Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 7, Issue, 12, pp.24311-24315, December, 2015

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

RESEARCH ARTICLE

ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICE OF MALES ABOUT PROSTATE CANCER, SCREENING AND EARLY DETECTION IN EAST NILE LOCALITY, KHARTOUM SUDAN

***Mohamed Maali Gumaa Mohamed and Suad Mohamed Ali**

Department of Community Medicine, Faculty of Medicine, University of Khartoum

ARTICLE INFO

Article History:
Received 26th September, 2015
Received in revised form
24th October, 2015
Accepted 29th November, 2015
Published online 30th December, 2015

Keywords:

Prostate cancer,
Knowledge,
Perception,
Screening,
Prostate specific Antigen.

ABSTRACT

Introduction: prostate cancer is the commonest cancer in elderly males. It has growing incidence with late stage incurable presentations. Screening andearly detection is the main strategy to compact this disease. Males knowledge and attitude is mandatory to practice screening.
The aim of this study is to assess males knowledge, attitude and practice about screening and early detection of prostate cancer via prostate specific antigen (PSA).
Materials and Method: This is descriptive, community based cross sectional study. 100 males were recruited in East nile locality in Khartoum state on household basis. 45 years old or more married males were invited to participate. Questionnaire was used to collect data on different variables to assess knowledge, attitude and practice.
Results: Knowledge about Ca. prostate nature, symptoms and availability of screening tests was poor. Main source of knowledge was community itself. Attitude about risk and need for screening was good, but very poor screening practice was reported.
Conclusion: poor knowledge, fair attitude and very poor practice were found among studied males. Health care providers were the least source of information. Raising awareness about prostate cancer, its risks and necessity of screening and early detection is a shared responsibility between decision makers and health care providers.

***Citation*: Mohamed Maali Gumaa Mohamed and Suad Mohamed Ali, 2015.** "Assessment of knowledge, attitude and practice of males about prostate cancer, screening and early detection in east nile locality, Khartoum Sudan", *International Journal of Current Research,* 7, (12), 24311-24315.

INTRODUCTION

Prostate Cancer became number one cancer in men with increasing incidence and prevalence in black African ancestry. It emerged in sub-Saharan Africa as the most common cancer and registries record suggests that the disease is increasing in prevalence persistently (Titilola O Akinremi, 2011). In Sudan, prostate cancer is the most common cancer in men. The age-standardized rate is 10.3 and mortality is 8.7 per 100,000 population. It ranked second among all cancers in both sexes after breast in 2012 (Amany Elamin, 2015). It ranked fourth among all cancer sites in Khartoum. However, by gender it ranked first among Sudanese men. It had the highest age-specific rate in seniors aged 65 years and older (Intisar E. Saeed, 2014). A major challenge to treatment of cancer in general and prostate cancer specifically in Sudan, as in most developing countries is the late presentation. Most patients present with advanced stage of disease. Moreover, there is no consensus on effective strategies to reduce risk of prostate cancer and no agreement on effective screening programs (Mostafa A Arafa1, 2010).

****Corresponding author: Mohamed Maali Gumaa Mohamed***
Department of Community Medicine, Faculty of Medicine, University of Khartoum

Screening of prostate cancer with prostate specific antigen (PSA) and digital rectal examination (DRE) was highly investigated, with ability of early detection in curable stage not yet established, screening is still controversial with possible unnecessary harmful results (Mostafa A Arafa1, 2012). Although (PSA) is a controversial instrument for screening, it remains a useful parameter for early detection andtreatment monitoring (Titilola O Akinremi, 2011). A study conducted in Khartoum state published in 2012 about evaluation of PSA with other markers as diagnostic marker for prostate cancer concluded that the serum levels of prostate specific antigen and early prostate cancer antigen 2 are significantly increased in patients with Ca. prostate and can both be effectively used as tumor markers in Ca. prostate diagnosis, screening and early detection of recurrence (Akram H. Awadalla, 2012). According to American cancer society, tests that can detect prostate cancer early are PSA, and DRE. If one or both of those tests were abnormal then its recommended to do either trans rectal ultrasound and/or trans rectal biopsy for confirmation (American cancer society, 2015). PSA stands for prostate specific antigen. It is a protein produced by prostate cells mainly in semen and can be measured with a blood test. It has 2 forms, free and complex (http://www.cancerresearchuk.

org/about-cancer/type/prostate-cancer/about/screening-for-prostate-cancer). PSA levels can be raised if a man has prostate cancer. But the levels can also be raised when a man has other medical conditions, such as enlarged prostate that is not cancer called benign prostatic hyperplasia or BPH.

Agreed on cut off points for screening of prostate cancer by PSA are

- A PSA level of 4 or lower is usually considered normal but some men with this reading will have prostate cancer.
- A PSA between 4 and about 10 is usually caused by an enlarged prostate, not cancer. But some men with this reading will have prostate cancer.
- A PSA level above 10 is a sign that cancer is more likely to be present. But it can also be caused by an enlarged prostate that is not cancer.

In general, the higher the PSA level, the more likely it is that there is a cancer in the prostate (http://www.cancerresearchuk.org/about-cancer/type/prostate-cancer/about/screening-for-prostate-cancer). Men with high risk of Ca. prostate are advised for earlier regular screening for PSA. Those are: with family history of Ca. prostate, black African/caribbean ancestry (http://www.cancerresearchuk.org/ about-cancer/type/prostate-cancer/about/screening-for-prostate-cancer). The association of knowledge about prostate Ca. screening with getting screened is inconsistent in literature, also the motives for men refusing or attending screening is largely unknown (Mostafa A Arafa, 2012).

In Sudan, study revealed that the geographic distribution of cancer patients includes 19.6% of the patients have come from Khartoum state andthe same percentage have come from North Kurdofan state, this indicate that these area has a high incidence of cancerdiseases (Ali Awadalla Ali, 2014). Scant studies were done in Sudan about screening prostate cancer, no studies were found in published literature measuring knowledge of males about Ca. prostate and assessing their readiness for screening and early detection. As compacting cancer in general and Ca. prostate specifically is largely dependent on screening and early detection, perception of men about their risk of affection and importance of regular screening is mandatory to be assessed, the acquisition of a correct knowledge leads toa favorable attitude that can also lead to healthy practices (Elenir Pereira de Paiva, 2010). The aim of this study was to assess knowledge, attitude and practice of males about prostate cancer, screening and early detection by PSA on community based sample, and to investigate the probable barriers hindering screening. Acquisition of such information is important as a snapshot of the situation and as a baseline for planning public health intervention programs against Ca. prostate.

MATERIALS AND METHODS

This is a descriptive, cross sectional, community based study, conducted in East nile locality (Alhadj yousif town). Study population was married males above 45 years old, with no known previous prostate cancer. Convenient sample of 100 participant fulfilling the above criteria were recruited, data collection was on 10 different blocks on variable day times (10.00 am-1.00 pm) /(6.00 pm to 9.00 pm) on household basis to recruit representative sample as much as possible. All suitable candidates in each house were invited to participate. Clarification of the aim of the study was done, confidentiality issues were assured and verbal informed consent was taken from all participants. Data collection was by semi-structured, pre-tested, pre-coded interview questionnaire. Two trained data collectors interviewed participants with supervision of the prime investigator. Variables studied were demographics, knowledge about Ca. prostate was measured in (hearing about Ca. prostate, malignant or not, presenting symptoms and availability of screening tests), attitude was measured in (appreciation of degree of risk of Ca. prostate, and belief in importance of screening and early detection), practice was measured in (past history of screening of Ca. prostate, and obstacles hindering screening process). Field checks, data sorting, editing and quality control issues were secured by the prime investigator. Data management and analysis was done using software SPSS version 20. Frequency tables and charts were used for data presentation.

RESULTS

100 males participated in this study. Most participants (65 %) were less than 51 years old, with only (9 %) more than 61 years, (Table 1). Almost half of participants (48 %) were employers, university or post graduate educated, and of low income, with only (12 %) being retired and (16 %) high income (Table 1).

Table 1. Shows base-line characteristics of studied male sample (n=100)

Character	frequency	Cumulative Percent
(Age)		
45-50 years	65	65 %
51-56 years	19	84 %
56-61 years	7	91 %
More than 61 years	9	100 %
(Occupation)		
Employer	48	48 %
Laborer	24	72 %
Merchant	16	88 %
Retired	12	100 %
(Education)		
Illiterate	5	5 %
Primary school	10	15 %
Secondary school	37	52 %
University or post graduate	48	100 %
*(Income)**		
Low	48	48 %
Medium	36	84 %
High	16	100 %

*Income:- low= less than 750 SD, medium=750-2000 SD, high=more than 2000 SD

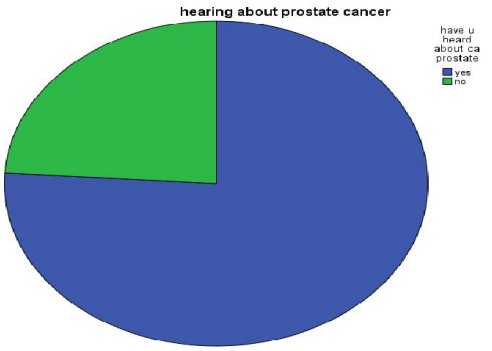

Figure 1. Shows distribution of hearing about Ca. prostate among studied sample

Table 2. Shows frequency distribution of knowledge about prostate cancer among studied male sample (n=100)

Character	Frequency	Cumulative Percent
(Type of Ca. prostate)		
Malignant tumor	21	21 %
Merely a tumor	30	51 %
Have no idea	49	100 %
(Most vulnerable age group)		
Above 45 years	71	71 %
Less than 45 years	3	74 %
All age groups are equal	3	77 %
Have no idea	23	100 %
(Presenting symptoms of Ca. prostate)		
Genitor-urinary symptoms	55	55 %
Others	44	99 %
Have no idea	1	100 %
(Availability of screening test for Ca. prostate)		
Yes	38	38 %
No	32	70 %
Have no idea	30	100 %

76 % of participants had heard about Ca. prostate, with the majority from relative, followed by media and least by health care providers. (Figure 1, 2).

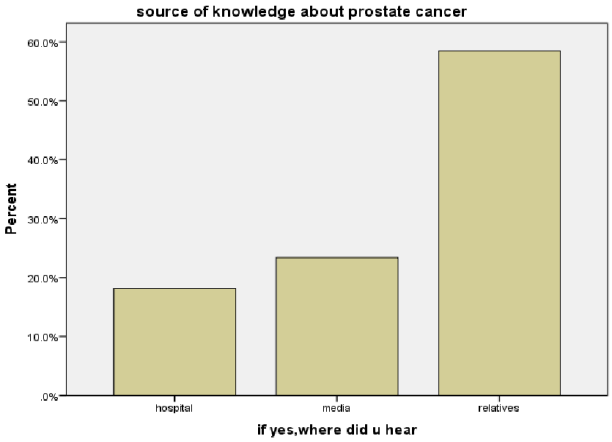

Figure 2. shows distribution of source of knowledge about Ca. prostate among studied sample

Almost half of participants (49 %) have no idea about what is Ca. prostate (malignant or not), majority (70 %) state that the vulnerable age group are elderly males, and more than half of participants (55 %) state that Ca. prostate have genito-urinary symptoms. Regarding availability of screening of Ca. prostate, more than (60 %) replied not available or had no idea at all (Table 2). Regarding attitude of participants, 64 % are convinced that Ca. prostate is so dangerous, with 35% claiming that its not dangerous or had no idea at all, (Table 3).

Table 3. Shows frequency distribution of attitude about prostate cancer among studied male sample (n=100)

Character	Frequency	Cumulative Percent
(Degree of risk of Ca. prostate)		
So dangerous	64	64 %
Not so dangerous	18	82 %
No risk at all	1	83 %
Have no idea	17	100 %
(Belief in early detection of Ca. prostate)		
Yes	98	98 %
No	2	100 %

98 % of participants belief in importance and early detection of Ca. prostate (Table 3), but on the other hand only 4% had screening test for detection of Ca. prostate before, (Table 4).

Table 4. Shows frequency distribution of practice of males regarding screening of prostate cancer (n=100)

Character	Frequency	Cumulative Percent
(History of screening of Ca. prostate)		
Yes	4	4 %
No	96	100 %
(Obstacles of screening of Ca. prostate if exist)		
Unavailability of screening test centers	7	7 %
Tests are expensive	6	13 %
Not important (as no current symptoms)	54	69 %
Others	30	100 %

54% report no past history of screening as not important (had no current symptoms), 13% report inaccessibility or financial obstacles. (Table 4).

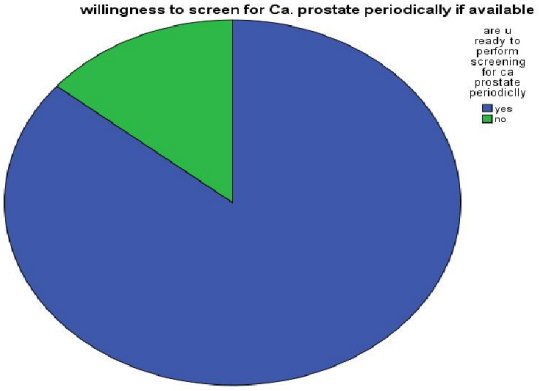

Figure 3. Shows distribution of willingness to perform screening of Ca. prostate regularly if available

86 % of participants report willingness to perform regular screening of Ca. prostate if available. (Figure 3).

DISCUSSION

Two third of this studied sample (100 participant), are between 45- 51 years (65%), half of them (48%) were university and/or post graduated educated, and employers, indicating high level of education with expected good knowledge. 76% of participants have heard about Ca. prostate, with the main source being surrounding community (relatives andnieghbours), followed by media and press, and least by health care providers. This finding points to the decreased role of health care providers in educating and counseling males about Ca. prostate, its risks and methods of prevention and early detection. This resembles finding in study conducted in KSA about association of physicians knowledge and behavior with prostate cancer counseling and screening published in 2010 (Mostafa A Arafal, 2010). The KSA study stated that despite the majority of physicians had strong belief in screening is their direct role, they poorly practice it. Only 57 % of physicians practice counseling and referring patients suspicious of prostate cancer (Mostafa A Arafa1, 2010). Reliance on other sources of knowledge other than health care providers could lead to incorrect information or misconceptions

to flourish especially in countries with complex demographic structure with variety of traditions and beliefs such as Sudan. Regarding knowledge, half participants (49%) had no idea about the type of Ca. prostate (is it malignant tumor or benign), which indicated poor knowledge about the nature of the disease.

60 % of participants replied that there is no screening test available for Ca. prostate or they have no idea at all. This indicates the poor knowledge about prostate cancer and early detection methods, it could be due to individual factors such as lack of interest or financial limitations hindering medical advice sought. Also health system shortage such as unavailability or suboptimal health education programs might lead to poor knowledge levels. Those findings resembles finding in Nigerian population stated in a review article published in 2011 where Ajape et al concluded that "there is remarkable lack of awareness of prostate cancer among the Nigerian urban populace. Prostate cancer screening and serum PSA test for screening is globally unknown among them ". (Titilola, 2011).

Also in Mostafa et al study (Amany Elamin, 2015), poor knowledge was reported about Ca. prostate. On the other hand, study conducted in Brazil published in 2010 found that participants had 64 % proper knowledge about Ca. prostate (Elenir Pereira de Paiva, 2010). This variation in knowledge could be due to sampling variation or different communities characteristics. Considering other domains of knowledge, 70 % of participants report elderly aged males are more prone to develop Ca. prostate, and regarding symptoms, 55% of participants reply genito-urinary symptoms. This represent average knowledge in this domains. Which could be attributed to the fairly well educated fraction of participants in the study sample. Regarding attitude of participant, 64 % are convinced that Ca. prostate is so dangerous, and 98 % of participants belief in importance and early detection of Ca. prostate. Also 35 % of interviewed males thought that Ca. prostate is not dangerous or they had no idea at all, this could represent fair attitude regarding Ca. prostate and its screening and early detection in this studied sample.

This fair attitude could be attributed to rising knowledge about cancers in general in population which is mostly related to press and media. This is similar to Arab countries study carried out in (KSA, Egypt, Jordan) which reported fair attitude toward prostate Ca. examination and screening practices (Mostafa A Arafa1, 2012), In comparison, a study conducted in USA about knowledge, attitude and screening practice among older men regarding prostate Ca., it reported fewer than 10% ofthe men in each survey perceived theirprostate cancer risk to be high; almost 20% perceived no risk of developing thedisease (Conola, 2000). This indicates that attitude toward prostate cancer and its screening in Arab countries including Sudan is similar unlike western countries like USA, most probably due to educational variations, cultures, beliefs and/or religious factors.

Regarding practice, only 4 % of participants underwent screening of Ca. prostate by PSA, in comparison to USA study (http://www.cancerresearchuk.org/about-cancer/type/prostate-cancer/about/screening-for-prostate-cancer), which stated that approximately 60% of the menin each survey reported ever having hada prostate-specific antigen (PSA) test, and Brazil study which reported nearly 30 % proper practice (Elenir Pereira de Paiva, 2010). This finding represent very poor practice in our studied sample regarding screening and early detection (4%). Obstacles and barriers against screening unmasked that more than half (54%) of participant states that there is no need for screening currently as they have no symptoms. This reflect poor knowledge about concept of screening and early detection among participant even when they are symptomatic.

This also gives a clue that there might be factors more than knowledge and attitude that need to be considered to enhance practice, males might need empowerment and encouragement more than appropriate knowledge to adhere to good practice of screening and early detection of prostate cancer. This finding also justifies why most males diagnosed as Ca. prostate present in late stages, and resembles that reported in study conducted in RICK in khartoum state published in 2014, which stated that a total of 78% of Sudanese patients have stage III or IV disease (TNM classification) when they first seek medical treatment (Ali Awadalla Ali, 2014).

Also the Nigerian review stated that Reports from all regions of the country emphasize late presentation as the pattern in Nigerian Ca. Prostate patients (Titilola O Akinremi, 2011). The finding that 86% of participant are ready to enroll in screening program if available, accessible and cost effective in conjunction of poor knowledge, fair attitude and very poor practice indicates that more effort should be done from decision makers and concerned parties in public health and health care providers. MostafaArafaand his colleguesclaims that the motives for men refusing or attending screening is largely unknown (Mostafa A Arafa1, 2012), and on top of that there is no consensus on effective strategies to reduce risk of Ca. prostate, and no agreement on effective screening programs, but they stated that the principal public health approach is to encourage decision making about screening and treatment between physicians and patients (Mostafa A Arafa1, 2010). More is waited from health practitioners in counseling and advising for screening and early detection of Ca. prostate, this was also recommended by the USA study in that physician advice was significantly associated with screening with a PSA test or a digital rectal examination, This result could reflect the influence of medical providers, as physician advice for screening and reported screening were highly correlated.

The study conducted in KSA, Egypt, Jordan published in 2012 stated that attitude depends on level of knowledge and information given to the patient, and that health care providers should increase knowledge delivered to patients (Mostafa A Arafa1, 2012). Major limitations of this study were reliance on relatively small sample size, we used not well established pretested criteria for assessing knowledge, attitude and practice, so we recommend that further studies to be carried out on larger scale with more participants and more objective criteria for assessment. In conclusion, this study found that males have poor knowledge, fair attitude and very poor practice regarding prostate cancer, its screening and early detection.

Health care providers do little role in educating and counseling males. We recommend that more effort should be done from decision makers in raising awareness and encouraging practice of males about screening and early detection of prostate cancer on press, media and organizing other tools (e.g. campaigns). We recommend that PSA test should be made easily accessible and provided if possible free for elderly males for screening and early detection of Ca. prostate. Health care providers should spent more time and effort in educating and counseling males about the nature of Ca. prostate, its risks, importance, measures and tools of screening and early detection.

REFERENCES

Akram, H. Awadalla, Bader Eldien, H., Elabid, Abdelgader A. Almugadam, 2012. Evaluation of Prostate Specific Antigen and Early Prostate Cancer Antigen 2 as Diagnostic Markers for Prostate Cancer among Sudanese with Prostate Enlargement .A study in Khartoum State, Sudan, *Sudanese Journal of Public Health* - April, VOL. 7 No. 2

Ali Awadalla Ali, and Faiza Esmat Ibrahim, 2014. Incidence and geographical distribution of cancer in Radiation and Isotopes Center in Khartoum, Sudan Medical Monitor | July | Vol 9 | Issue 3

Amany Elamin, Muntaser E. Ibrahim, Dafalla Abuidris, Kamal Eldin H. Mohamed, 2015. Sulma Ibrahim Mohammed, Part I: cancer in Sudan—burden, distribution, and trends breast, gynecological, and prostate cancers, Cancer Medicine, 4(3):447–456

American cancer society. Prostate cancer.Cancer information database. 2015

Conola B. Steele, Daniel S. Miller, Christopher Maylahn Robert J. Uhler, MA, and Colleen T. Baker, 2000. Knowledge, Attitudes, and Screening Practices among Older Men Regarding Prostate Cancer, *American Journal of Public Health,* October, Vol. 90, No. 10

Elenir Pereira de Paiva, Maria Catarina Salvador da Motta, Rosane Harter Griep, 2010. Knowledge, attitudes and practices regarding the detection of prostate cancer, Acta *Paul Enferm* ,23(1):88-93,

http://www.cancerresearchuk.org/about-cancer/type/prostate-cancer/about/screening-for-prostate-cancer.

Intisar E. Saeed, Hsin-Yi Weng, Kamal H. Mohamed, Sulma I. Mohammed, 2014. Cancer incidence in Khartoum, Sudan: first results from the Cancer Registry, 2009–2010, *Cancer Medicine*, 3(4): 1075–1084

Mostafa A Arafa1, Danny M Rabah, Ensaf Abdel –Gawad, Fawaz K. Ibrahim, 2010. Association of physicians knowledge and behavior with prostate cancer counseling and screening in KSA, *Saudi Med J.,* vol. 31(11):1245-1250

Mostafa A Arafa1, Danny M Rabah, Iman H Wahdan, 2012. Awareness of Prostate Cancer and Screening Practice in Arabic Communities, Asian Pacific Journal of Cancer Prevention, Vol 13.

Titilola O Akinremi, Chidiebere N Ogo, Ayodeji O Olutunde, 20111. Review of prostate cancer research in Nigeria, Infectious Agents and Cancer, 6 (Suppl 2):S8

****