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Prevalence of low back pain among peasant farmers in a rural community in South West Nigeria

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Summary
This study is a survey conducted in Iju-Odo rural community of Ondo State in South West Nigeria to determine the prevalence and risk factors for low back pain amongst peasant farmers. Five hundred peasant farmers were selected using a multi-stage sampling technique. A questionnaire was administered which sought information on demographic characteristics, presence of low back pain in the last 12 months prior to the time of the study and the duration, severity of low back pain and its effect on farming activity. The five hundred peasant farmers that participated in this study were 276 men (55.2%) and 224 women (44.8%). Three hundred and sixty two peasant farmers (72.4% of the population) had low back pain in the last 12 months prior to the time of this study, of which two hundred and three (73.5%) were males and one hundred and fifty nine (71.0%) were females peasant farmers having low back pain. The nature of onset of low back pain was that of gradual onset in 57.5%. One hundred and eighty-eight (51.9%) respondents indicated that low back pain reduced their farming workload, while one hundred and twenty four (34.3%) respondents were prevented from going to farm because they could not walk, resulting in 675 work days being lost by one hundred and twenty one (24.2%) peasant farmers in the last one-year with a mean of 5.6 days lost. This study concluded that low back pain prevalence is high among peasant farmers, with higher prevalence in males compared with females ($P<0.05$). The prevalence also increased with age ($P<0.05$). Years of farming was found to have a significant influence on the prevalence of low back pain ($P<0.05$) with prevalence of low back pain increasing as years of farming increases. Low back pain was found to be a cause of work absenteeism in this working population.

Keywords: *Low back pain, peasant farmers, rural community, risk factors.*

Résumé
Cette étude est une enquête qui a été faite a Iju-Odo dans la communauté rurale de l'état d'Ondo au Sud-ouest du Nigeria afin de déterminer la prédominance et les facteurs de risque des douleur de dos chez les agriculteurs. 500 paysans ont été sélectionnes en utilisant la technique d'enchantillonage a étapes multiples. Un questionnaire a été distribue dont le but était de demander des informations sur les caractéristiques démographiques, la présence de courbatures du dos dans les 12 mois qui précédaient l'enquête et sa durée, la gravite des douleurs du dos et ses effets sur les activités agricoles. Parmi les cinq cents agriculteurs qui ont participe a cette étude, il y' avait 276 hommes (55,2%) et 224 femme (44,8%). 362 agriculteurs (72,4% de la population) souffraient des courbatures du dos pendant les 12 mois qui ont precede la duree de cette etude. Parmi ce groupe, 203 (73,5%) étaient des hommes et 159 (71,0%) étaient des agricultrices qui souffraient des douleurs du dos. Dans 57,5% des cas, la nature du debout des courbatures du dos était progrêssive. 188 (51,9%), des gens qui ont été questionnes ont indique que les courbature du dos ont réduit leur travaux agricoles alors que 124 (34,3%) des répondants n'ont pas pu vaquer a leurs occupations champêtres parce qu'ils ne pouvaient pas marcher. Ceci a résulte en une perte de 675 jours de travail, 21 (24,2%) l'année dernier soit une moyenne de 5,6 de jour perdus. Cette étude a conclu que la prédominance des courbatures du dos est élevée chez les agriculteurs, avec une plus grande prédominance chez les hommes compares aux femmes ($p<0,05$). La prédominance a aussi augmenté avec l'age ($p<0,05$). Il s'est avère que les années d'activités agricoles ont une influence considérable sur la prédominance des courbatures du dos ($p<0,05$) avec une prédominance de douleurs du dos qui augmente a une même proportion avec le nombre d'années d'activités agricoles. Les courbatures du dos sont une cause d'absentéisme au travail au sein de cette population.

Introduction.

Low back pain has been described as condition of pain, aches, stiffness or fatigue localized to lower back or lumbosacral region of the spine [1] and as a condition in which a patient feels an incapacitating pain at lower part of the back [2]. There is agreement in literature that low back pain is a symptom of some underlying conditions that could be due to trauma and pathology of some internal organs and soft tissues of the back [3,4,5]. Low back pain was also defined as the pain resulting from the low back, as a feeling of suffering, distress or, when extreme, agony due to an impression on the sensory nerves [6]. Low back pain may arise in the back itself or be referred there from the pelvis or abdominal viscera. This referred back pain is unrelated to spinal movement, to posture or to coughing, whereas pain arising in the spine is nearly always influenced by posture, movement and the sudden stress of coughing [7].

Low back pain is reported to be a major occupational health problem [8,9,10], with an estimated five mil-

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Table 1 : Prevalence of low back pain in peasant farmers in Iju-Odo rural community of Ondo State by age and sex.

	Male		Female			Total	
Age	n(% LBP)	n(%NLBP)	n(% LBP)	n(%NLBP)	N	n(% LBP)	n(%NLBP)
25-34	18(43.9%)	23(56.1%)	10(38.5%)	16(61.5%)	67	28(41.8%)	39(58.2%)
35-44	51(75.5%)	17(25.0%)	46(74.2%)	16(25.8%)	130	97(74.6%)	33(25.4%)
45-54	73(80.2%)	18(19.8%)	63(76.0%)	20(24.0%)	174	136(78.1%)	38(21.9%)
55-64	38(76.0%)	12(24.0%)	26(66.7%)	13(33.3%)	89	64(71.9%)	25(28.1%)
65-74	12(80.0%)	3(20.0%)	12(100.0%)	0(0%)	27	24(88.9%)	3(11.1%)
75-84	11(100.0%)	0(0%)	2(100.0%)	0(0%)	13	13(100%)	0(0%)
Total	203(73.5%)	73(26.5%)	159(71.0%)	65(29.0%)	500	362(72.4%)	138(27.6%)

X^2, male vs. female, 5.34; df=1,p<0.05
X^2, low back pain vs. age, 178.4;df=5,p<0.05
N = total number of respondents
n = number of respondents in each group
LBP = Low back pain
NLBP = No Low back Pain

lion people reported to be disabled worldwide by it, that they cannot work [11]. In Ontario, Canada between 30 percent and 50 percent of all work related disability claims were attributed to low back pain [12].

There is an accumulating body of literature on the epidemiology of low back pain, but much of this is focused on industrialized and high income countries [1,9] with very few published community based work focusing on prevalence of low back pain in Nigeria [8,9]. In the recent times about ten years back there has been a concerted effort towards highlighting the prevalence of low back pain in occupational groups and the general population [8,9].

The peasant farmer is the man having or renting a small piece of land, which he cultivates [13] and the farmers that participated in this study in Iju-odo local community in Okiti-pupa local government area of Ondo state, Western Nigeria are in this category. Farmers are particularly predisposed to having low back pain due to handling of heavy objects and assuming awkward postures with resulting low back pain causing considerable morbidity, disability and economic loss among them [14]. A previous study has shown that there is high prevalence of 66.0% for low back pain among farmers in a study carried out in Igbo-ora community [8]. Another study in the same community showed that farmers had prevalence of 46.0%, which was relatively higher than 40.0% for artisans and 34.0% for petty traders [9].

This study was carried out to determine the prevalence and the factors associated with low back pain among peasant farmers in Iju-odo local community in Okiti- pupa local government Area of Ondo State, Western Nigeria.

Subjects and methods

This study was carried out in Iju-odo local community in Okiti- pupa local government Area of Ondo State, Nigeria. It has a homogenous population of about 6,000 people who are mostly Yoruba and predominantly farmers. Iju-odo community, according to the National Population Census data has an estimated population growth rate of 2.8 % per year between 1995 to 1999.

A sample of 500 (276 males and 224 females) peasant farmers was randomly selected from 365 houses in the 4 zones using a multi-stage sampling technique. All the farmers in the selected houses participated in this study. Out of the 365 houses, 58 houses had 3 farmers living in them each, 67 houses had 2 farmers each, 207 houses had 1 farmer each while 38 houses had no farmer living in them.

A structured close-ended questionnaire originally designed in English Language was translated to Yoruba language in the Department of Linguistics, University of Ibadan. The questionnaire was administered in the native dialect of the respondents by the researcher and two trained interviewers. The questionnaire sought information on demographic characteristics, presence of low back pain in the last 12 months prior to the time of this study, duration, frequency, severity of low back pain and effect of low back pain on farming activity. Data was analyzed using descriptive statistics of mean, range and percentages and inferential statistics of chi-square.

Results

Socio-demographic characteristics

The study population was aged between 25 and 84 years with a mean age of 48 years. The age distribution is shown in Table 1. Out of the 500 peasant farmers that took part in this study, two hundred and seventy six (55.2%) were males while two hundred and twenty four (44.8.0%) were females.

Prevalence of low back pain

Three hundred and sixty two (72.4%) of the farmers that took part in the study had low back pain within 12 months

prior to the time of the study. Two hundred and three (73.5%) respondents with low back pain were males while one hundred and fifty nine (71.0%) were females as shown in Table 1. This result showed that prevalence of low back pain is higher in males than females ($P<0.05$).

Low back pain was experienced daily by 141 (39.0%), weekly by 87 (24.0%), monthly by 59 (16.3%), once in three months by 44 (12.2%) and once in 4 months or more by 31 (8.5%) peasant farmers.

Low back pain started gradually in 208 (57.5%) farmers, suddenly in 73 (20.2%) farmers while carrying out farming activities, and suddenly without explainable cause in 81 (22.3%) farmers because they were not certain of the cause of the pain.

Duration of farming and prevalence of low back pain. The years of involvement in farming ranged from 4 to 60 years with a mean farming period of 33 years as shown in Table 2. The farmers who had worked for the longest period (51 to 60 years) had the highest prevalence (100.0%) of low back pain whereas those who had worked for the shortest period (1 to 10 years) have the lowest prevalence rate (15.8%) of low back pain. The years of involvement in farming had a significant influence on prevalence of low back pain in farmers, with prevalence rate of low back pain increasing with years of involvement in farming.

Table 2 : Prevalence of low back pain by years of farming in peasant farmers in Iju-Odo rural community of Ondo State

Years	N	LBP present N(% LBP)	LBP Absent N(% LBP)
1-10	19	3(15.8%)	16(84.2 %)
11-20	66	28(42.4%)	38(57.6 %)
21-30	99	45(45.5%)	54(54.5 %)
31-40	181	164(90.6%)	17(9.4 %)
41-50	122	109(89.3%)	13(10.7 %)
51-60	13	13(100.0%)	0(0 %)

X^2, low back pain vs. years of farming , 330.4 ;df=5,p<0.05
N = number of respondents
LBP = Low back pain

Response to the question on factors causing low back pain showed that 249 (68.6%) farmers indicated that the farming they do was responsible for the low back pain they have, while 48 (13.3%) farmers thought it was due to old age. Fourty- six (12.8%) farmers were not certain of the cause of their low back pain, with 19 (5.3%) attributing their low back pain to medical conditions.

Prevalence of low back pain and activity
In Table 3, 188 (51.9%) of the respondents indicated that their low back pain actually hindered them from farm work, 124 (34.3%) were disturbed from walking, 87 (24.0%) were not able to enjoy their hobbies, 157 (43.4%) had their sleep disturbed.

Table 3: Prevalence of low back pain in peasant farmers by level of activity in Iju-Odo rural community of Ondo State.

Activity	Activity very difficult N (% AVD)	Activity not very difficult N (% AND)
Walking	124 (34.3 %)	238 (65.7 %)
Household chores	143 (39.5 %)	219 (60.5 %)
Hobby	87 (24.0 %)	275 (76.0 %)
Sleep	157 (43.4 %)	205 (56.6 %)
Working	188 (51.9%)	174 (48.1 %)

N = number of respondents
AVD = Activity Very Difficult

Discussion
Low back pain occurred in three hundred and sixty two (72.4%) farmers in this study with 203(73.5%) being males and 159 (71.0%) being females, which agrees with the result of similar studies carried out in Igbo-ora rural community [8,9] and in an urban community [10] where low back pain prevalence was higher among males than females, though other studies showed female preponderance [15,16]. This higher low back pain prevalence rate obtained for male compared with the female may be due to occupational factors [9] and probably because men are more involved in farming in the population for this study.

The prevalence rate of low back pain of 72.4% obtained for farmers in this study is comparable with 66.0% obtained for farmers in Igbo-ora rural community [8] and 85.0% obtained for farmers in an urban community [10].

The distribution of low back pain with number of years of involvement in farming showed that low back pain prevalence increases with years of involvement in farming, with years of involvement in farming having a significant influence on prevalence of low back pain ($P<0.05$). The farmers in the group with the highest years of involvement in farming presented with 100 percent prevalence of low back pain. These same sets of farmers were found to be in the older age group. The very high prevalence of low back pain observed may be attributed to the interaction between age and years of farming. The effects of age and number of years of farming on low back pain are very much related to each other and there is need to determine the interactive influence of this two variables on low back pain using multivariate analysis.

The peasant farmer may be prone to having low back because his work involves a lot of lifting activities (which is mostly done in an awkward posture) and which has been shown to be associated with low back pain [1].

The frequency of pain in this study showed that 39.0% of 362 peasant farmers that took part in this study experienced pain daily, 24.0% weekly, 16.3% monthly, 12.2% once in 3 months and 8.4% in 4 months or more. The mode of onset of low back pain among the entire peasant farmers that presented with low back pain showed that more than half the population was of gradual onset. The nature of onset could be due to chronic strain (cumulative stress syndrome) [17] because the peasant farmers use their back frequently.

One hundred and twenty four (34.3%) farmers with low back pain had difficulty in walking, 39.5% had difficulty in performing household chores, 24.0% were not able to enjoy their hobbies and 43.4% had their sleep disturbed due to low back pain. This showed that low back pain is a cause of morbidity [18]. Peasant farmers experiencing pain during activities were high in this study, and this high prevalence is expected to contribute to low productivity, temporary or permanent disability. This essentially highlights the significance of low back pain as a problem to the peasant farming population [14].

The job efficiency of 51.9% of the respondents with low back pain was reduced, resulting in 34.3% of those with low back pain been unable to attend to their farming work on various occasions. This constitutes a major concern, as they are mostly self- employed and cannot afford to stay off farming completely for a long period. One hundred and twenty one (24.2%) peasant farmers have lost a minimum of 675 days in the last one-year with a mean of 5.6 days lost. This showed that low back pain could cause work absenteeism [11]. This study concluded that low back pain prevalence is high among peasant farmers, with the risk of having low back pain significantly higher in males compared with females ($P<0.05$) and also increasing with age ($P<0.05$). Years of farming was found to have a significant influence on the prevalence of low back pain ($P<0.05$) with increase in prevalence of low back pain as years of farming increases. Low back pain was found to be a cause of work absenteeism in this group of working population.

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References

1. Volinn E. The epidemiology of low back pain in the rest of the world: a review of surveys in low and middle-income countries. Spine 1997; 22(15) 1747-1754.
2. Owoeye IO. The Human Back: Physical examination and physical assessment. J Nig. Med. Rehab. 1999; 4 (7) 1-6
3. Edgar M. Pathologies associated with lifting. Physiotherapy. 1979; 8 245-249
4. Fast A. Low back disorder: Conservative management. Archives of Physical Medicine and Rehabilitation. 1988; 69 680-891.
5. Yabuki S. Basic and Update Knowledge of Intervertebral disk herniation: Review. Fukushima Journal of Medical Science. 1999; 45 (2) 63-67.
6. Steadman's Medical Dictionary, 22nd Edition, Baltimore. The Wilkins and Wilkins Company. 1975; 909
7. Dixon A. Diagnosis of Low Back pain. New York, Grunne and Stratonnic 1976; 77-92
8. Asuzu MC. Community survey of backache in Igbo-Ora, Oyo State, Nigeria. Niger. Med. J. 1995; 28 (1) 11-14.
9. Omokhodion FO. Low back pain in a rural community in South West Nigeria. West Africa J. Med. 2002; 21 (2) 87-90.
10. Omokhodion FO. Low back pain in an urban community in South West Nigeria. Trop Doc. 2004; 34 (1) 17-20.
11. Cassidy JD, Carol LJ, Cote P. The Saskatchewan Health and Back pain Survey. Spine. 1998; 23 (17) 1860-1867.
12. Brooker AS, Frank JW, Tarasuk VS. Back pain claim rates and business cycle. Soc. Sci. and Med. 1997; 45 (3) 429-439.
13. Oxford Advanced Learners Dictionary, 5th Edition, Oxford. Oxford University Press. 1995: 853
14. Park H, Sprince NL, Whitten PS, Burmeister LF, Zwerling C. Risk factors for back pain among male farmers: analysis of Iowa Farm Family Health and Hazard Surveillance Study. Am J. Ind. Med. 2001; 40 (6): 646-654.
15. Haus TS, Schouten JS, Lean ME, Seidell JC. The prevalence of low back pain and association with body fatness, fat distribution and height. Int. J of Obesity and Related Metabolic disorders 1997; 21 (7): 600-607.
16. Thorbjornsson et al Psychological and physical risk factors associated with low back pain: a 24 year follow up among women and men in a broad range of occupations. Occup Environ Med. 1998; 55: 84-90.
17. Olaogun MOB. Pathomechanics and force analysis at the low back during physical task. J. Nig. Med. Reh. Therapist 1999; 4 (7) 7-11.
18. Webster BS, Snook SH. The cost of 1989 worker's compensation low back pain claims. Spine 1994; 19 (5) 1111-1116

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