PREVENTING FRACTURES OSTEOPOROSIS FOLLOW UP STRATEGIES IN PRIMARY CARE

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Table of contents

List of table:

Abstract:

Fractures are more likely to occur in people with osteoporosis, a chronic illness that causes bone loss. Constant pain, limited mobility, incapacity, and loss of independence are just some of the ways in which osteoporosis can severely compromise quality of life and health. This study aimed to identify the most important strategies for preventing fractures and following up on osteoporosis in primary care, by identifying the causes of osteoporosis, the bad habits that lead to it, and methods of preventing osteoporosis, by asking workers in the field of primary care. The research reached the most common Symptoms of osteoporosis The patient feels back pain, caused by a fracture or collapse of the bones in the spine, and The patient's bone breaks much more easily than expected. The research also found that the people most at risk of osteoporosis are Men and women with Small bodies tend to be more at risk because they may have less bone mass to draw from as they age, and so were the bad habits that increase the risk of osteoporosis. Excessive weight gain for men and women. It also turned out that the most important effective prevention strategies for osteoporosis was Expanding individuals' awareness to understand the importance of bone health throughout their lives.

Keywords: Preventing Fractures, Osteoporosis, Strategies in Primary Care

> **Introduction:**

Osteoporosis affects people of all racial and ethnic backgrounds and sexes equally. As the population ages, so does the occurrence of this disease. It's a stealthy killer that strikes adults at any age, but especially after menopause when estrogen levels drop. Fractures and associated consequences are an inevitable outcome of osteoporosis, with spinal, hip, and wrist fractures being the most prevalent sites of injury. The risk of dying within a year after a hip fracture ranges from 8.4 percent to 36 percent. Limitations in physical activity as a result of postural alterations also have an adverse effect on quality of life (Chandran et al.,2021).

Low bone mineral density (BMD) and micro-architectural degeneration of bone tissue characterize osteoporosis, causing a loss of bone strength, an increase in bone fragility, and an increased risk of fracture. Fractures due to osteoporosis typically occur when people with weak bones fall from a standing position or lower. Bone mineral density (BMD) can be accurately assessed by dual energy X-ray absorptiometry (DXA) scanning of the axial skeleton (Bernabei et al.,2014).

T-scores, which measure how many standard deviations (SDs) a person's BMD is above or below that of young, healthy people of the same sex, are commonly used to report BMD results. T-score is the basis for the WHO's definition of osteoporosis and osteopenia. Although bone mineral density (BMD) is one component in determining an individual's risk of fracture,

the PBS uses the WHO T-score range for osteoporosis to establish eligibility for subsidy on osteoporosis drugs. Fifty percent of patients with normal or osteopenic T-scores will suffer a minor trauma fracture, either for the first time or again in the future (Sabri et al.,2023).

The good news is that there are therapies and preventative strategies available to deal with this problem. The key to preventing future bone loss or boosting bone density in those with osteoporosis is an early diagnosis of bone loss and assessment of fracture risk. Every medical professional, but notably gynecologists, has a role to play in the prevention, diagnosis, and treatment of osteoporosis. The purpose of this research is to offer advice for avoiding broken bones. Strategies for Monitoring Osteoporosis Patients in Primary Care

➢ **Main body:**

• **Medical impact:**

The most important clinical outcomes of osteoporosis are fractures and associated consequences. Vertebral, hip, and distal forearm fractures account for the majority of all breaks. Even when severe trauma is the underlying cause, insufficient bone mass is a major contributor to fractures in the elderly. Any new fracture at a major bone site in an adult over the age of 50 should be taken seriously as evidence of osteoporosis and should prompt evaluation and treatment. The most prominent variations involve the fingers, toes, face, and skull, and they are caused by trauma rather than weak bones. Complete healing is possible after a fracture, but prolonged

pain, incapacity, and even death are also possible outcomes (Compston et al.,2013).

In addition to a 2.5-fold greater risk of future fractures, hip fractures are associated with an 8-36% extra mortality within 1 year, with a higher mortality in men than in women. Twenty percent of those who suffer a hip fracture will need long-term nursing home care, and only forty percent will achieve their full level of independence before the injury. Most vertebral fractures don't present any symptoms at first, but they can lead to discomfort, disability, deformity, and even death. Kyphosis can cause postural alterations that make it difficult to perform daily tasks like bending and reaching (LeBoff et al.,2022).

Fractures of the lumbar spine can affect the structure of the abdomen, causing symptoms such as constipation, abdominal pain, distention, decreased appetite, and premature satiety; thoracic fractures can cause restrictive lung disease. Fractures of the vertebrae, whether they are clinically obvious or not, are strong predictors of future fracture risk, increasing it by as much as five times for a second vertebral fracture and by two to three times for fractures at other sites. Fractures of the wrist are not as debilitating as those of the hip or spine, but they can nevertheless impede on daily life in various ways (Yang et al.,2020).

Fractures of the pelvis and humerus also contribute to the increased morbidity and mortality. Depression and loss of self-esteem are two of the most common psychosocial symptoms associated with fractures. Patients

often deal with pain, physical limitations, and changes to their routine and appearance (LeBoff et al.,2022).

- **Basic pathophysiology:**

An older person's bone mass is equivalent to their peak bone mass at age 18–25 minus any bone loss that has occurred after then. Nutrition, endocrine state, physical activity, and health during adolescence all play a role in determining peak bone mass, but genetics play the largest role.

The continuous removal and replacement of older bone with new bone via the process of bone remodeling could be thought of as a preventative maintenance program for a healthy skeleton. When this equilibrium is disrupted, leading to more bone removal than replacement, bone loss occurs. The imbalance is a natural consequence of aging and the menopause. The rate of bone remodeling rises during menopause, exacerbating the effect of the remodeling imbalance. The disorganization of the skeleton caused by bone loss makes fractures more likely (Bernatz et al.,2019).

The results of bone loss on cancellous bone are depicted in Figure 1. Bone mass is drastically decreased and structural integrity is compromised when individual trabecular plates are removed. The risk of bone fracture and fragility is thought to rise with the rate of bone remodeling (as indicated by biochemical indicators of bone resorption or creation) (Bynum et al.,2016).
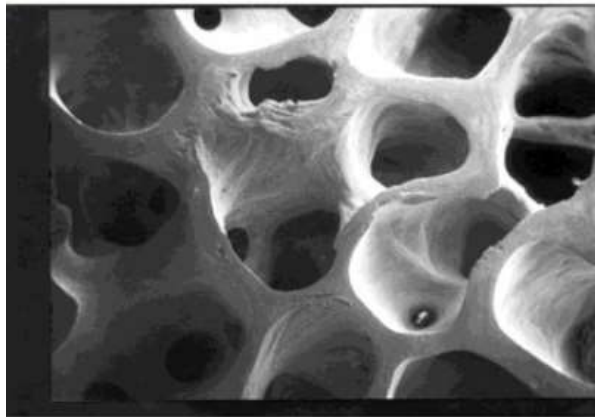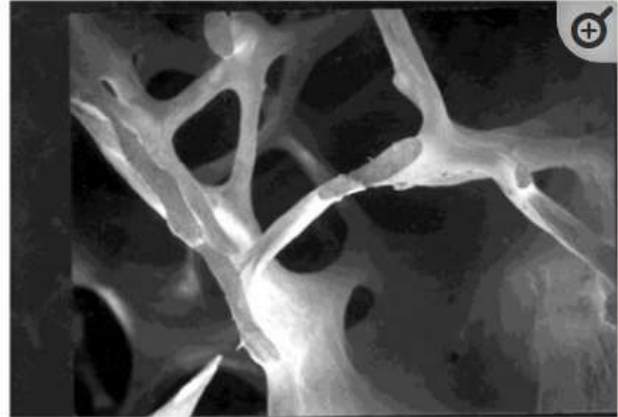
Normal bone   Osteoporotic bone

Figure 1 :Micrographs of normal vs. osteoporotic bone

The risk of fracture due to bone loss is exacerbated by the various functional impairments that come with aging. variables that put you at risk for fractures due to osteoporosis. Decreased bone production and bone loss, decreased bone quality, and disruption of microarchitectural integrity are caused by a number of variables, such as age and a lack of sex steroids, as well as more specific risk factors, such as the use of glucocorticoids. Bone breaks when they are overloaded, which can happen from a fall or other normal activities (Siris et al.,2014).

- **Prevention of Osteoporosis:**

Although osteoporosis can be prevented and treated, more education on the illness and its risk factors is needed. Osteoporosis and fractures are linked to the following risk factors:

- Drinking too much alcohol, smoking cigarettes, eating too much salt and vitamin A, not getting enough exercise, and not getting enough vitamin D and calcium all play a role.

- Cystic fibrosis, Gaucher's disease, glycogen storage disease, osteogenesis imperfecta, Marfan syndrome, and homocystinuria are all examples of genetic disorders.

- Premature menopause, panhypopituitarism, Turner's and Klinefelter's syndromes, and hypogonadal states

- Cushing's syndrome, diabetes mellitus, hyperparathyroidism, and thyrotoxicosis are all examples of endocrine disorders.

- Celiac disease, malabsorption, inflammatory bowel disease, and primary biliary cirrhosis are all examples of gastrointestinal conditions.

- Diseases of the blood and bone marrow include hemophilia, multiple myeloma, sickle cell anemia, thalassemia, leukemia, and lymphomas.

- Causes related to the nervous and muscular systems, such as MS, epilepsy, muscular dystrophy, and stroke

- Autoimmune and rheumatologic conditions, such as RA and SLE

- HIV/AIDS, malnutrition, despair, and bone damage after organ transplant are only a few examples.

- Antidepressants, anticonvulsants, glucocorticoids, GnRH agonists, tamoxephen, aromatase inhibitors, methotrexate, lithium, and anticoagulants are all examples of medications (Adler et al.,2016).

By identifying these potential dangers, we can further investigate the ladies and take preventative measures.

Diet and exercise, two of the most basic and fundamental preventive measures, are both crucial. A healthy diet rich in calories, protein, and proper amounts of calcium and vitamin D is needed for bone growth and density maintenance. Supplemental calcium and vitamin D alone have been found to minimize the risk of fracture by randomized controlled trials. Milk, cottage cheese, yogurt, hard cheese, and green vegetables are all good dietary sources of calcium. Quit smoking and limit your alcohol intake. At least 30 minutes of exercise should be done three times per week. Isotonic, stretching, and isometric workouts can be alternated. Bone density may be boosted by exercising in addition to the other benefits. When it comes to preventing osteoporosis, estrogen and estrogen plus progesterone are no longer considered first-line therapy, especially for women over the age of 60. Estrogen is not typically recommended for women under the age of 60 unless they are experiencing menopausal symptoms. If the woman has a uterus, progesterone should be added (Cauley et al.,2014).

- **The Challenge of Osteoporosis:**

People with osteoporosis are at a higher risk of suffering from fragility fractures than the general population. Even though more than 1.2 million people are estimated to have osteoporosis, up to 80% are not identified and hence do not receive treatment, even after experiencing a fracture. The rate of fractures is expected to quadruple by 2030 as a result of population expansion and aging without advancements in the detection and treatment of osteoporosis.

Since 2002, osteoporosis prevention has been an important goal for musculoskeletal health. Certain diseases and drugs, such as long-term corticosteroid treatment, rheumatoid arthritis, hyperparathyroidism, and chronic kidney or liver disease, qualify patients 70 and up for MBS payment (Nelson et al.,2011).

While osteoporosis is rather common in basic care, it is often misdiagnosed and undertreated since it is a 'silent' illness that causes no symptoms until a fracture occurs. More than 80% of the population over the age of 70 is thought to have osteoporosis or osteopenia (low bone mineral density indicating high risk for osteoporosis) due to the disease's increasing prevalence and hazards with age.

Muscle weakness, cardiovascular illness, hypertension, diabetes mellitus, metabolic syndrome, and osteoarthritis are common among those with osteoporosis. The average individual with osteoporosis also deals with

three additional conditions that have a negative impact on their bone health (Viswanathan et al.,2018).

Osteoporotic fragility fractures or minimal trauma fractures (MTF) affect over half of all postmenopausal women and over a third of all men over the age of 60, leaving survivors with a lifetime of pain, limited mobility, diminished function, and diminished quality of life. Even if they have presented with a fragility fracture, as many as 80% of postmenopausal women and 90% of men do not seek treatment. Hip and spinal fractures are examples of major fragility fractures that can result in lifelong suffering, disability, and even death (Liu et al.,2013).

- **Management of Osteoporosis:**

Principles:

- Risk factors for osteoporosis, fractures, and falls are identified and evaluated after a detailed patient history is taken.

- Investigating the secondary causes using physical means and conducting any necessary tests

- Estimating bone mineral density for a diagnosis and categorization of osteoporosis

- The FRAX method for predicting fractures over a decade.

- Modifying one's diet and way of life

- Treatment via pharmaceuticals (Khosla et al.,2016).

- **Investigations**

The complete blood count, serum phosphorus, serum calcium, 25-OH vitamin D, alkaline phosphatase, thyroid stimulating hormone, 24-hour urine calcium, total protein, and albumin are the first tests run. You may find the explanation for these in Table 1. FSH, LH, estrogen, prolactin, PTH, rheumatoid factor, 24-h urine-free cortisol, and homocysteine are examples of second-line tests. All of these inquiries are useful for pinpointing the underlying reasons of osteoporosis.

Bone turnover indicators are not routinely conducted because of their high cost and lack of utility in the diagnosis and treatment of osteoporosis. However, they might be carried out in a laboratory setting (Sözen et al.,2017).

- **Diagnosis:**

Deformity, trabecular pattern, and density can all be detected by X-ray, despite the lack of sensitivity. The gold standard for diagnosing osteoporosis is measuring bone mineral density (BMD) by dual-energy X-ray absorptiometry (DEXA). They are also useful for tracking progress after medical intervention. Quantitative ultrasound densitometry and quantitative computed tomography (QCT) are two more methods used for bone densitometry. Quantitative ultrasonic densitometry is an excellent technique for predicting fracture risk, bone quality, and bone mass, but it

cannot compare to dual-energy x-ray absorptiometry (DEXA) in terms of accuracy.

Two distinct scoring systems have been developed, both of which are based on BMD:

- T score: significantly lower than usual for a young adult whose bone density is at its peak

- Z-score: standard deviations below the age-specific mean

As an alternative to T scores, the International Society for Clinical Densitometry (ISCD) suggests using ethnic or racial-adjusted Z scores, with a Z score of 2.0 or lower defined as "low bone mineral density for chronological age" or "below the expected range for age," and a Z score of >2.0 as within the expected range for age.

Teenagers and healthy young or premenopausal women do not need routine BMD measurements, but older women at risk of osteoporosis, especially those with a history of fracture, should have their bone mineral density (BMD) checked (Sandhu & Hampson,2011)

- **Drugs Used in Osteoporosis:**

Osteoporosis medications can be broken down into the following classes:

- Bone-resorbing inhibitors like bisphosphonates, denosumab, calcitonin, selective estrogen receptor modulators (SERMs), estrogen, and progesterone

- Bone-building drugs like PTH and teriparatide

- Blended with strontium ranelate and vitamin D.

Bisphosphonates: These medicines are the ones doctors usually try first. They reduce the rate of bone loss and removal. They're commonly employed in both preventative and therapeutic contexts. Morning is the best time to take these with 8 ounces of water before eating or taking any other medications. Avascular necrosis and osteonecrosis of the jaw are the most serious adverse effects, including gastrointestinal distress. It's possible to take bisphosphonates like Alendronate (once weekly), Risedronate (once a month), Ibandronic acid (once a month), and Zoledronic acid (once a year) orally (Jeremiah et al.,2015).

Denosumab This antibody targets RANKL, a protein involved in the development of cells that are responsible for bone resorption. Reduces the risk of fracture and increases bone mineral density. Once every 6 months, a dose of 60 mg is administered subcutaneously (s/c). Due to its high cost, it is reserved for patients who have not responded to or are intolerant of oral and/or intravenous bisphosphonates.

Calcitonin It's useful for keeping calcium levels in check. Whether or how this helps bone is unclear. It has analgesic properties and is hence the treatment of choice for patients experiencing acute pain from a spinal fracture. It can be given intravenously or as a nasal spray (Ward et al.,2016).

SERMs Although they are not as effective as bisphosphonates or estrogen, they do offer some protection against bone loss. A lower chance of developing breast cancer is one of their benefits. If a woman experiences hot flushes before menopause, she should not take raloxifene or any other hormone replacement therapy.

The risk of hip and vertebral fractures is reduced by 34% with estrogen therapy and estrogen plus progesterone therapy (ET/EPT). Estrogen's ability to alleviate menopausal symptoms is an added bonus. The National Osteoporosis Foundation no longer suggests ET/EPT as a primary treatment for avoiding bone loss. Treatment for osteoporosis may include their usage in women under the age of 60, however postmenopausal women of any age is discouraged against taking them. Premature menopause is a potential application for their usage in preventing osteoporosis. The World Health Organization found that medroxyprogesterone acetate was associated with a marginally greater incidence of breast cancer. Clots and strokes may be worsened by estrogen. The transdermal/vaginal administration of estrogen has been shown to boost both safety and effectiveness. Estrone from humans is superior (Rossini et al.,2016).

PTH, or parathyreoid hormone. It's the only treatment of its kind, and it does so by increasing bone mass. Treatment and prevention of osteoporosis in postmenopausal women can benefit from this. It's the most effective method for increasing bone density in the spine and decreasing the likelihood of fracture in the spine. It's only for people with advanced

osteoporosis of the hip or spine, comes at a high price, and needs to be injected daily. Hypercalcemia and bone metastases are conditions in which it should not be administered to postmenopausal women.

Magnesium D3 Vitamin D has two advantages. It raises bone mineral density (BMD) and cuts fracture risk by 25%. In addition to reducing the risk of falls by 25%, it improves muscle strength, balance, and lower extremity function. Vitamin D has been used to treat postmenopausal osteoporosis with varying degrees of success. Bone loss caused by glucocorticoids or after a transplant can be avoided. Administering a low-calcium diet and keeping an eye out for hypercalcemia, hypercalciuria, and renal insufficiency are all good ideas while someone is on calcitriol (Lim et al.,2017).

Ranelate of Strontium It contains two strontium atoms and ranelic acid, and it can be taken orally. There is some anti-resorbent action and stimulation of osteoblast. It does not significantly alter bone growth.

> **Method:**

- **Research Design :**

This is a descriptive cross-sectional study was conducted to assess Preventing Fractures Osteoporosis Follow Up Strategies in Primary Care.

The goal of descriptive research design is to get information that can be used to describe a phenomenon, situation, or population in a systematic way. The descriptive method of research may employ a variety of research techniques to study the

variables of interest. It relies primarily on quantitative data, while qualitative data is occasionally employed for descriptive purposes.

- **Research Method:**

The researcher used a quantitative approach since it was best suited to the thesis's aims and objectives. The results of quantitative methods such as online surveys, online polls, questionnaires, etc., which are sent to both existing and potential clients, are expressed numerically.

- **Research Instrument:**

This study's major goal is to assess Preventing Fractures Osteoporosis Follow Up Strategies in Primary Care. An online survey (questionnaire) was employed to collect quantitative data.

- **Data Collection:**

It is possible to collect data via postal mail, in-person interviews, the telephone, electronic mail, or a combination of these methods. This study utilized an online survey due to its adaptability and rapidity, and because it served as a checkpoint to ensure that all respondents had internet access.

- **Data Analysis**

In this study, the questionnaire data are analyzed using SPSS version 24 for statistical analysis.

- ➢ **Results& discussion:**

- **Demographic Questions:**
1. **Gender**

It is clear from the following table on the distribution of the study sample by gender that the proportion of males is 96%, and females 4%.

Table 1: Gender

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	96	96.0	96.0	96.0
	Female	4	4.0	4.0	100.0
	Total	100	100.0	100.0	

2. Age

It is evident from the following table regarding the distribution of the study sample according to age, that the highest percentage is (36-40 years) with 40%, followed by (31-35 years) with a percentage of 21%, (26-30 years) with a percentage of 20% (More than 40 years) with a percentage of 11% and (21- 25 years) with a percentage of 8%.

table 2 :Age

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21- 25 years	8	8	8	8
	26-30 years	20	20	20	28
	31-35 years	21	21	21	49

36-40 years	40	40	40	89
More than 40 years	11	11	11	100
Total	100	100.0	100.0	

3. Working experience

It is evident from the following table regarding the distribution of the study sample according to Working status, that the highest percentage is (6-10 years) with 40%, followed by (More than 10 years) with a percentage of 35%, (Less than 1 year) with a percentage of 13% and (1-5 years) with a percentage of 12%.

Table 3: Working experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Working experience					
Valid	Less than 1 year	13	13	13	13
	1-5 years	12	12	12	25
	6-10 years	40	40	40	65
	More than 10 years	35	35	35	100
	Total	100	100.0	100.0	

- **The most common symptoms of osteoporosis:**
✓ Statement "The patient feels back pain, caused by a fracture or collapse of the bones in the spine." came in the first place with an arithmetic mean of 4.21 and a

standard deviation of .902. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "The patient's bone breaks much more easily than expected. "came in the second order, with a mean of 4.13 and a standard deviation of .884. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "The patient should be in a bent position" came in the third order, with an arithmetic mean of 4.13 and a standard deviation of .812. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "The patient loses height over time "in the fourth rank came with an arithmetic mean of 4.09 and a standard deviation of .818. Therefore, the direction of the responses of the study sample is neutral.

It was apparent from the table that the attitude of The most common symptoms of osteoporosis, including The patient feels back pain, caused by a fracture or collapse of the bones in the spine.

Table 4 Descriptive Statistics of The most common symptoms of osteoporosis

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
The patient feels back pain, caused by a fracture or collapse of the bones in the spine.	100	2	5	4.21	.902

The patient loses height over time.	100	3	5	4.09	.818
The patient should be in a bent position.	100	3	5	4.13	.812
The patient's bone breaks much more easily than expected.	100	2	5	4.13	.884
The most common symptoms of osteoporosis	100	3.00	5.00	4.1120	.48017

Table 5 Frequency &Percent of The most common symptoms of osteoporosis

S	Strongly disagree		not agree		Neutral		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
The patient feels back pain, caused by a fracture or collapse of the bones in the spine.	-	-	3	3%	23	23%	24	24%	50	50%
The patient loses height over time.	-	-	-	-	29	29%	33	33%	38	38%

The patient should be in a bent position.	-	-	-	-	27	27%	33	33%	40	40%
The patient's bone breaks much more easily than expected.	-	-	3	3%	24	24%	30	30%	43	43%

- **the people most at risk of osteoporosis:**

✓ Statement "Men and women with small bodies tend to be more at risk because they may have less bone mass to draw from as they age" came in the first place with an arithmetic mean of 4.24 and a standard deviation of .712. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "Having a parent or sibling with osteoporosis puts you at greater risk, especially if your mother or father broke a hip" came in the second place with an arithmetic mean of 4.12 and a standard deviation of .844. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "Women are more susceptible to osteoporosis than men "came in the third order, with a mean of 4.09 and a standard deviation of .911. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "The older you get, the greater your risk of developing osteoporosis" came in the fourth order, with an arithmetic mean of 4.07 and a standard deviation of .820. Therefore, the direction of the responses of the study sample is Agree.

It was clear from the table that the people most at risk of osteoporosis. It was also clear that Men and women with small bodies tend to be more at risk because they may have less bone mass to draw from as they age

Table 6 Descriptive Statistics of the people most at risk of osteoporosis

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	p-value
Women are more susceptible to osteoporosis than men.	100	2	5	4.09	.911	
The older you get, the greater your risk of developing osteoporosis.	100	2	5	4.07	.820	0.035
Having a parent or sibling with osteoporosis puts you at greater risk, especially if	100	3	5	4.12	.844	0.009

your mother or father broke a hip.						
Men and women with small bodies tend to be more at risk because they may have less bone mass to draw from as they age.	100	3	5	4.24	.712	-
the people most at risk of osteoporosis	100	2.50	5.00	4.0575	.51720	
Valid N (listwise)	100					

Table 7 Frequency &Percent of the people most at risk of osteoporosis

S	Strongly disagree		not agree		Neutral		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%

Women are more susceptible to osteoporosis than men.	-	-	5	5%	22	22%	32	32%	41	41%
The older you get, the greater your risk of developing osteoporosis.	-	-	2	2%	24	24%	39	39%	35	35%
Having a parent or sibling with osteoporosis puts you at greater risk, especially if your mother or father broke a hip.	-	-	-	-	30	30%	28	28%	42	42%
Men and women with small bodies tend to be more at risk because they may have less bone mass to draw from as they age.	-	-	-	-	16	16%	44	44%	40	40%

- **the bad habits that increase the risk of osteoporosis:**

✓ Statement "Excessive weight gain for men and women" came in the first place with an arithmetic mean of 4.37 and a standard deviation of .747. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "Excessive alcohol consumption "came in the second order, with a mean of 4.07 and a standard deviation of 1.112. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "Tobacco use contributes to weak bones " came in the third order, with an arithmetic mean of 4.03 and a standard deviation of .784. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "People who spend a lot of time sitting are more likely to develop osteoporosis "in the fourth rank came with an arithmetic mean of 3.84 and a standard deviation of. 368.Therefore, the direction of the responses of the study sample is neutral.

According to the data presented in the table, the bad habits that increase the risk of osteoporosis include Excessive weight gain for men and women **.**

Table 8 Descriptive Statistics of the bad habits that increase the risk of osteoporosis

Descriptive Statistics						p-value
	N	Minimum	Maximum	Mean	Std. Deviation	
People who spend a lot of time sitting are more likely to develop osteoporosis	100	3	4	3.84	.368	0.344

Excessive alcohol consumption	100	1	5	4.07	1.112	-
Tobacco use contributes to weak bones.	100	3	5	4.03	.784	0.314
Excessive weight gain for men and women	100	3	5	4.37	.747	0.013
the bad habits that increase the risk of osteoporosis	100			4.07	0.443	

Table 9 Frequency &Percent of the bad habits that increase the risk of osteoporosis

S	Strongly disagree		not agree		Neutral		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
People who spend a lot of time sitting are more likely to develop osteoporosis	-	-	-	-	16	16%	84	84%	-	-

Excessive alcohol consumption	3	3%	7	7%	19	19%	22	22%	49	49%
Tobacco use contributes to weak bones.	-	-	-	-	29	29%	39	39%	32	32%
Excessive weight gain for men and women	-	-	-	-	16	16%	31	31%	53	53%

- **The most important effective prevention strategies for osteoporosis:**

✓ Statement "Expanding individuals' awareness to understand the importance of bone health throughout their lives" came in the first place with an arithmetic mean of 4.22 and a standard deviation of .675. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "Encourage patients to take their time while walking around outside "came in the second order, with a mean of 4.21 and a standard deviation of .832. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "Regular weight-bearing and muscle-building exercises are recommended to prevent osteoporosis and falls " mean of 4.15 and a standard deviation of .687. Therefore, the direction of the responses of the study sample is Agree.

✓ Statement "When a patient suffers from frequent falls, physical therapy should be referred to develop a personalized plan to improve balance and strength "in

the fourth rank came with an arithmetic mean of 3.89 and a standard deviation of .751. Therefore, the direction of the responses of the study sample is neutral.

It was apparent from the table that The most important effective prevention strategies for osteoporosis, the most significant of which were Expanding individuals' awareness to understand the importance of bone health throughout their lives.

Table 10Descriptive Statistics of The most important effective prevention strategies for osteoporosis

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	p-value
Regular weight-bearing and muscle-building exercises are recommended to prevent osteoporosis and falls.	100	3	5	4.15	.687	0.001
Encourage patients to take their time while walking around outside.	100	2	5	4.21	.832	0.320
When a patient suffers from frequent falls, physical therapy should be referred to develop a personalized plan to	100	3	5	3.89	.751	0.121

improve balance and strength.						
Expanding individuals' awareness to understand the importance of bone health throughout their lives.	100	3	5	4.22	.675	0.603
The most important effective prevention strategies for osteoporosis	100	3.00	4.60	4.0680	.36979	
Valid N (listwise)	100					

Table 11 Frequency &Percent of The most important effective prevention strategies for osteoporosis

S	Strongly disagree		not agree		Neutral		Agree		Strongly Agree	
	F	%	F	%	F	%	F	%	F	%
Regular weight-bearing and muscle-building exercises are	-	-	-	-	17	17%	51	51%	32	32%

recommended to prevent osteoporosis and falls.									
Encourage patients to take their time while walking around outside.	-	-	2	2%	20	20%	33	33%	45	45%
When a patient suffers from frequent falls, physical therapy should be referred to develop a personalized plan to improve balance and strength.	-	-	-	-	34	34%	43	43%	23	23%
Expanding individuals' awareness to understand the importance of bone health throughout their lives.	-	-	-	-	14	14%	50	50%	36	36%

> **Conclusion:**

This study attempted to discover the most essential strategies for preventing fractures and following up on osteoporosis in primary care by determining the causes of osteoporosis, the bad behaviors that lead to it, and methods of preventing

osteoporosis by questioning employees in the field of primary care. Specifically, the study wanted to identify the most important techniques for preventing fractures and following up on osteoporosis in primary care. According to the findings of the study, the most prevalent symptoms of osteoporosis are: Back pain is experienced by the patient as a result of a fracture or collapse of the bones in the spine, and the patient's bones break much more easily than was initially anticipated. According to the findings of the study, those who are most at risk for developing osteoporosis are Men and women who possess a People with smaller frames are more likely to be affected by osteoporosis since they may have less bone mass from which to draw as they age. Poor lifestyle choices also play a role in elevating one's likelihood of developing the condition. Gaining an unhealthy amount of weight, both for men and women. It was also discovered that one of the most successful ways for preventing osteoporosis was increasing people's knowledge of the significance of maintaining bone health throughout their lives.

➤ **Recommendation:**

When it comes to osteoporosis treatment for adults 65 and over, the American Society for Bone and Mineral Research (ASBMR) organized a coalition in 2019 to produce Clinical Recommendations for Secondary Fracture Prevention. The coalition's suggestions are outlined briefly below.

1. To evaluate and treat underlying osteoporosis and reduce risk of another bone fracture in the next 1-2 years, women and men aged 65 and over who sustain a spine or hip fracture should be handled by a FLS or a multidisciplinary team.

2. Providers of primary care and other healthcare services owe it to their patients to tell them of the diagnosis of osteoporosis, the patient's risk of future fractures, and the availability of medication that has been shown to lower fracture risk.

3. these individuals should have a fall risk assessment and be sent to the appropriate services (physical therapy, occupational therapy, optometry, etc.) to begin taking preventative steps against falls.

4. Both sexes should have access to treatment that effectively lowers their fracture risk when they suffer a break in the spine or hip. Some doctors prefer to wait a few weeks before starting intravenous zoledronic acid in patients with hip fractures (notice that the FDA has approved the use of zoledronic acid in conjunction with vitamin D). There should be no delay in treatment.

5. People with osteoporosis need to be followed and cared for for the rest of their lives.

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