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**Al- Quds University**

**'Awareness and Prevalence of Osteoporosis among  
' Postmenopausal Women in Bethlehem District.**

**By**

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Postmenopausal Women in Bethlehem District.**

**By**

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**B.Sc.: Medical Technology from Al-Quds University- Palestine.**

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**January, 2004**

## ENDORSEMENT

### Awareness and Prevalence of Osteoporosis among Postmenopausal Women in Bethlehem District.

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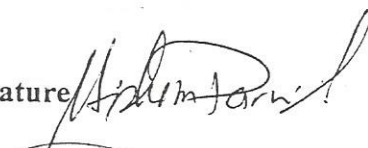
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Al-Quds University

2004

## ***Declaration***

I Certify that this thesis submitted for the degree of Master in the result of my own research, except where otherwise acknowledged, and that this thesis (or any part of the same) has not been submitted for a higher degree to any other university or institution.

*Intissar M. Issa.*

*January, 2004.*

## ***DEDICATION***

**I would like to dedicate this work with deep love to my mother, my husband Ammar Jayyosi and my daughters (Aya, Batool and Mariam) for their endless love and support.**

**Intissar Issa.**

## *Acknowledgment*

I would like to express my great acknowledgment to **all women** who contributed with their scans and for their participation to make this study possible. Many thanks to **Dr. Hasan Abu Lebda** director of PCBS for his valuable assistant. Special acknowledgment to **Dr. Aysha Reifai** for her continuous support. I would like to express my respect and appreciation to **Dr. Ahmad Masslamani** director of the Health Work Committees, Palestine for his financial contribution in payment of the costs of scanning tests. I would like to thank **Dr. Mohamad Shaheen, Mr. Hassan Abu Hassan, and Mr. Hasan Obeid** for their efforts in reviewing the questionnaire. My deep thanks to Bethlehem Arab Society for Rehabilitation in Beit Jala for its valuable financial contribution in this project, and **Dr. Saba** director of Palestinian osteoporosis prevention society for his cooperation and encouragement to make this study a reality. I am grateful to all data collection team ( **Neda Qessi, Maysa Alhinesh, Amani Sharabati, Inas Jebrel, Affifa Al-asa, Suha faisal and Duaa Zugher** ) for their great help in this project. Especial acknowledgement to **Dr. Hisham Darwish** my academic supervisor for his great encouragement and endless support. Finally, I would like to express my deep thanks, appreciation to **my family** especially my husband for their endless support during my study.

## *Abstract*

This investigation was pursued to determine the prevalence of osteoporosis and assess the awareness about the disease among postmenopausal Bethlehemites women in the West Bank region of Palestine in order to provide the baseline data for an effective action plan on prevention and treatment. The data collection was obtained by cross-sectional study which includes personal interviews at household using carefully designed and pretested questionnaire and then recalling subjects for bone mineral density (BMD) measurement using dual X-ray absorptometry (DEXA). Subjects from urban, rural and refugee camps communities are randomly selected using national population maps. The participants include 505 postmenopausal women from the central Bethlehem district ( $\geq 49$  years of age). BMD measurements were done for the lumbar spine and two femoral sites (neck and total hip). The response rate for BMD assessment was 88.8% and the mean age of subjects was 61.6 years. World health organization (WHO) guidelines for osteoporosis diagnosis were adopted in data analysis. The results indicate that the prevalence of osteoporosis, based on measurements of BMD at the femoral neck, total hip and spine is 24%, 14% and 29.7% respectively, while the prevalence of osteopenia at the same sites is 47.9%, 46% and 40.4% respectively. The prevalence of osteoporosis was under estimated by using Lebanese and Saudian reference data in T score calculation. The results showed that the effect of age ( $\geq 49$  years) on BMD ranged from 0.48% to 0.67% decline per year, while the effect of number of years after menopause ranged from 0.32-0.53% decline per year immediately after menopause. The effect of physiques properties on

BMD ranged from 0.14% to 0.22% gain per Kg and from 0.47 to 0.6% gain per each unit in BMI, and from 1.8% to 2% gain per 5 cm increase in body height. The results also indicate that 35.6% of osteoporotic women were aware that they may have had osteoporosis before the screening was done, while about 12% of the participants was aware about osteoporosis. Most of them lack adequate knowledge about risk factors, prevention and diagnosis of osteoporosis. The majority of participants are not taking adequate measures to prevent and treatment osteoporosis as consuming recommended daily calcium or taking food supplements. This investigation, the first of its kind in the West Bank, represents a pilot study to assess the status of osteoporosis in the whole population as part of an ongoing effort to assess the broad national occurrence and distribution of the disease. Clearly, the present data indicates the urgent need of a comprehensive program to control the occurrence of the disease in the population through a national campaign to raise the public awareness about osteoporosis and the various risk factors that contribute to its development.

بسم الله الرحمن الرحيم

## ملخص

### دراسة حول مدى الوعي و كذلك انتشار مرض هشاشة العظام في محافظة بيت لحم.

هشاشة العظام هو مرض يصيب الهيكل العظمي للإنسان و يتلخص في حدوث نقص في كثافة العظم و كتلته

نتيجة لنقص الكالسيوم في الجسم، حيث تصبح العظام هشة لينة و سهلة الكسر. و هذا المرض له العديد من

التأثيرات السلبية على الصحة العامة من حيث عدد ألامصابات المرتفعة و الوفيات و كذلك التكاليف الباهضة على

مستوى الفرد و البلد. إضافة إلى نوعية الحياة التي يعيشها الشخص المصاب، فعالبا ما يكون عنده إعاقة و اعتماد

على الآخرين و ألام في الظهر و الكتفين و انحناء في الظهر.

هذه الدراسة هي دراسة وصفية لمدى الوعي و مدى انتشار مرض هشاشة العظام حيث استخدم الاستبيان

مع المقابلة كأداة لجمع المعلومات المستخدمة في قياس مدى وعي السيدات في سن ما بعد انقطاع الدورة ( أكبر من

٤٩ سنة). ٥٦٩ سيدة من مدن ، قرى و مخيمات محافظة بيت لحم اخترن بطريقة عشوائية باستخدام

الخرائط السكانية بمساعدة مركز الإحصاء الفلسطيني، حيث تمت دعوتهم لعمل فحص مجاني لكثافة عظامهم في

المركز الفلسطيني لتشخيص هشاشة العظام التابع للجمعية العربية للتأهيل - بيت جالا حيث قامت لجان العمل

الصحي بتغطية جزء من تكاليف هذا الفحص. فكانت نسبة التجاوب ٨٨,٨% أي أن ٥٠٥ سيدات قمن بعمل

الفحص للعمود الفقري و كذلك للحوض و أعلى الفخذ و قد استخدم برنامج SPSS في تحليل النتائج.

كانت نسبة انتشار المرض ٤٠,٦% في أي مكان، ٢٩,٧% في العمود الفقري و ١٤% في الحوض حسب

معايير منظمة الصحة العالمية التي تعتمد على مقارنة النتائج بمعدل كثافة العظام لدى النساء القوقازيات ولكن بمقارنة

نتائج السيدات بمعدل كثافة العظام لدى النساء اللبنانيات و السعوديات فان معدل انتشار المرض يكون أقل .

أكدت الدراسة انه كلما زاد السن و زادت الفترة التي انقطعت فيها الدورة زادت الاصابه بهشاشة العظام، و

كذلك أوجدت الدراسة أن هنالك ارتباطا بين أالاصابة بهشاشة العظام مع مستوى التعليم، و كذلك مع الوزن و

الطول. و الجديد الذي أظهرته هذه الدراسة أن كثافة العظام تزيد بزيادة الوعي بزيادة معتمدة إحصائيا. من ناحية

أخرى أظهرت الدراسة أن نسبة الوعي بمرض هشاشة العظام لم تتجاوز ١٢% وهذه نسبة متدنية نوعا ما و لكن

الملفت في هذه الدراسة الذي ظهر من خلال الاستبيان أن هناك نسبة جيدة تعرف بأهمية الرياضة و الكلس للعظام

و مع ذلك فان نسبة صغيرة جدا لا تتجاوز ١٠% تتناول كمية الحليب الموصى بها يوميا، ١٩% تتناول حبوب

٥

كلس بينما ٠,٩% تتناول الهرمون الأنثوي ألا ستروجين ( حيث معظمهن ممن أزلن الرحم).

هذه الدراسة هي الأولى من نوعها في الضفة الغربية حيث تظهر الأهمية القصوى لرفع مستوى الوعي لدى عامة

الشعب حول مرض هشاشة العظام من خلال الإعلانات و البرامج التلفزيونية و كذلك مساعدة و تسهيل وصول

السيدات في سن ما بعد انقطاع الدورة لعمل فحص لكثافة عظامهن لمعرفة أن كن عرضة للإصابة بهشاشة العظام

أم لا و لا ننسى أهمية عمل مشروع لدعم الحليب و إدخاله في البرنامج المدرسي.

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### *List of abbreviations*

1. BMD: Bone mineral density.
2. BMC: Bone mineral content.
3. WHO: World health organization
4. CV: Coefficient of variation
5. SD: Standard deviation
6. EFO: European foundation for osteoporosis
7. DEXA: Dual energy X-ray absorptiometry
8. NIS: New Israeli shekel
9. PCBS: Palestinian Central Bureau of Statistic.
10. KOS: Knowledge score on osteoporosis.
11. PA spine: Studies of the lumbar spine by DEXA performed by the passage of photon energy from the posterior to anterior direction and probably characterized as PA spine.

## *List of Definitions*

**Awareness:** what do they know, believe, think about the signs, causes, and

Prevention of osteoporosis. The subjects were divided according to the following scale:

< 40% correct answers is poor (unaware),

40-69% correct answers is reasonable, and

70-100% correct answers is good (aware). ( Verkevisser, et al., 1991).

**Validity:** means that the conclusions are true. ( Verkevisser, et al., 1991).

**Content Validity:** a subjective judgment of whether a measure adequate represents a concept. (Singleton and Strants, 1999).

**Reliability:** means that someone else using the same method in the same condition should be able to obtain the same results. ( Verkevisser, et al., 1991).

**Accessible population:** part of the target population that is available to the researcher, selected to represent the population of interest. ( Livengston and Abbey, 1982 ).

**Inclusion criteria:** are characteristics that each sample element must possess to be included in the sample.( Livengston and Abbey, 1982 ).