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Research Article

STUDY TO KNOW THE FACTORS CAUSING OSTEO-PENIA IN THE COMMUNITY

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Abstract:

Osteoporosis is an important public health problem during prolonged life span. Many cases resulting in bone fragility and fractures are not diagnosed. Bone mineral density decreases physiology in both sexes, but is more common in hypoandrogenic conditions, that is, in women after menopause.

***Objective:** The aim of this study is to determine the factors causing osteo-penia in the community.*

***Study Design:** A community based Study.*

***Place and duration:** In the Department of Community Medicine, Services Institute of Medical Sciences for Six months duration from July 2019 to December 2019.*

***Methods:** A community-based bone mineral density estimation was done at department of community medicine in Services Institute of Medical Sciences, Lahore. The bone mass density of the participants was evaluated using DEXA technique and T score based on WHO were used to evaluate bone mineral density according to WHO criteria. Information about sociodemographic status was obtained with a brief medical and surgical history. Results are presented in percentages and proportions. Significance tests were used to establish relationships between variables.*

***Results:** A total of 298 people enrolled in the study. There was a significant statistic association between the prevalence of BMD and age ($p < 0.001$). Overall, 55.74% of women participated in the $T < -1.0$ score. Hysterectomized women had statistically significant low mineral densities. Since all men with osteoporosis had $BMD < -2.5$, there was a significant association between regular alcohol consumption and reduced BMD.*

***Conclusion:** A community based analysis is beneficial to recognise subclinical osteopenia in community. In this study it is supposed that the factors like advanced age, Hysterectomized women and males who consumes alcohol on daily basis causing Osteo-penia in the community.*

***Key words:** Osteoporosis, DEXA technique, T score.*

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INTRODUCTION:

There is an increase in the prevalence of degenerative diseases such as osteoporosis at present times of the current life expectancy increase. Osteoporosis is advanced disease of bones characterized by a reduction in bone mass and high risk of fracture. In osteoporosis, there is disrupted bone microarchitecture, reduced bone mineral density (BMD), and variety of proteins in the bone is transformed. By WHO; Osteoporosis is defined as a bone mineral density of <2.5 STDEV or greater below the mean maximum bone mass. Men are on par with men when women gain bread, and women become stronger. There is a serious need to focus on your health in Pakistan.

Women involved in family life often ignore their health, resulting in a decrease in bone density. In addition, hormonal factors strongly influence bone resorption; Estrogen deficiency (for example as a in cases of menopause) high bone resorption and normally reduces the accumulation of new bone formed in bones that support weight. For some gynecological reasons, women are exposed to hypo-androgenic conditions after physiological menopause or early menopause after hysterectomy. While women suffer from type 1 or postmenopausal osteoporosis, type 2 or senile osteoporosis is common in both genders after the age of 75 years. Since bone density has been found to decrease with age, more and with age many people become osteoporotic. Osteoporosis is rarely diagnosed because it is usually asymptomatic. However, the main result is a high risk of bone fracture. There is an increase in fragility of bone, and fractures occur when healthy people are not normally exposed to fracture. Typical fractures of fragility occur in the rib, spine, wrist and hip. Bone mineral density is diagnosed by (DXA) dual energy X-ray absorptiometry, where the level of bone mineral density is equal to or below the bone mineral density level of 2.5 standard deviations below the reference population of healthy adult women (30-40 years, 5.6 years). This is translated as a T-score. The purpose of this analysis is to understand the social and demographic profile of the participants to assess the

awareness of the importance of BMD prediction for the early diagnosis and treatment of osteopenia / porosis. A community based approach is a free way to provide medical services to your community and increase participation.

MATERIALS AND METHODS:

This community based Study was held in the Department of Community Medicine, Services Institute of Medical Sciences for Six months duration from July 2019 to December 2019. The density of the bone masses of the participants was evaluated using the DEXA technique, in which the thickness of the styloid process of the radius was measured. The criteria based on WHO, T score were used to examine whether the normal bone mineral density was TD concentration .0 -1.0. Osteopenia was $-2.5 < T \text{ score} < -1.0$, Osteoporosis T score was $.5 -2.5$, and severe osteoporosis and fragility fracture T score was $.2 -2.5$. It was recorded with the sociodemographic profile of the patient. History of any chronic disease Conditions or hypo-androgenic conditions were recorded using a pre-tested pre-designed form. Those who agreed to participate in the study were interviewed and their data compiled and analyzed using MS-Excel-2013. Results are presented in percentages and percentages. Significance tests were used to establish relationships between variables. Patients with a T-score <-1.0 were given nutritional recommendations, calcium supplements, and regular BMD examination.

RESULTS:

A total of 298 people were selected for the analysis. Among the participants, 39.59% of the participants were osteo-penic / porotic. 36.91% of the participants were between 30-45 years of age and more than half of them were women (Table 1). Overall, 38.09% of patients older than 75 years had a $T \leq -2.5$ (osteoporosis) score. There was strong association between the prevalence of BMD reduction and age ($p < 0.001$) (Table 2). Overall, 51.34% of the participants were women; 41.17% of them scored $-2.5 < \text{Score} T < -1.0$ (osteopenia) and 14.37% scored T score. $<- 2.5$ respectively (Table 1).

Table 1: Demographic characteristics.

Distribution of attendees on the basis of age		
	N	%
<30	55	18.46
30-45	110	36.91
46-60	67	22.48
61-75	45	15.10
>75	21	7.05
Total	298	100.00
Distribution of attendees on the basis of sex		
Male	145	48.66
Female	153	51.34
Distribution of attendees on the basis of Socio economic classification		
Below Poverty line	186	62.42
Above poverty line	112	37.58
Distribution of attendees on the basis of education		
Illiterate	89	29.87
Informal education	93	31.21
Upto class V	44	14.77
V- VIII Class	39	13.09
VIII-XII Class	18	6.04
Graduate & Post graduate	15	5.03

In total, 7 female participants underwent hysterectomy, of which 57.14% had a T < -2.5 score.

Women with BMD ($p < 0.001$) and hysterectomy had statistically significantly lower mineral densities than women holding the uterus (Table 2).

Table 2: Bone mineral density.

	> -1 (Normal)	-2.5 < T-score < -1.0 (Osteopenia)	T-score ≤ -2.5 (Osteoporosis)	Total
Distribution of patients on the basis of T score & Age				
<30	46	9	0.00	55
30-45	85	24	1.00	110
46-60	35	30	2	67
61-75	10	22	13	45
>75	4	9	8	21
	180	94	24	298
Chi sq-105.15 df-8 p-<0.0001				
Distribution of patients on the basis of sex & T score				
Males	112	31	2	145
Females	68	63	22	153
Chi sq-38.13 df-2 p-<0.0001				
Distribution of females on the basis of androgenic states				
Uterus present	99	45	2	146

Overall, 62.42% of the participants were below the poverty line (BPL), and 61.07% of the participants were illiterate or informal education (Table 1).

Nineteen male participants consumed regular alcoholic and at least 40 grams of alcohol per day for minimum three years. There was a strong association

between alcohol consumption and decreased BMD because all men with osteoporosis had BMD <-2.5 (Table 1).

DISCUSSION:

As seen in the study, more than one third of the community members were unaware of their decline in BMD. How was the initial assessment of BMD during life? There is a regular decrease in BMD with advanced age. It is expected that a large proportion of the population with low BMD will have an increase in life expectancy due to the emergence of new preventive and curative tools. Therefore, it is likely that the incidence of age-related fractures will increase in the elderly population and the health burden resulting from the fractures will inevitably increase. In addition, the female population has a higher risk of osteoporosis. It is also observed that Asian women have a higher risk of osteoporosis. In addition, hypoandrogenic conditions increase the risk of brittle bone. This may result in limited exposure to sunlight. Great importance is given to reducing BMD in women's health. In the study, it was found that 55.7% of the women scored T -1.0. In the absence of adequate preventive measures, they are likely to develop weaker bones.

It was found that 22.75% of men had a T score of -1.0. This is supported by a study by Mi Jin Kim et al., In Korea, where osteoporosis in men is a major public health problem. Evaluation of BMD in men has been neglected as the pathophysiology of men associated with osteoporosis has not been fully elucidated yet. Methods for the diagnosis of male osteoporosis have not been established. Furthermore, WHO criteria for women have been used to diagnose male osteoporosis so far. The study found a positive correlation between reduced BMD and alcohol intake supported by a Korean study indicating that chronic alcohol consumption leads to low bone density. Community-based health programs provide an opportunity to assess BMD since it has low cost, and costly research with diet and treatment counseling provided an opportunity to know the reduction of BMD.

CONCLUSION:

A community-based approach helps identify cases of subclinical osteopenia in the community. They can help raise awareness of the health of the skeleton, especially in developing countries where a large proportion of the population cannot rely on expensive research such as BMD estimates. An approach based on community programs has a greater participation for women because their health is often neglected in times of additional health expenditure. In this study it is

supposed that the factors like advanced age, Hysterectomized women and males who consumes alcohol on daily basis causing Osteo-penia in the community.

REFERENCES:

1. Akiyoshi, S., K. Kobayashi, T. Kobayashi, M. Hosonaga, D. Kitagawa, T. Ito, T. Ueno, and S. Ohno. "Anthracycline followed by trastuzumab is still one of treatment options for small tumor with node-negative HER2-positive breast cancer." *The Breast* 44 (2019): S20-S21.
2. Waltman, Nancy L., Kara M. Smith, Kevin A. Kupzyk, Joan M. Lappe, Lynn R. Mack, and Laura D. Bilek. "Contemporary Approaches to Recruitment of Postmenopausal for a Community-Based Study." *Nursing research* (2019).
3. Solimeo, S.L., Nguyen, V.T., Edmonds, S.W., Lou, Y., Roblin, D.W., Saag, K.G., Cram, P. and Wolinsky, F.D., 2019. Sex differences in osteoporosis self-efficacy among community-residing older adults presenting for DXA. *Osteoporosis International*, pp.1-9.
4. Brodrick, Brooks, Jessica Harper, Erin Van Enkevort, and Carrie McAdams. "Treatment utilization and medical problems in a community sample of adult women with anorexia nervosa." *bioRxiv* (2019): 547133.
5. Kobayashi, Kazuyoshi, Shiro Imagama, Kei Ando, Masaaki Machino, Kyotaro Ota, Satoshi Tanaka, Masayoshi Morozumi et al. "Epidemiology and effect on physical function of osteosarcopenia in community-dwelling elderly people in Japan." *Modern rheumatology* just-accepted (2019): 1-15.
6. Chinda, Daisuke, Tadashi Shimoyama, Kaori Sawada, Chikara Iino, Hirotake Sakuraba, Shigeyuki Nakaji, and Shinsaku Fukuda. "Lifestyle Factors Rather Than Helicobacter pylori Infection or Estradiol Level are Associated With Osteopenia in Japanese Men." *American journal of men's health* 13, no. 2 (2019): 1557988319848219.
7. Robinson, L., Aldridge, V.K., Clark, E.M., Misra, M. and Micali, N., 2019. Bone health in adult women with ED: A longitudinal community-based study. *Journal of psychosomatic research*, 116, pp.115-122.
8. Yu, P.A., Hsu, W.H., Hsu, W.B., Kuo, L.T., Lin, Z.R., Shen, W.J. and Hsu, R.W.W., 2019. The effects of high impact exercise intervention on bone mineral density, physical fitness, and quality of life in postmenopausal women with osteopenia:

- A retrospective cohort study. *Medicine*, 98(11), p.e14898.
9. KAZI, MA, FE ABDULLAH, Q. ABBAS, and S. BAWANY. "Assessment of Osteoporosis and Osteopenia amongst Menopausal Women of North Nazimabad, Karachi, Pakistan." *Sindh University Research Journal-SURJ (Science Series)* 51, no. 01 (2019): 147-150.
 10. Machado, Ketty LLL, Diogo S. Domiciano, Luana G. Machado, Jaqueline B. Lopes, Camille P. Figueiredo, Valeria F. Caparbo, Liliam Takayama, Paulo R. Menezes, and Rosa MR Pereira. "Risk Factors for Low Muscle Mass in a Population-based Prospective Cohort of Brazilian Community-dwelling Older Women: The São Paulo Ageing & Health (SPAH) Study." *Journal of Clinical Densitometry* (2019).
 11. Moriwaki, Kenta, Hiromi Matsumoto, Shinji Tanishima, Chika Tanimura, Mari Osaki, Hideki Nagashima, and Hiroshi Hagino. "Association of serum bone-and muscle-derived factors with age, sex, body composition, and physical function in community-dwelling middle-aged and elderly adults: a cross-sectional study." *BMC musculoskeletal disorders* 20, no. 1 (2019): 276.
 12. de Moura, T.G., de Almeida Nagata, C. and Garcia, P.A., 2019. The influence of isokinetic peak torque and muscular power on the functional performance of active and inactive community-dwelling elderly: a cross-sectional study. *Brazilian journal of physical therapy*.
 13. Zeng, Bo, Zhiwen Lai, Lijin Sun, Zhongbao Zhang, Jianhua Yang, Zaixin Li, Jie Lin, and Zhi Zhang. "Structural and functional profiles of the gut microbial community in polycystic ovary syndrome with insulin resistance (IR-PCOS): a pilot study." *Research in microbiology* 170, no. 1 (2019): 43-52.
 14. Zibdawi, Lara, Demetrios Simos, Shaqil Kassam, Amira Rana, Farrah Kassam, and Yasmin Rahim. "Clinical practice patterns on the use of adjuvant bisphosphonate for early breast cancer: A Canadian perspective." (2019): e12002-e12002.
 15. Zadeh, Ahmad Fakhri, Mohammad Ghasem Hanafi, Ali Kiasat, and Marjan Mousavi. "Evaluation of the tibial cortical thickness accuracy in osteoporosis diagnosis in comparison with dual energy X-ray absorptiometry." *Journal of Family Medicine and Primary Care* 8, no. 2 (2019): 523.