

Knowledge and Attitude about Andropause Among General Physicians in Shiraz, Iran 2014

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ABSTRACT

Background: Andropause in men refers to the clinical and biochemical syndrome associated with advanced age and characterized by a deficiency in serum testosterone levels. With the increase in aging male population and life span in Iran and focus on quality of life, andropause will become a major health issue that needs to be addressed in order to prevent disability. The results of some research have shown that there is still low level of knowledge and attitude toward andropause among health professionals. This study aimed at assessing the level of knowledge and attitude of general physicians regarding andropause in 2014.

Methods: This cross-sectional study was carried out on 402 general physicians in Shiraz. A researcher-made questionnaire was developed for assessing the level of knowledge and attitude of general physicians about andropause. SPSS 18 was used to analyze the data, and descriptive statistics, ANOVA and Pearson correlation were applied for data analysis.

Results: The mean score of knowledge and attitude about andropause was 29.4 out of 76 and 35.1 out of 45, respectively. The findings showed a poor level of knowledge and positive attitude toward andropause among general physicians. There was a significant relationship between occupational status and knowledge about andropause ($P < 0.001$). There was a statistically significant relationship between attitude and demographic characteristics ($P < 0.05$). The correlation between knowledge and attitude toward andropause was not statistically significant ($P = 0.548$).

Conclusion: The findings of the present study indicate the need for designing educational interventions to improve the knowledge and attitude of andropause among general physicians.

KEYWORDS: Andropause; General physicians; Male

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INTRODUCTION

Andropause, or more accurately, testosterone deficiency syndrome (TDS) is one of the new issues which can affect the quality of life in older men. It is a natural phenomenon that occurs with age in men and is diagnosed by clinical manifestation and a decrease in serum testosterone levels; it affects the performance of many systems of the body from the head to toe.^{1,2}

In an attempt to alleviate the scarcity of descriptive epidemiology of androgen deficiency, the Massachusetts Male Aging Study (MMAS) reported a crude incidence rate of 12.3 per 1000 person-year, leading to the prevalence of 481000 new cases of andropause per year among American men aged 40 to 69 years old.³ This age-related decline starts in the third decade of life and progresses slowly.⁴ In men, this process shows a significant inter-individual variability in the age of the onset and speed and depth of the decline.³

Various terms used to describe this phenomenon include male menopause, male climacteric, viropause, androgen deficiency in aging males (ADAM), partial androgen deficiency in aging male (PADAM), and recently late-onset hypogonadism (LOH), symptomatic late-onset hypogonadism (SLOH), or more accurately, testosterone deficiency syndrome (TDS).^{3,5-8}

Testosterone is the principle androgen hormone responsible for the primary and secondary male sex characteristics;⁷ thus, the lowered testosterone levels will lead to alteration in sexual and psychological function and body composition.⁶ These changes comprise mood swing, depression, poor concentration and memory, anxiety and irritability, sleep problem, loss of libido, erectile dysfunction, reduced muscle mass and strength, loss of body hair, hot flushes, excessive sweating, lack of motivation and decline in general well-being.^{3,4,6,7,9,10} Results of some studies showed that there was a relationship between geriatric syndrome such as osteoporosis, cardiovascular disease and andropause.^{11,12}

Although andropause can be diagnosed through symptoms but not sufficiently, for accurate results laboratory tests should be performed to determine the decrease in testosterone levels.³ From different experimental values of testosterone, bioavailable or free testosterone level is the best test to diagnose andropause.¹⁰ Treatment of andropause is compromised of changes in lifestyle, exercise, diet and testosterone replacement therapy.³ Testosterone Replacement Therapy is indicated to restore testosterone levels to normal and correct the features of androgen deficiency.⁴

With this increase in aged male population and life span in Iran and focus on quality of life, andropause will become a major health issue that needs to be addressed in order to prevent disability and morbidity. In addition, andropause is a new phenomenon in scientific research which has recently attracted the experts' attention but despite its importance for the early diagnosis and treatment, little information is available in the books and journals about the issue.^{6,7,9}

Community health nurses, as people who work in different levels of society, must participate actively in the three levels of prevention. One of the most important roles of nurses is to assess the training need of the community for health promotion.¹³ So "primary care physicians, as the first-line health care providers, are probably the best ones to evaluate the andropause syndrome in aged clients and with early detection and timely treatment they can reduce the cost of health care and complications of andropause.¹³ In addition, physicians will be able to transfer their information about andropause to other health care professionals, specially nurses to increase their knowledge and attitude and then health promotion.¹⁴

The results of studies done in different parts of the world indicate that the level of awareness and knowledge about andropause was low in Health Care Professionals such as primary care physicians but in Iran correct data about this are not available.^{9,15} Also, in

the study done to assess the impact of socio-demographic factors on knowledge and attitude towards andropause among health professionals in Ile-Ife, Nigeria, results showed that 23% of the participants looked with optimism toward andropause.¹⁶ Generally, the PCPs' knowledge of andropause was satisfactory but there were clear gaps as to the depth of knowledge and understanding of the control and treatment of this condition.⁹

Overall, the first step in health education is to analyze the knowledge and attitude of the subjects to determine the next steps in planning and implementation of training programs about andropause, improve men's health, and promote knowledge and attitude of GPs;¹⁷ this study was conducted to reach this goal.

MATERIALS AND METHODS

This is a cross-sectional study that began in February 2014 and the data collection was performed within 4 months. The study subjects consisted of all male GPs working in hospitals, health centers, offices and clinics affiliated to Shiraz University of Medical Sciences. Research has shown that general practitioners as the first level of health care provider are socially and professionally in the best position to assess the andropause period.¹⁸

With regard to the purpose and the type of this study and consideration of assumptions including estimates of error of 5% and 95% confidence, the following formula was used to calculate the sample size of the this study.

Due to the large population of general practitioners in Shiraz and with regard to the fact that validity and reliability of our questionnaire was not reported in previous studies, for each question about 5-10 samples should be considered. Thus, a total of 215 to 430 people could participate in the study but for more accurate results a sample size of 402 practitioners was considered.¹⁹

Sampling was done by cluster method. Generally, there are 31 public and private hospitals in Shiraz; among them, 10 public and

8 private hospitals were randomly selected. Then in each hospital, according to the list of general practitioners working in the center, samples were selected randomly. Totally 402 GPs agreed to participate in the study.²⁰

Inclusion criteria were willingness to participate in the study, filling out the consent form and at least 2 years of experience in practice. The exclusion criteria included being a student in the residency period and trained in andropause.

The instrument used was a self-administered questionnaire developed based on the literature review and sources available on andropause; it was designed to find out the level of knowledge and attitude about andropause. The questionnaire consisted of three main domains. The first part was about demographic characteristics of the participants, and the second and third sections focused on the respondents' knowledge and attitude of andropause, respectively. Questions in the questionnaire included a combination of multiple choice questions in Likert scale. 27 questions were about knowledge scored based on 1 point for each correct answer and a total score of 76. The scores between 55-76 demonstrated good knowledge, those between 31 and 54 represented moderate knowledge and those between 30 and below indicated poor knowledge.

15 items were about attitude scored based on 3-point Likert scale with a maximum score of 3, minimum score of 1 and a total score of 45 for men over 40 years and 36 for men under 40 years of age (the difference in scores is due to the fact that 3 questions were only for men over 40 years).

In order to determine the content validity of the questionnaire, they were investigated by 10 faculty members of Nursing and Midwifery, urologists and statisticians in Shiraz. Also, to determine the face validity of the questionnaire, experts' comments were used. The results showed that the content and face validity of the questionnaire were appropriate.

In order to assess the reliability, a pilot study was done; the questionnaires were filled

out by 40 general physicians. The reliability was confirmed by Cronbach's alpha of 0.723 for the part on knowledge and .68 for the part on attitude. Then, the study was done at a broader level, the questionnaires were filled out by 402 general physicians and Cronbach's alpha was re-calculated. The reliability was confirmed by Cronbach's alpha of .895 for the part on knowledge and .839 for the part on attitude, shown by increasing the number of the samples as well as increased level of reliability.

After determining the validity and reliability of the questionnaire, the researcher attended the workplace of the GPs to fill out the questionnaires. In order to increase the participants' confidence, explanations were provided about the purpose of the study, voluntary participation and completion of the informed consent. After the questionnaires were distributed among the volunteers, the complete questionnaires were collected as soon as possible, preferably on the same day or in the following days. Also, for compliance with ethical issues, correct answers were given to them. The data obtained from the questionnaires were analyzed using SPSS 18. According to the type of variables, Pearson correlation, ANOVA and descriptive statistics were used.

RESULTS

Of 402 GPs participating in the study, 69.60% were family doctors and the rest were general practitioners. Most of the participants were in the age group 40-49 years (37.81) and the

lowest percentage of participants was in the age group 60 years and above (3.73). 25.87% were single, 72.88% married and the others divorced. Most of the participants were employed in the public sector (49%) and the lowest percentage of participants was employed in both private and public sectors (4.97%). In terms of work experience of the participants, most of GPs had a work experience about 10-14 years (25.62 %) and the minority had a work experience of over 20 years (12.43%).

The lowest average scores were related to the premature andropause (1.85±1.13) and the highest mean scores were related to treatment and control of andropause (10.15±4.48). The overall mean score of total knowledge was 29.43±12.69 out of 76, indicating the poor knowledge of GPs about andropause. Table 1 shows the means and standard deviations of different dimension of GP'S knowledge about andropause. If the physicians' knowledge scores, based on the number of correct answers, are divided by 3 categories, 55.2% of the physicians had low level of knowledge, 41.3% moderate, and only 3.5% had a high level of knowledge. Of the 402 GPs participating in this study, 48.8% had heard of andropause and among them familiarity with different terms used to describe the condition of low testosterone in men was widely varying. The most recognized terms were male climacteric (31.4%), ADAM (23.46%), andropause (23.46%), TDS (14.07%), PADAM (6.13%) and SLOH with 3.24%, respectively (Figure 1).

Of 48.8% of the subjects who had heard of

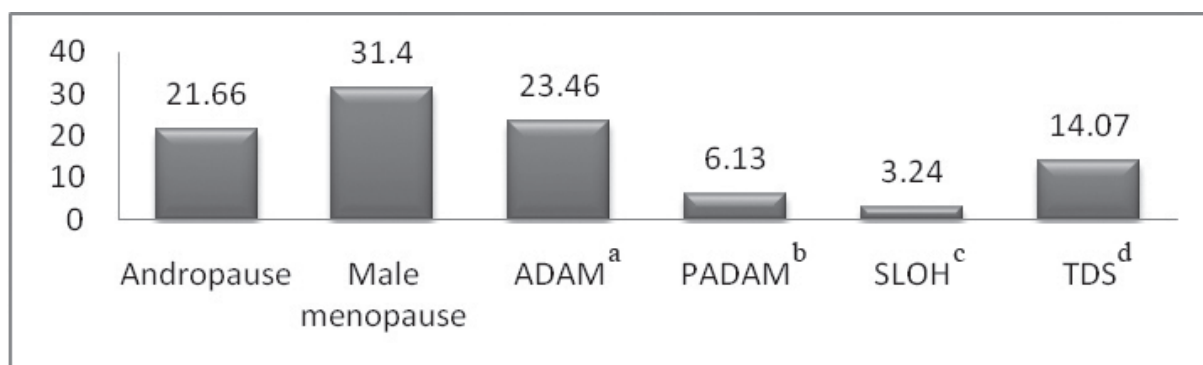


Figure 1: Frequency distribution of hearing the different terms. ^aAndrogen deficiency in aging males; ^bPartial androgen deficiency in aging male; ^cSymptomatic late-onset hypogonadism; ^dTestosterone deficiency syndrome

Table 1: Mean and standard deviation of general physicians' knowledge

Dimension	Minimum	Maximum	Mean±SD
Concept of Andropause	0.00	8.00	2.85±1.97
Causes of Andropause	0.00	8.00	3.69±1.81
Common symptoms of Andropause	0.00	21.00	7.45±4.05
Premature Andropause	0.00	5.00	1.85±1.13
Diagnosis of Andropause	0.00	9.00	3.42±1.90
Treatment of Andropause	1.00	24.00	10.15±4.48
Total knowledge	1.00	72.00	29.43±12.69

andropause, the main source of information was the colleagues, friends (13.4%) followed by continuing medical education (10.7%), advertisements in health media (9.5%), print media (9.2%), and major medical meeting (6.2%).

The results of analysis of variance (ANOVA) showed that there was a significant relationship between occupational status and knowledge about andropause (P<0.001); it means that GPs employed in the public sector gained higher score of knowledge. There was no significant association between knowledge and other demographic characteristics.

The mean score of the GPs' attitude about

andropause was 35.16±4.48 out of 45, reflecting a positive attitude toward andropause. Both age groups, younger than 40 and over 40 years, obtained high scores which reflects positive attitude about andropause (Table 2).

In addition, there was a statistically significant relationship between attitude and demographic characteristics (P<0.05); it means that with an increase in professional history, in married persons, in age group older than 40 years and in participants employed in both the private and public sectors, the andropause attitude grew better. Table 3 shows Mean±SD of general physicians' attitude

Table 2: Mean and standard deviation of general physicians' attitude

Age Groups (years)	N	Minimum	Maximum	Mean±SD
Physicians lower 40	168	24.00	36.00	31.50±2.52
Physicians 40 and older	234	27.00	45.00	37.79±3.65
Total	402	24.00	45.00	35.16±4.48

Table 3: Mean±SD of general physicians' attitude according to demographic characteristics and the relationship between mean score of attitude and characteristics using ANOVA

Demographic characteristics	Minimum	Maximum	Mean±SD	P value	
Age group (years)	Under 30	24	36	31.31±2.37	<0.001
	30-39	24	45	33.04±4.09	
	40-49	28	45	36.91±3.99	
	50-59	30	43	37.96±3.4	
	Upper 60	28	43	38±4.01	
Marriage status	Single	24	45	33.11±4.26	<0.001
	Married	24	45	35.87±4.35	
	Discovered	33	39	36.2±3.03	
Occupational status	Public sector	24	45	34.48±4.36	0.008
	Private sector	25	45	35.73±4.48	
	Both	24	43	36.6±4.78	
Work experience (years)	Under 5	24	36	31.55±2.43	<0.001
	5-9	24	36	31.45±2.65	
	10-14	27	45	37.52±3.89	
	15-19	30	45	37.69±3.61	
	Upper 20	28	43	38.12±3.53	

according to demographic characteristics and the relationship between mean score of attitude and characteristic.

Pearson correlation coefficient showed that there was no relationship between the mean scores of knowledge and attitude toward andropause ($P=0.548$). This means that by increasing the level of knowledge, attitudes did not rise and vice versa. Table 4 shows The relationship between mean score of attitude and knowledge about andropause.

DISCUSSION

This was a cross-sectional study performed to assess the level of the knowledge and attitude about andropause among GPs of Shiraz in 2014. The results showed a low level of knowledge about andropause among GPs (The overall mean score of total knowledge was 29.43 ± 12.69 out of 76). In this regard, several studies have obtained similar results.

In the study done to investigate the level of knowledge, attitudes and practices of health personnel in Larestan regarding andropause, the result showed that the mean scores of knowledge, attitudes and practice in relation to andropause among nursing staff were significantly lower in contrast with those of practitioners. The mean scores of knowledge and practice between nursing staff and practitioners were significantly different ($P < 0.001$) but those of attitude did not differ between the two groups ($P = 0.84$).¹⁵

Results of the study conducted to assess the awareness and perception of androgen deficiency of aged males (ADAM) among men in Osogbo, Nigeria indicated that a large percentage of men had poor awareness about andropause. Among those who had good awareness about this condition, there was still poor knowledge.²¹

Another study was done in North India to assess the awareness of men about andropause; the results showed that their information about this condition and its treatment is low.²²

Another study conducted to investigate the awareness and knowledge of andropause among Chinese males in Hong Kong showed poor knowledge with the mean knowledge score of 5.94.⁶

Also, in a study performed in Victoria, BC, Canada to determine the level of knowledge of general practitioners about andropause, it was found that a large number of participants had heard the term andropause (96.3%). Of the physicians who completed the survey, 92.6% agreed that men experience sometimes similar to women's menopause when they age.

Of 402 GPs participating in this study, 48.8% had heard of andropause and among them the most recognized term was male climacteric (31.4%). In this study a very high percentage of physicians had heard of male climacteric (97.6%) and andropause (96.3%). Colleagues and friends (13.4%) were the major source of andropause information among the GPs. This finding was different from the results in Canada, reporting that continuing medical education was the primary sources of information.⁹

Some studies have reported a general lack of knowledge about andropause by both male population and health care providers,⁶ especially male GPs; however, GPs are the first level of health care provider and in our country they play the role of family physicians and in contact with patients who are frequently consulted, but they are not prepared academically to make the right decision. Therefore, educational interventions and courses are necessary to be held for them.

There was a significant relationship between occupational status and knowledge

Table 4: The relationship between mean score of attitude and knowledge using Pearson correlation

Person correlation	Mean score of attitude	
Mean score of knowledge	Pearson correlation coefficients	0.30
	P value	0.540
	Number	402

about andropause ($P < 0.001$). This finding was different from the results in Nigeria reporting that occupational status of the respondents do not have significant effects on knowledge about andropause ($P = 0.415$).²¹ This could be due to differences in the study subjects in these two studies.

The mean score of the GPs' attitude about andropause was 35.1642 ± 4.48082 out of 45; this reflects a positive attitude toward andropause. In this regard, the study done in Larestan in Iran found similar results. The results of this study showed that the practitioners' attitude about andropause was high (84.2 percent); they believed that andropause significantly affects the quality of life.¹⁵ A study conducted in Netherlands found similar results. In this study, they indicated that seven key domains (energy, emotional, social, social emotional, mental functioning, physical functioning and sexual functioning) should be considered when assessing the impact of andropause. They found that understanding the impact of low testosterone levels on QoL is critical to diagnosis and effective treatment of Andropause.²³

But this finding contradicted the results of the study done in Changzhi City which was investigation of male residents' understanding and attitude toward andropause syndrome. It was shown that they had relatively negative attitudes regarding andropause;²⁴ this could be due to differences in the study subjects and their demographic backgrounds in these two studies.

A major concern is that many men do not accept the concept of male menopause. A high proportion of men inadvertently deny the presence of these changes, especially sexually related ones, and have negative attitude toward andropause. In the past, the attitude of the medical community about andropause was associated with pessimism.⁹ However, with advancement of science and numerous investigations in this field, GP's knowledge is increasing and with increased knowledge, more positive attitude results. A positive attitude for physicians is very important

because strengthening the attitude and proper training of physicians by improving the quality of their practice, diagnosis and treatment reduces the complications of andropause in the community, influences the attitude of other men, and assists them in creating a positive attitude because more exposure and discussion about andropause can help them to accept this condition.²⁵

There was a statistically significant relationship between attitude and demographic characteristics ($P < 0.05$); that is, with an increase in professional history, in married persons, in age group older than 40 years and in participants employed in both private and public sectors, the andropause attitude grew better.

In this regard, a study done in Jakarta investigated the proportion and acceptance of andropause symptoms among the elderly men, finding similar results which showed that marriage status can affect the acceptance of andropause ($P = 0.031$).²⁶ In addition, in a study done in Iran similar results were found in this regard. This study showed a statistically significant positive correlation between professional records and attitude about andropause, i.e. the subjects with higher professional records had a better attitude towards andropause ($P = 0.04$).¹⁵

But the result of the study done in Nigeria showed no significant relationship between the mean score of attitude and age of the participants.¹⁶

There was no statistically significant relationship between the mean score of knowledge and that of attitude about andropause ($P = 0.548$). A study done in Changzhi City found similar results.²³

Limitation of this study include lack of cooperation of some GPs due to high workload and distribution of study subjects in different parts of the city, but through explaining the importance of andropause and by the help of the researcher they were resolved almost.

CONCLUSION

The overall results showed that GPs have a low level of knowledge and positive attitude toward

andropause; thus, there is a need for improved continuing medical education programmers to give GPs the skills to diagnose and manage andropause.

Recommendations from the results of this study consist of planning for courses and educational interventions during the service for GPs about andropause, holding integration programs of health care professionals and the media working together to educate the men, who are the target population, about the probability of men experiencing andropause, establishing special clinics for andropause in health centers and holding internal and external meetings to exchange information and use the experience of others about andropause.

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