Research Article

To Assess the Knowledge of Nurses Regarding Prevention of Osteoporosis among Nurses of Jinnah Hospital and General Hospital Lahore Pakistan

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Abstract

Knowledge about disease its risk factor, sign/symptoms and different aspect of prevention and treatment with accurate information help the professional to make informed decision about the health practice. Average rate of the knowledge regarding prevention and treatment of Osteoporosis has been found among the different health professional over the world, including female Nurses. Aim of this study was to assess the knowledge of Nurses regarding prevention of osteoporosis. Cross-sectional design was used in research. Two Government hospitals Jinnah Hospital and Lahore General Hospital choosed for setting. Simple random sampling technique was used. Data was collect through written Questionnaire consist of 24 close ended question. Data analyzed by SPSS version 21. It was concluded that Nurses have moderate knowledge about risk factor and prevention of osteoporosis. The staff nurses who were young and clinical experience 5-10 years have positive about their role and skill about prevention and management of osteoporosis. Nurses believed that they have an important role in educating the public on osteoporosis prevention and management. One in four women over the age of 60 will develop osteoporosis 84.2% were agreed about that statement. Heredity plays role in development of osteoporosis; in response of this question 60% nurses were disagreed. Yet, their knowledge on different issues (e.g. signs of the disease, medication, and lifestyle problems) was moderate. Measures should be taken in order to expand nurses' knowledge, such as education programs and postgraduate courses.

Keywords: Knowledge; Osteoporosis; Prevention; Risk factors; Nurse

Introduction

"Osteoporosis is defined as by reduction in bone mass and structural abnormality of bone tissue, leading to an increased chance to fractures of femur and hip Osteoporosis is a greater and increasing health problem in our community." Today osteoporosis is a fearful health problem such as cancer. The female who have family history of this disease they have greater chance to develop this disease in future. Many female around in the country develop the disease. This is a dangerous health problem.(Fatima *et al*, 2009).

Today osteoporosis represents a current issue in developing countries through its linkage with low bone mass Density and hip fractures. Prevalence of osteoporosis in developing countries is on the increase issue. There is a lot of information with regarding to epidemiology and disease burden in these countries. People mostly affect with bone density and bone quality as well as neck of the femur fracture risk. The disease of osteoporosis is to be identifying increase with the late age process in the world. the main aim of the treatment is to protect the future complication like of fracture is to be consider important and main role in use of the proper hospitalize facility and education to prevention (Mushtaq *et al*, 2014).

In Ireland the prevalence of osteoporosis an estimated three lake people are affected and worldwide approximately two hundred million female are affect due to the osteoporosis every year. In five men affect only one man and one in two female over the age of menopause develop a lot of other complication like fracture due to bone disease as osteoporosis in their life period. The identification of osteoporosis in Arabic country considers a major health problem. The people who affect of fourteen lake sixty one thousand four hundred and one in which aged fifty, approximately affect and develop future in every year, it is

un affordable costing by year 1.14 billion burden on medical resource.(Leslie & Morin, 2014).

The prevalence of Osteoporosis in the united states are, there is greater to fourth million female had pre-develop of this dangerous disease and they have greater possibility because of their spongy bone mass (Giangregorio *et al*, 2010).

Almost, eighteen million Americans are estimated affected to have osteopenia and then million more had developed osteoporosis. Combinations of lifestyle modifications, nutritional changing, and light weight bearing exercise can increase bone mass density and it is very effective to reduce the risk of osteoporosis in women. (Hanson, 2009).

In Pakistan the female population is approximately seventy million of total population in which near to 12% people 8.4 million are over age of fifty reached and they have risk to develop osteoporosis. Two hundred million female in all over word wise are affected with this disease which is according to world Health Organization is second major health problem. It is a major reason of over twenty lake fractures each year. According to WHO, twenty October is celebrated as world osteoporotic day in Pakistan. (Zahoor & Ayub, 2011)

The disease prevention and counsel the client toward the health is main role play by nurse. The nurse who deals the people at Public level, they need greater concentration on people life style and health habits. It is a great responsibility completed by the nurse. In nursing profession, Public health nurse has ready to face every hurdle, so, it is necessary for public health nurse to improve knowledge themselves. However it is necessary for public health nurse, she themselves responsible for improve knowledge with the collaboration of Hospital member and other college who take responsibility to enhance the public health nurse knowledge regarding osteoporosis.

They also mentioned in his study that it is easy for Public health nurse to improve the knowledge and minimize the risk factor by their active participation. Nurse who work at public level, she remained in touch with every member of community day by day so if she pay some attention to client, she can apply knowledge and prevent the client to future complication like fracture. Nurse who work at public level provide better knowledge with confidence regarding protection against osteoporosis. At the public level residence get adequate prevention regarding disease and other health issue so nurse have sufficient and relevant knowledge to teach others. Opportunity in high job promotion is factor of encouragement for nurses to improve their professional knowledge (Chen *et al*, 2005).

Female does not focus on diet and lifestyle in their young age. Many Pakistani ladies have the osteoporosis they develop it in much young age and don't care of themselves

in late age these female develop complication easily like fracture of hip, neck of the femur. This type of health issue have a great load on medical resources and as well as on resources of Pakistan. (Masood *et al*, 2010).

If females have knowledge about the risk factor which led to development of osteoporosis they can protect it better way by knowing its factor. He clearly makes linkage with several health habits and its relation with decreased risk factor of osteoporosis in women. There is clear-cut association between cessation of smoking, and proper intake of calcium, intake 'vitamin D' in routine. (Danish *et al*., 2014).

Background

"Community Health Nurses are responsible for promoting community health, preventing disease, disability and protecting the health of vulnerable populations. Therefore, CHNs need to be aware of the risk of osteoporosis and provide early counseling to the community people" Nurses can explain prevention strategies which help to prevent or minimize the development of osteoporosis in community.

It is emphasized on Nurses knowledge about osteoporosis, its risk factors and prevention. if nurses have better knowledge about disuse and its prevention then they can give healthier life to community. He says in his study that nurses had proper and adequate knowledge only about prevention of fall which is the most important factor to prevent the future complication. This indicates power full linkage between roles of the nurses has greater worth than the other members of "nutrition-dietitians, medication physicians". Nurses have major role in the prevention of osteoporosis like counsel to patient on different life aspects, as advice to people do their early scanning of disease, change their life style and diet intake, take medicine regularly and follow up all these aspect play greater role in disease prevention.(Vered *et al*, 2008)

Nurses who were thirty years old, and who studied from higher education in their fields had a good post in their clinical area as a head nurse and staff nurse. They found in high level of knowledge g related to osteoporosis and also its prevention they can offered osteoporosis education to community people on behalf of their higher scores knowledge regarding osteoporosis (Chen *et al*, 2005).

In 2010, they proved in their study that if female maintain body weight according to height and age they have less chance to develop osteoporosis. Nurses should teach the females client on proper take of calcium in her daily diet, prevent to take alcohol and smoking, "vitamin-D" add in diet, do light exercise, modify life habits is very beneficial to minimize the risk of osteoporosis. Female who reached to age of 50 encourage taking double quantity of calcium to prevent the osteoporosis in menopause. It is necessary for nurses to examine and note history of fall at the time of

admission proper physical examination must be done. It is suggested the all female to do their bone mass density test when they reached at 65year of age. Note the female who have complained for chronic back pain with the age of 50year with menopause. (Bonnick *et al*, 2010)

Purpose of Study

The main purpose of the study is to assess Knowledge of Nurses regarding prevention of osteoporosis.

Significance of Study

Nurses knowledge regarding osteoporosis and its risk factor help to prevent the development of Osteoporosis and control the future complication of osteoporosis as fracture. The perception about physical activity and dietary habits is very helpful to prevent the development of osteoporosis in female. The significance of this study is to find out the present situation of Knowledge, related to prevention of osteoporosis in nurses. As a result, knowledge in nurses is very important to improve precaution for all over the country. The outcome of research may help in program formulation for concerned people and organizations to create awareness and incorporate health workers in regular activity and educate the public about the importance of preventive measure and the risks associated with Osteoporosis.

Research Question

What is the level of knowledge in nurses of Government sector of Lahore regarding prevention of osteoporosis?

Conceptual Definitions

Osteoporosis

"Osteoporosis is characterized by low bone mass and detoriation of bone structure."(Health & Services, 2006).

Knowledge

"Knowledge can be thought of as a type of instruction or recipe that sets out how a good or service can be produced. It is an input to a firm's production function."(Holsapple & Jones, 2004)

Risk Factor

"A risk factor is any attribute, characteristic or exposure of an individual that increases the likelihood of developing a disease or injury. Some examples of the more important is risk factor are underweight, unsafe sex, high blood pressure, tobacco and alcohol consumption, and unsafe water, sanitation and hygiene."(Danaei *et al,* 2011)

Operational Definitions

Osteoporosis

"Osteoporosis is a bone disease leading to immobility and fracture in old age."

Knowledge

"Set of information that should be interpreted broadly it could be a blueprint for a particular good, a method of providing a particular service, a generic production process or organizational structure, and so on."

Risk Factor

"Risk factor: Something that increases a person's chances of developing a disease. For example, cigarette smoking is a risk factor for lung cancer, and obesity is a risk factor for heart disease."

Material and Method

Cross-sectional design in research to assess the level of knowledge of nurses regarding prevention of Osteoporosis. The target population were two Governments hospital, Jinnah Hospital and Lahore General Hospital used for research setting. The student nurses, all nurses in Pakistan and nurses of international hospital are excluded in research. Sample size is 240 nurses taken from. The data collected with simple random sampling technique. The following criteria set to select the sample according to the demographic data of the participants were, age, clinical experience, education.

First of all get permission from ethical review committee Lahore school of nursing, The University of Lahore through a permission letter. Later, the institutional permission taken for conducting the research study from head of department in each government hospital. The participants informed require information for the objective of research project and their data confidentially secured. Data were collected by 24 questions which is self administered questionnaire on lickert scale adapted on "5 point lickert-type scale (from 1, strongly disagree to 5, strongly agree)". Software Package statistical analysis SPSS version 21 will be use for data analysis.

Results

Demographic Analysis

Data was collected from female nurses. Statistics shows that 240 responses were taken they were female. Distribution can be seen in given Table 1 and graph below summarizes the characteristics of respondents (n=240) on the base of age, Experience, Designation, Qualification (Nursing diploma, BS Nursing, Other).

The whole proportion of sample size comprised on female employee 100 % (n=240). About 45.4% (n= 109) of the respondents were have the Clinical Experience of 1-5 year, 16.3% (n=39) were have the clinical experience of 6-10 year, 16.7% (n=40) were have the clinical experience of 11-15 year, 9.2% (n=22) were have the Clinical experience of16-20 year, 12.5% (n=30) have the Highly Experience they have Experience Above to 20 years. In the total participant (n=240), in which 26.3 (n=63) participants were have the post of Head nurse and 73.8% (n=177) participants have the post of Staff nurses.

Table 1: Demographic Characteristics of Respondents

	N= 240	%
Designation		
Head Nurse	63	26.3
Staff Nurse	177	73.8
Educational Background		
General Nursing	188	78.3
BSN/Post RN	44	18.3
BSN Generic Nursing	8	3.3
MSc. Nursing	0	0
Age Group		
25-30	143	59.6
31-35	46	19.2
36-40	33	13.8
41-45	10	4.2
Above 45 year	8	3.3
Experience		
1-5 year	109	45.4
6 -10 year	39	16.3
11-15 year	40	16.7
16-20 year	22	9.2
Above 20 year	30	12.5
Total	240	100

Validity and Reliability Assessment

Table 2 presents Cronbach's alpha for four scales used in the study. Cronbach alpha is the most commonly used measure of scale reliability (Cortina, 1993).

Table 2: Summary of Reliability analysis

		N	%
Cases	Valid	240	100.0
	Excluded[a]	0	.0
	Total	240	100.0
a. List wise deletion based on all variables in the procedure.			

| Reliability Statistics	
Cronbach's Alpha	N of Items
.628	24

Cronbach alpha above .60 is considered to be the acceptable indicator according to (Nunnally, 1978). of The alpha values of However alpha value of my variable for knowledge of osteoporosis prevention is above .628 which is great than .06 acceptable according to (Nunnally, 1978).

Result regarding the question, "Early menopause, such as hysterectomy, is not a risk factor for osteoporosis", show that only 14.17% respondent agrees with this statement, 50.42% respondent are Disagree and 14.17% are neutral with this statement. Majority of nurses Disagree to this statement (Fig. 1).
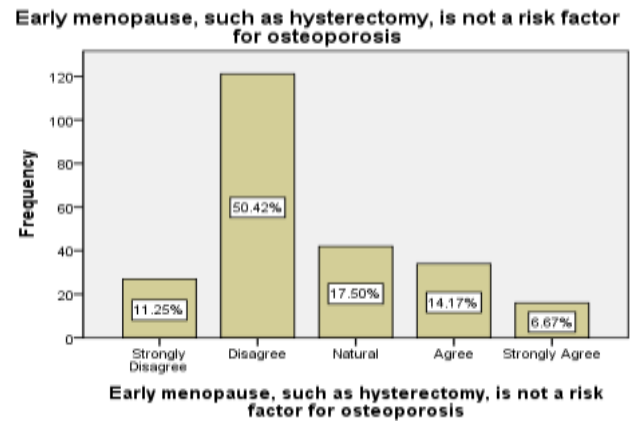
Fig. 1: Early menopause, such as hysterectomy, is not a risk factor for osteoporosis.

Fig. 2 shows the response to this question that "After age 40 year, it is too late for people to increase their calcium intake to prevent osteoporosis" are 40.83% nurses agree to this statement and only 17.58% Female nurses are disagree out of n=240 respondent.
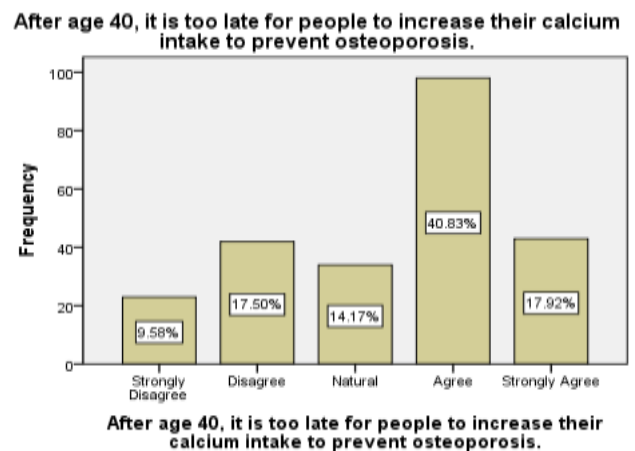
Fig. 2: After age 40, it is too late for people to increase their calcium intake to prevent osteoporosis

Fig. 3 show the detail of respondent who response to the statement that, "All individual lose bone mass after 40 years of age", in which only 25.42% respondent who agree to this statement, 29.17% are disagree and 30.83% are natural they don't know the exact answer. 5.8% nurses are strongly disagree to this statement, only 8.7% are strongly agree.

Fig. 4 shows the detail of the respondent that, "Normally bone loss slow down after menopause." In which 37.5% respondent who agree to this statement and only 22.9% respondent who are disagree to this statement.
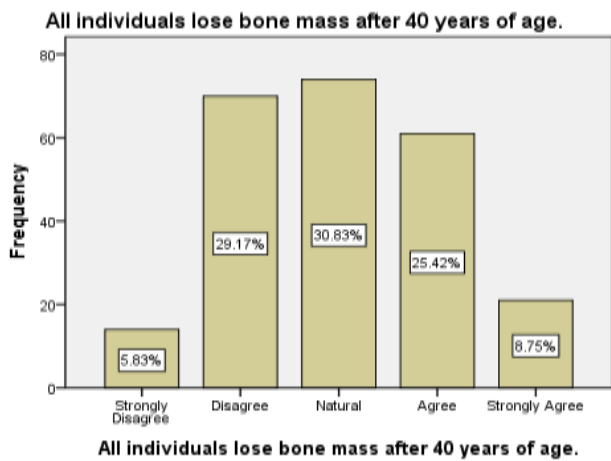
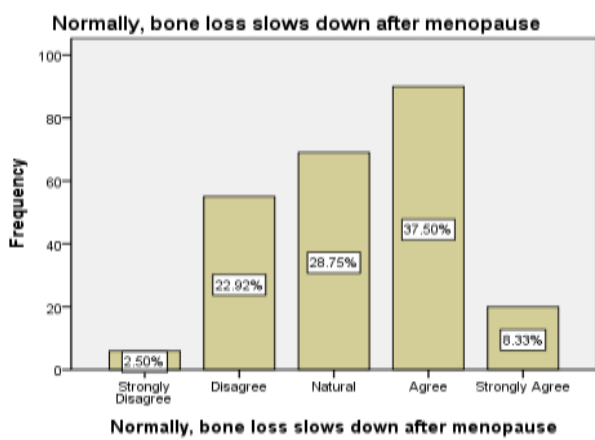**Fig. 3:** All individuals lose bone mass after 40 years of age

Fig. 4: Normally bone loss slow down after menopause.

Fig. 5 show the detail of the statement that, "After menopause, osteoporosis may be slow down by taking estrogen." In this statement only 25.42% respondent who know the exact answer and agree to this statement and 37.92% respondent are disagree to this statement. The nurses who were strongly agree 8.33% and 2.50% were strong disagree to this statement.
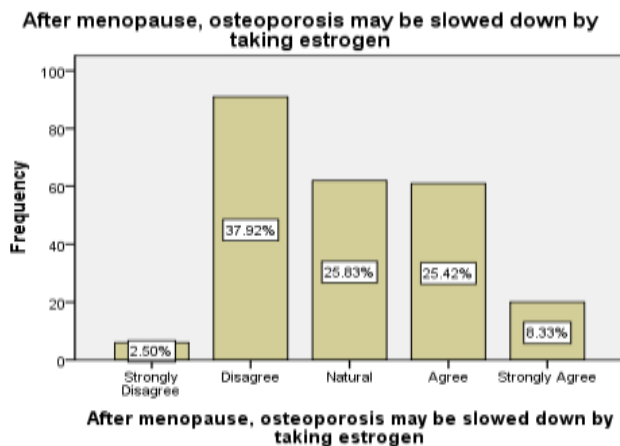

Fig. 5: After menopause, osteoporosis may be slow down by taking estrogen

Fig. 6 Show the detail of respondent who response to this statement that, "Women over 40 need about 1500mg of calcium". In this statement only 28.33% respondent are agree to this statement and majority of respondent don't know the answer they are 46.67% natural, 5.83% nurses were disagree and only 1.67% respondent are strongly disagree to this statement. This is the detail of the all respondent who response to the above question shows lowest knowledge according to age related question regarding prevention of osteoporosis.
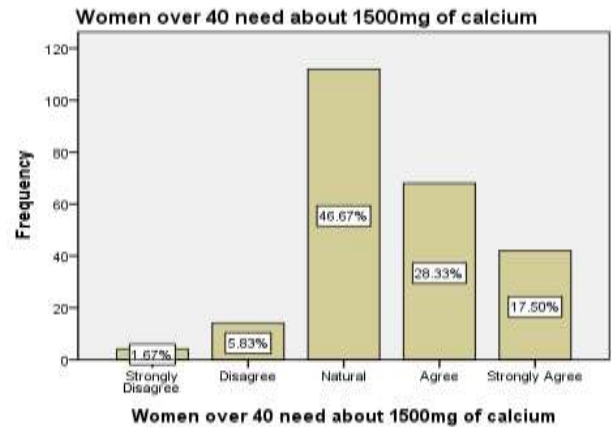

Fig. 6: Women over 40 need about 1500mg of calcium.

Fig. 7 show the detail result of the statement "Smoking is not a risk factor for osteoporosis", in which 16.7% respondent agree to this statement and 35% disagree and 26.3% respondent are natural to this statement so majority of nurses don't know about this common risk factor of osteoporosis. 5.0% nurses are strongly agreed and 17% are strongly disagreeing to this statement.
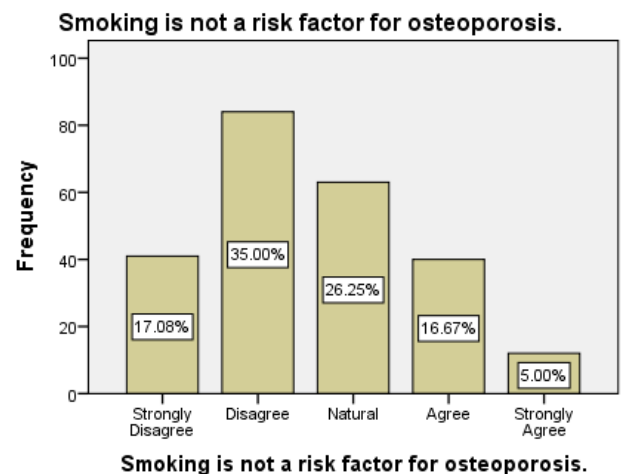

Fig. 7: Smoking is not a risk factor for osteoporosis.

Fig. 8 show the detail result of respondent who 37.92% agree to statement "Weight-bearing exercise such as walking can prevent osteoporosis", only 34.17% respondent are disagree with this common prevention.

Fig. 8: Weight-bearing exercise such as walking can help prevent osteoporosis

Fig. 9 show the detail result of the respondent who only 23.3% agree to the statement that "Heredity has role in development in osteoporosis", and majority of participant 47% disagree to this common risk factor of osteoporosis. Very rare nurses 4.6% strongly agree to this statement and 12.5% nurses are strongly disagree to this statement.
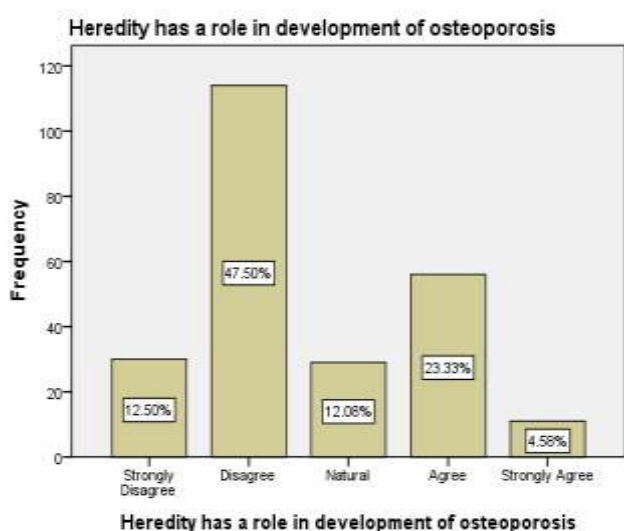
Fig.9: Heredity has role in development of osteoporosis

Discussion

According to WHO osteoporosis is considered as the 10th most important disease associated with progress of civilization. So as per importance the aim of this study was to assess Knowledge among the nurses regarding prevention of osteoporosis. Nurses can play an important role in disease prevention and rehabilitation.

Eminently, postmenopausal ladies who have menopause before age 47 years are at higher hazard for osteoporosis, fracture, and mortality contrasted and ladies who have menopause at 47 years or later (Svejme *et al*, 2012).

Prior menopause brings about higher risk of osteoporosis and breaks among postmenopausal ladies. These hip breaks influence horribleness and mortality because of existing cracks causing extra breaks.(Blum *et al*., 2016)

The result of this study, knowledge of nurses was in (Fig .1) "Early menopause, such as hysterectomy, is not a risk factor for osteoporosis", show that only 14.1% respondent agrees with this statement,6.67% were strongly agreed, 50.4% respondent are Disagree, 11.25% were strongly disagreed and 14.17% are natural with this statement. Majority of nurses Disagree to this statement.

Peak bone mass is typically accomplished by age 30; in this way, physical movement and acquiring the prescribed measurements of calcium and vitamin D in pre-adulthood and youthful adulthood will guarantee top bone mass advancement.(Burnett-Hartman *et al*, 2009). As the result of this study "After age 40 year, it is too late for people to increase their calcium intake to prevent osteoporosis" are 40.83% nurses agree to this statement and only 17.58% Female nurses are disagree out of n=240 respondent. (Fig.2) Show the detail of respondent who response to this statement that, "Women over 40 need about 1500mg of calcium". In this statement only 28.33% respondent are agree to this statement and majority of respondent don't know the answer they are 46.67% natural, 5.83% nurses were disagree and only 1.67% respondent are strongly disagree to this statement.

The most serious hazard figure for osteoporosis is low bone mass. Ladies who quit delivering estrogen because of characteristic or iatrogenic menopause encounter a quick bone misfortune. It is entrenched that ladies encounter loss of as much as 15% of their aggregate bone mass around the season of normal menopause. After reciprocal oophorectomy, the loss of trabecular bone has been accounted for to be as extraordinary as 20% amid the initial year and a half after surgery. After this time of quick bone misfortune, bone mass keeps on diminishing at a slower rate. Along these lines, prophylaxis and treatment of growth that prompts ovarian disappointment can incredibly build the hazard for osteoporosis.(Hamaoui & Hamaoui, 2003)

Cigarette smoking was first distinguished as a hazard consider for osteoporosis decades back. Considers have demonstrated an immediate connection between tobacco utilize and diminished bone thickness. Investigating the effect of cigarette smoking on bone wellbeing is entangled.(Kanis et al., 2005). Figure (7) show the detail result of the statement "Smoking is not a risk factor for osteoporosis", in which 16.7% respondent, agree to this statement and 35% disagree and 26.3% respondent are natural to this statement so majority of nurses don't know about this common risk factor of osteoporosis. 5.0% nurses are strongly agreed and 17% are strongly disagreeing to this statement.

Nurses are responsible for promoting community health, preventing disease, disability and protecting the health of vulnerable populations. Therefore, PHNs need to be aware of the risk of osteoporosis and provide early counseling to the community people". Nurses can explain prevention strategies, which help to prevent or minimize the development of osteoporosis in community

The finding of this study show moderate knowledge of nurses related to osteoporosis and its related factor, which lead to development the disease. Detail show in (Fig.1) in which majority (50.42%) nurses response to disagree they have no knowledge about Hysterectomy and early menopause can be contribute in development of osteoporosis, (Fig.5) show only (40.83%) respondent agree intake of extra calcium in late age of 40 to prevent osteoporosis

The response of question that physical activity, weight bearing exercise like walking more beneficial and help to prevent the osteoporosis, but only (34.17%) nurses knew the exact answer they agree to this statement. However (34.17%) disagree with this statement they don't know benefits of physical activity detail show in (Fig.8). Awareness about osteoporosis and perception about physical activity were very helpful to prevent the development of osteoporosis. There are lot of benefits of doing light weight physical exercise which help to develop bone health and minimize the risk of fracture.(Vuori, 2001)

Conclusion

From the Fig 10, it is concluded that the knowledge of nurses was positive in 14 items. In remaining 10 items

nurses replied negative answer. So, it was concluded that the overall nurses have moderate knowledge regarding osteoporosis. Knowledge about disease, its risk factor, sign/symptoms and different aspect of prevention and treatment with accurate information help the professional to make informed decision about the health practice. Average rate of the knowledge regarding prevention and treatment of Osteoporosis has been found among the female Nurses of Lahore. Nurses believed they have an important role in educating the public on osteoporosis prevention and management. Yet, their knowledge on different issues (e.g. signs of the disease, medication, and lifestyle issues) was only moderate.

Limitation
➢ Novice researcher
➢ Imitated resources

Recommendation

Nurses play many roles as educator, counselor so she should take responsibility in early prevention and rehabilitation of disease. Nurses should improve their knowledge.

Measures should be taken in order to expand nurses' knowledge, such as education programs and postgraduate courses and others educational activities like seminars, workshops.

In future, administration of hospitals should update the nurses knowledge by arrange the annually seminars, workshops and other educational activities. Evaluative program arrange to assess the nurse's knowledge help to guide the education program.
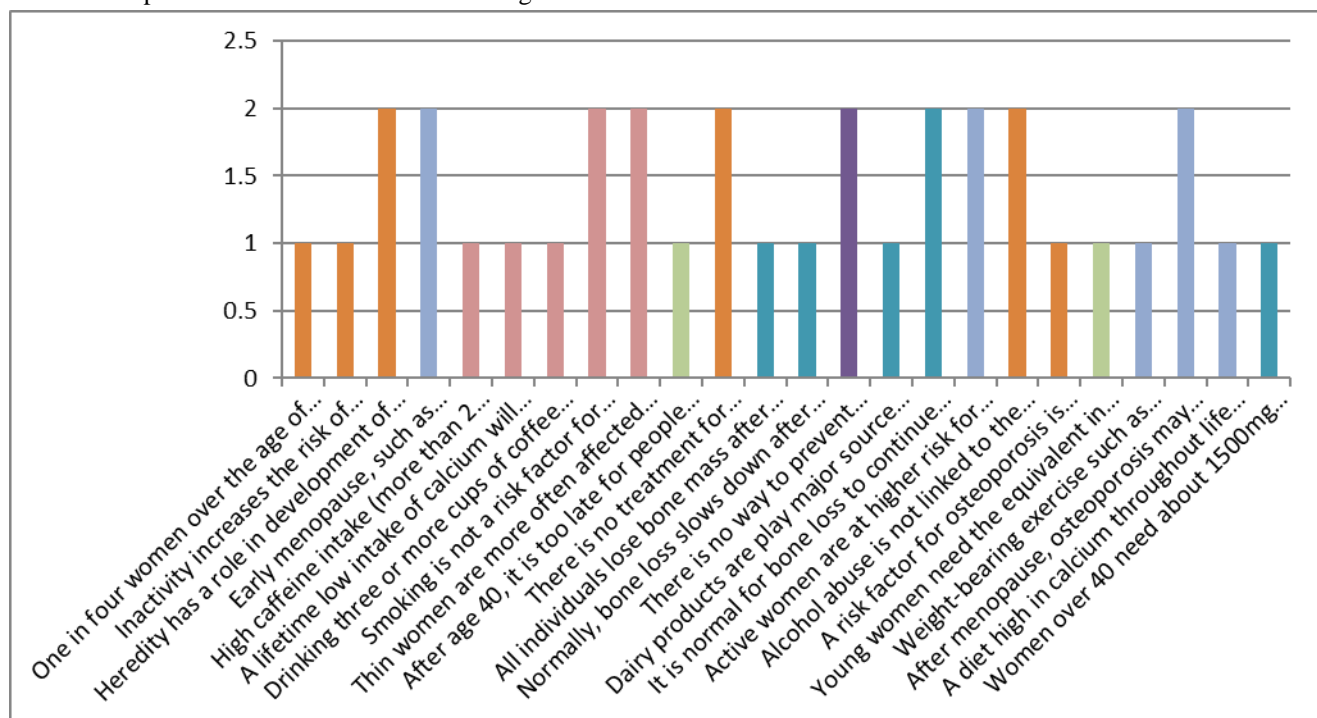

Fig. 10: Overall knowledge of nurses concluded; High knowledge=1, Low knowledge=2

Acknowledgement

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