Effectiveness of an Intervention Oriented Program on the Prognosis of Osteopenia among Women at Private Clinics in Baghdad City

فاعلية تداخل برنامج إجرائي موجه على تقدم مرض هشاشة العظام بين النساء في العيادات الخاصة في مدينة بغداد

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المستخلص:
الهدف: لتحديد فاعلية تداخل برنامج إجرائي موجه على تقدم مرض هشاشة العظام بين النساء في العيادات الخاصة في مدينة بغداد.
المنهجية: إستخدمت دراسة ذات تصميم طويل الأمد. حيث تم إختيار عينه غير عشوائية (غرضيه) مكونة من (25) إمرأه من اللواتي لديهن كثافة معدنية للعظام ما بين (-1 إلى -2.5) درجة، وقد تم جمع البيانات من خلال إستخدام الإستمارة الإستبيانية المصممة والمقابلة المباشرة لكل إمرأة مشمولة بالدراسة والتي إستغرقت حوالي 20 دقيقة مع كل إمرأة.
النتائج: أظهرت نتائج الدراسة أن هناك تحسن جيد على كثافة العظام بعد تطبيق برنامج التداخل الموجهة على عينة الدراسة (النساء). بدأ هذا التحسن في الفترة الاولى ، وأصبح واضحا في الفترة الثانية ، وفي الفترة الثالثة أصبح التحسن ممتازا في كلا القدمين اليمنى واليسرى.
التوصيات: توصي الدراسة بـأن الكشف المبكر عن مرض هشاشة العظام عند النساء مهم جدا لمنع أو على الأقل تأخير ظهور الأعراض، كما إن تنفيذ جميع مراحل البرنامج الإجرائي:الرياضي،والغذائي،والدوائي له فوائد إيجابية على كثافة المعادن في العظام، كما أوصت الدراسة إنه من المهم جدا زيادة الوعي الصحي حول مرض هشاشة العظام من خلال مختلف القنوات الإعلامية مثل الإذاعة والتلفزيون والصحف والمجلات. كما إنه من المهم جدا تنفيذ برنامج الكشف المبكر عن البدانة عند النساء في جميع مراكز الرعاية الصحية الأولية على الصعيد الوطني.

Abstract:
Objective: To determine the effectiveness of an Intervention Oriented program on the prognosis of Osteopenia among Women at Private clinics in Baghdad City.

Methodology: A longitudinal design. A purposive "non probability" sample of (25) Women who have bone mineral density (BMD) T- test between (-1 to -2.5). The data are collected through the utilization of a constructed questionnaire and by means of interview with each client who is involved in the study. Each interview takes approximately (20) minutes.

Results: The study showed that there is a good improvement in bone density accord after application of an intervention oriented program on the study sample (women). This improvement began in the first period, and became clear in the second period; in the third period the improvement became excellent in the each foot right and left.

Recommendation: The study recommends that early detection of osteopenia in women is very important to prevent or at least delay the onset of symptoms, and the implementation of all parts of an intervention oriented program sports, nutrition, and pharmacology have positive benefits on bone mineral density, as recommended by the study it's very important to increase the health awareness about osteopenia throughout various media channels such as radio, television, newspapers and magazines. And it's very important application of screening program for effective strategies of the early detection of obesity at each main primary health care center in health sector nationwide.

Key word: Effectiveness, Intervention Oriented Program, Osteopenia, Prognosis

Introduction

Osteopenia among women is a major public health problem and it can be prevented or at least decreased in severity if proper actions are taken, it is considered one of the most common skeletal disorders in elderly. The bone loss process can occur without symptoms and the individual feels fine until a fracture occurs; Nearly 1 in 4 hip fractures in women will die within a year of their fracture. Vertebral fractures are also linked to an increased risk of mortality as a result of complications of the fracture treated conservatively or surgically. Like osteoporosis, osteopenia occurs more frequently in post-menopausal women as a result of the loss of estrogen hormone. It can be increases by lifestyle risk factors such as lack of exercise, excess of alcohol intake, smoking or use of glucocorticoid medications for a long time. It can also be a result of exposure to radiation [1].

Osteopenia was defined by the World Health Organization (WHO) that condition would mean a bone density that is one standard deviation below that of an average 30-year-old white woman, osteoporosis as bone density 2.5 standard deviations or more below that 30-year old, previously it had been used only in cases where elderly patients had fractured or broken a bone. Fracture is the medical word for any kind of break in a bone and is not meant to imply that the bone is merely cracked. Fractures are the most significant consequences of osteopenia or osteoporosis and a major cause which lead to deformity, pain, disability, and mortality in older adults [2].

In view of growing awareness of the need to prevent and treat osteopenia, it is very important to apply the strategies of the community health nursing which are preventive rather than curative, the purpose of study effects of an intervention oriented program is to prevent of osteopenia in women with low bone mineral density. Childhood and adolescence are a proper period to improve bone mass through application of healthy life style whoever osteopenia prevention should begin in childhood, But it wouldn't stop there. Whatever your age, the habits you adopt now can affect your bone health for the rest of your life [3].

Due to unhealthy changes of population lifestyle as well as entry of technology more people especially women became have sedentary life style which mean laziness and low activity which lead to early present of osteopenia and osteoporosis, by contrast spending appropriate time to do sport activity, and household chores associated with a significantly reduced or delay the onset of osteopenia [4].

Moreover, it became to be finding athletic, diet, and drugs program very important to help women to avoid progresses of osteopenia or osteoporosis, or at least prevention of complication. Since a few years ago the women had been taken treatment of osteopenia or osteoporosis when start of postmenopausal period randomly. now after distribute of (bone mineral density devices) in many regions, early detection and diagnosis of osteopenia is very important to prevent or delay symptoms and minimize risk of fractures throughout application of an intervention oriented program and measure the effectiveness on prognosis of disease. Poor compliance is one of the most important treatment problems. Studies have shown

that only 40% of patients take treatment for more than one year. At two years, only 20% of patients are still taking their medication [5].

Methodology of the study

A longitudinal design is carried out in order to achieve the objectives of the study by using the evaluation technique in private clinics from November 16th, 2014 to June 15th, 2015 in order to evaluate an Intervention Oriented Program on Prognosis of Osteopenia in women .The present study is conducted on women clients who are visiting private Orthopaedic clinics in Baghdad City .A purposive "non probability" sample of (25) Women who have bone mineral density (BMD) test between (-1 to -2.5) diagnosed with osteopenia .

To make the instrument valid measure, it is presented to a panel of (18) experts in the different fields A Purposive sample of (10) individuals is selected of women of prognosis of osteopenia, this preliminary study is conducted for the period of January 18th to February 1st 2015.

The data are collected through the utilization of a constructed questionnaire and by means of interview with each client who is involved in the study. Each interview takes approximately (20) minutes.

The data collection process starts in February 2nd 2015 to February22nd 2015. The results of the review of the questionnaire by the experts reveal that all of the experts have agreed upon the questionnaire's items, as being clear and adequate for the measurement of the phenomena underlying the study Minor changes are performed on few items, such as simple rewording their of the text. Such changes are made according to the expert's suggestions.

Results:

Table (1): Normality test for the studied improvement measurement scales at Different Periods of Intervention Oriented Program

One-Sample Kolmogorov-Smirnov Test					
Site	**Statistics**	**Pre**	**Post1**	**Post2**	**Post3**
Left foot	**No.**	**25**	**25**	**25**	**25**
	Kolmogorov-Smirnov Z	**0.674**	**0.835**	**0.95**	**0.927**
	Asymp. Sig. (2-tailed)	**0.754**	**0.488**	**0.327**	**0.357**
	Tests distribution are :	**Test distribution are Normal since all of the calculated P-values are accounted (P>0.05)**			
Right foot	**No.**	**25**	**25**	**25**	**25**
	Kolmogorov-Smirnov Z	**0.893**	**1.143**	**0.959**	**0.632**
	Asymp. Sig. (2-tailed)	**0.402**	**0.147**	**0.316**	**0.82**
	Tests distribution are :	**Test distribution are Normal since all of the calculated P-values are accounted (P>0.05)**			

No.: Number, Sig: Signification, P: Probability level

The results show that the test distribution is normal for the studied parameter (Improvement of Measurement Scales) pre and post treatments for three periods in left and right feet for the studied group.

Table (2): Summary Statistics for the studied Improvements at Different Sites and at Pre and Post Periods

Periods	Sites	No.	Mean	S.D.	S.E.
Pre test	Left foot	25	-1.944	0.27	0.05
	Right foot	25	-1.980	0.24	0.05
Post test I	Left foot	25	-1.928	0.22	0.04
	Right foot	25	-1.952	0.21	0.04
Post test II	Left foot	25	-1.808	0.19	0.04
	Right foot	25	-1.832	0.19	0.04
Post test III	Left foot	25	-1.720	0.18	0.04
	Right foot	25	-1.736	0.17	0.03

No.: Number, Sig: Signification, P: Probability level

The results indicate that good improvements had been occurred, on increasing represented at the periods post treatment for studied women as well as standard deviation and standard error of mean values indicating that all patients are concerned with the improvement process.

Table (3): Matched Paired t-Test between Pre Period and different posts periods in the left and right sites

Site	Comparisons By:	Matched Paired	Paired Diff. Mean	M.P. t-test	d.f.	Sig. (2-tailed)	C.S. (*)
Left	Base Line Pre Period	Pre - Post1	-0.016	-0.811	24	0.425	NS
		Pre - Post2	-0.136	-3.933	24	0.001	HS
		Pre - Post3	-0.224	-5.172	24	0.000	HS
	Sequentially Periods	Post1- Post2	-0.12	-5.765	24	0.000	HS
		Post1- Post3	-0.21	-7.076	24	0.000	HS
		Post2- Post3	-0.09	-7.333	24	0.000	HS
Right	Base Line Pre Period	Pre - Post1	-0.028	-1.572	24	0.129	NS
		Pre - Post2	-0.148	-5.450	24	0.000	HS
		Pre - Post3	-0.244	-7.239	24	0.000	HS
	Sequentially Periods	Post1- Post2	-0.12	-6.573	24	0.000	HS
		Post1- Post3	-0.22	-8.433	24	0.000	HS
		Post2- Post3	-0.10	-6.532	24	0.000	HS

(*)HS : Highly Significant. at P <0.01; S : Significant. at P<0.05, M . P. t-test (Matched Paired t-test), df: Degree of freedom, CS: comparative Significant, NS: Not Significant

Results show highly significant differences at P<0.01 with the improvements between pre period and the second and third posts periods, while no significant at P>0.05 are counted between pre period and the first post period.

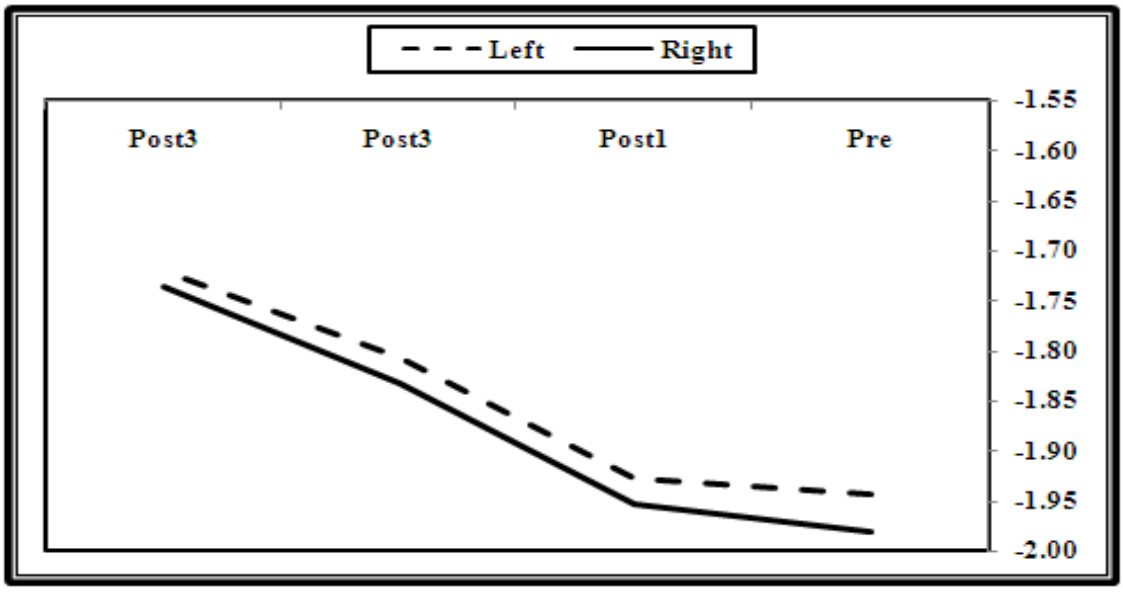

Figure (1): Line Chart for mean values along pre and different contrasts of post periods for left and right sites

Table (4): Descriptive Statistics for the Studied Differences among Different Periods with Comparisons Significant

Site Diff.	Groups	No.	M	SD	SE	Min.	Max.	Levene test		ANOVA test	
								L	P-value	F	P-value
Left Foot	Pre - Post1	25	-0.02	0.10	0.02	-0.2	0.2	6.281	0.003 HS	9.448	0.000 HS
	Pre - Post2	25	-0.14	0.17	0.03	-0.4	0.3				
	Pre - Post3	25	-0.22	0.22	0.04	-0.6	0.3				
Right foot	Pre - Post1	25	-0.03	0.09	0.02	-0.2	0.2	3.142	0.049 S	16.04	0.000 HS
	Pre - Post2	25	-0.15	0.14	0.03	-0.4	0.2				
	Pre - Post3	25	-0.24	0.17	0.03	-0.5	0.2				

(*) **HS: Highly Sig. at P<0.01, No. Number, M: Mean, SD: standard Deviation, SE: standard Error, Min: Minimum, Max: Marimum, F:F. Statistics, P: Probability level**

Results of testing for equality of means through applying (ANOVA) test as well as Levene test for testing equality of variances show highly significant differences at P<0.01 which are obtained either for left or right foot.

Discussion

The results of table (1) has abbreviated that the sample is normally distributed and has been derived from the sample population of osteopenia. Supportive evidence to such finding that indicates all measured variables was normally distributed [6].

Another result in Table (2) indicates that the good improvements has been occurred after taking an intervention oriented program on study sample (Women) with osteopenia and that is a clear in post-test1, post-test2 and post-test3 respectively. Supportive evidence to such finding is that women participants in an osteoporosis program demonstrate significantly higher improvements after completing the program [7].

Table (3) and Figure (1) reveals no significant at P>0.05 are accounted between pre-test and the post-test1, but there is an excellent improvements had been among differences of each two pairs accounted (Sequentially), pre-test and post-test2, pre-test and post-test3, post-test1 and post-test2, , post-test1 and post-test3, post-test2 and post-test3. Supportive evidence to such finding reveals that only a few changes comparing among variables between pre and post1 intervention program proved to be statistically significant [8].

The result in Table (4) depicts summary differences outcomes concerning respect of women's with Osteopnia, the differences that evaluated between pre test and in each contrast of post tests in left, and right feet. at the end of the program ,There is a good improvement in both feet right and left with an advantage in the improvement in the left foot over the right foot. Supportive evidence to such finding is that the Osteoactive rehabilitation program is feasible and achieved progression of training level, had high adherence, and has no adverse events. Positive improvements are established in lower extremity function and femoral trochanter BMD bone meniral density [9].

Recommendation:

1. Early detection of osteopenia is very Important to prevent or at least delay symptom.
2. Implementation of all parts of an intervention oriented program: sport, diet, and medication has benefit on bone mineral density for women.
3. Increase health awareness about osteopenia throughout multiple media facilities, such as radio, Television, newspapers and magazines.
4. Development and implementation of effective strategies for the detection and treatment of obesity among adult clients at out-patient clinics.
5. Construction and implementation of health education programs regarding healthy life styles and physical activity.

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