied, 21(14.0%) were positive while the other 129 (86.0%) were negative. The adolescent-related prevalence of mycobacterium common musculoskeletal disorders showed that among those within the age bracket, 7.3 percent were more infected and they were males, while 6.7 percent were females. The age related distribution revealed the highest rate of infection 12 (80.9%) in the age 26 – 35years and the least 2 (1.3%) was in patients 46 years and above. Patients within 26-35 years of age had the highest proportion of pulmonary common musculoskeletal disorders. This is probably as a result of the fact that they are able bodied men and woman with higher exposure to the environment. It was reported in Kano, Nigeria that the highest prevalence rate of pulmonary common musculoskeletal disorders occurred more among patients within 21-30 years of age (Nwankwo *et al*. as cited in Nwachukwu, *et al*. 2009; Tinazz *et al*, 2011) [24].

From the findings of this study, male patients had the highest prevalence of 16.26 percent in 2013 and 13.78 percent in 2014. Generally, male common musculoskeletal disorders patients had the highest prevalence of 61.03 percent, and the female common musculoskeletal disorders patients with the percentage of 38.97 percent. The null hypothesis that there was no significant difference in the prevalence of common musculoskeletal disorders cases in Imo Sate from 2013 – 2017 based on the gender, of the patients was rejected. It was observed that the prevalence rate was more in males than in females in all the years considered in this study. Nguyen, *et al*. (2010) also reported that the prevalence was 5.1 times as high in men as in women in Viet Nam.

According to gender distribution, this study is similar to that of Kolappan and Goppi in Nwachukwu *et al* (2009) who reported that in Zambia, men had prevalence rates 2-4 times higher than women. However, this study is dissimilar to that of Chigbu and Iroegbu as cited in Nwachukwu *et al* (2009) which reported that females (38%) had more infection than males (28%) in Eastern Nigeria. Among the 168 confirmed cases of pulmonary common musculoskeletal disorders, 103(61.31%) and 65 (38.69%) were male and female, respectively. The male-to- female ratio was 1.2:1 and 1.9:1 in 2005 and 2006, respectively. This result is not surprising as the culture of people in Imo State demands that most outdoor activities be carried out by males than females. Such factors as lifestyle like smoking and alcoholism, environmental exposure of males than females could account for this significant difference in sex prevalence. Most of the males in Imo State are involved in commercial driving, trading, farming, timber works, more than their female counterparts and as such should have higher exposure than the female counterparts.

Conclusion

Based on the findings of the study, common musculoskeletal disorders is a pandemic disease particularly in developing countries which highly affect children and adolescents. Demographic factors such as year of prevalence, age and gender have been observed to significantly contribute to the high prevalence of this disease. Therefore, this study concludes that male patients are likely to have higher prevalence of common musculoskeletal disorders cases. It was also concluded the demographic variables (such as year, age and gender) associated with the level of prevalence of common musculoskeletal disorders among inhabitants in Imo State. There is need for concerted efforts of public health workers, to bring awareness campaigns in this State.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. The state ministry of health and other foreign partners should plan and strategies ways to implement common musculoskeletal disorders prevention programme in Imo State to reduce the high prevalence rate.
2. Prevalence of common musculoskeletal disorders cases in Imo State from 2013-2017 was very high, therefore there should be intensive sensitization programme for the public by the government through mass and social media platforms and ensure that more peer educators and counselors are trained.
3. The government should plan a gender and age specific enlightenment programme for the most at risk group of common musculoskeletal disorders since the findings revealed that common musculoskeletal disorders is age and gender related.

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