Investigación y Educación en Enfermería
ISSN: 0120-5307
revistaiee@gmail.com
Universidad de Antioquia
Colombia

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Investigación y Educación en Enfermería, vol. 33, núm. 3, 2015, pp. 415-423
Universidad de Antioquia
Medellín, Colombia

Risk factors for prostate cancer, and motivational and hindering aspects in conducting preventive practices

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Risk factors for prostate cancer, and motivational and hindering aspects in conducting preventive practices

Objective. Identify risk factors for Prostate Cancer (PC), preventive practices, and hindering and motivating factors for disease prevention among workers of a public university. **Methodology**. A descriptive study, conducted with 92 workers who answered a self-administered questionnaire on the variables related to sociodemographic characteristics and clinical risk factors, sources of information about PC, practices related to prevention, and information on the hindering and motivating factors for prevention of the disease. **Results**. Most (95.0%) participants had one or more risk factors for PC; 68.5% underwent completion of the prostate-specific antigen (PSA) test annually at the request of the university; 50.0% of participants never performed the digital rectal examination (DRE); the main source of information was the media (64.1%); the main complicating factor for realization of the yearly preventive screening test was the lack of request for examination by their doctor; and the main motivating reason was recognition of the severity of the disease. **Conclusion**. Most participants had risk factors for the disease, do not perform the DRE, presented difficulties in carrying out prevention, and revealed they do not receive information about the disease from healthcare professionals, which could in turn lead to an erroneous understanding, resulting in hindering factors for practices to prevent PC. Thus, health care managers and multidisciplinary teams should engage in preventive health care for men in order to initiate preventive practices, and clarify any doubts about the disease.

Key words: prostatic neoplasms; prevention and control; workers.

Fatores de riesgo para cáncer de próstata y aspectos motivadores e dificultadores en la realización de las prácticas preventivas

Objetivo. Identificar los factores de riesgo para Cáncer de Próstata (CP), las práticas preventivas, y los factores dificultadores y motivadores para prevención de esta enfermedad en trabajadores de una universidad pública. **Metodologia**. Estudio descriptivo

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Article linked to research: Risk factors, barriers and stimulating sources for the prevention of prostate cancer.

Conflicts of interest: none.

Received on: September 30, 2014.

Approved on: September 1, 2015.

How to cite this article: Gomes CRG, Izidoro LCR, Mata LRF. Risk factors for prostate cancer, and motivational and hindering aspects in conducting preventive practices. Invest Educ Enferm. 2015; 33(3): 415-423

DOI: 10.17533/udea.iee.v33n3a04

realizado con la participación de 92 trabajadores quienes respondieron un cuestionario autoaplicado sobre variables relacionadas con la cacterización sociodemográfica y clínica, factores de riesgo, fuentes de información sobre el CP, prácticas relacionadas con la prevención e información sobre factores dificultadores y motivadores para la prevención de la enfermedad. **Resultados**. La mayoría (95.0%) de los participantes presentó uno o más factores de riesgo para CP; el 68.5% se ha realizado anualmente el examen de antígeno prostático específico por solicitud de la Universidad; al 50.0% nunca le han realizado el examen digital retal (EDR); la principal fuente de información sobre CP fue la impresa (64.1%). El principal factor que dificulta la realización de la prevención anual fue la falta de solicitud de los exámenes por el médico tratante; el factor de motivación más importante es el reconocimiento de la severidad de la enfermedad. **Conclusión**. La mayoria de los participantes presentó factores de riesgo para la enfermerdad, no realiza el EDR, presentó dificultades realizar la prevención o rebeló aun no recibir informaciones sobre la enfermedad de los profesionales de la salud, por lo que podría acarrear um bagaje erróneo de conocimientos, resultando en factores dificultadores para las prácticas preventivas de CP. De esta forma, se hace necesario que los gestores de salud y los equipos multidisciplinarios se empeñen e salud preventiva de los hombres, con el fin de propiciar prácticas preventivas y aclarar posibles dudas sobre esta enfermedad.

Palabras clave: neoplasias de la próstata; prevención y control; trabajadores.

Fatores de risco para o câncer de próstata e aspectos motivadores e dificultadores na realização das práticas preventivas

Objetivo. Identificar os fatores de risco para o Câncer de Próstata (CP), as práticas preventivas, e os fatores dificultadores e motivadores para prevenção da doença entre trabalhadores de uma universidade pública. **Metodologia**. Estudo descritivo, realizado com 92 trabalhadores que responderam a um questionário auto aplicável sobre as variáveis relacionadas à caracterização sócio-demográfica e clínica, fatores de risco, fontes de informação sobre o CP, práticas relacionadas à prevenção e informações a respeito dos fatores dificultadores e motivadores para a prevenção da doença. **Resultados**. A maioria (95.0%) dos participantes apresentou um ou mais fatores de risco para o CP; 68.5% se submeteram à realização do exame antígeno prostático específico anualmente por solicitação da Universidade; 50.0% dos participantes nunca realizaram o exame digital retal (EDR); e a principal fonte de informação foi a imprensa (64.1%); o principal fator dificultador para realização da prevenção anual foi a falta de solicitação dos exames pelo médico e a principal motivação foi o reconhecimento da severidade da doença. **Conclusão**. A maioria dos participantes apresentou fatores de risco para a doença, não realiza o ERD, apresentou dificuldades para realizar a prevenção e revelou ainda não receber informações sobre a doença advinda de profissionais de saúde, o que, por conseguinte, poderia acarretar em uma bagagem errônea de informações, resultando em fatores dificultadores para práticas preventivas do CP. Desta forma, faz-se necessário que gestores de saúde e equipes multidisciplinares se empenham na saúde preventiva dos homens, a fim de iniciar práticas preventivas, e esclarecer possíveis dúvidas sobre a doença.

Palavras chave: neoplasias da próstata; prevenção e controle; trabalhadores.

Introduction

Prostate Cancer (PC) occurs when prostate tumor cells begin to multiply in a disorderly fashion.[1] Worldwide, it is considered a cancer of the elderly, because its incidence is more common in men over the age of 65 years.[2] 2014 data support this statement and indicate that 62% of the diagnosed cases in the world occur in men over the age of 65.[2] Global estimates made in 2012 indicate that PC is the second most common cancer in men, and that an approximate rate of 70.0% of the cases are diagnosed in developed areas such as Australia, Western Europe, and North America,

which concentrate the highest incidence rates.[2] In Brazil, the estimates for the year 2014 show that PC had an estimated risk of approximately 71 new cases per 100 000 men. The number of new cases is expected to increase by approximately 60% by the year 2015. It is believed that this increase is the result of changes in methods of diagnosis, improvement in the quality of the country's information systems, and increasing life expectancy of the population.[2]

Aging is a well-established risk factor for predisposition to the development of PC, since approximately 62.0% of the world's cases involve men aged over 65 years.[2] Food rich in saturated fat, including animal fat; low-fiber diets;[4] little exposure to the sun with consequent deficit of vitamin D;[3] and family history and race/ethnicity are also cited as risk factors for the disease.[2-4] Studies show that black men are more affected with PC and are 1.6 times more likely to be diagnosed with the disease than white men.[4] Regarding the clinical manifestations in its early stages, the disease is usually asymptomatic. Over time, the tumor develops, becomes sufficiently large, and advances on the bladder neck causing urinary obstruction, which leads to manifestation of signs and symptoms such as difficulty and increased frequency of urination, urinary retention, and decreased force of the urine stream.[5] Blood or semen can also appear in the urine and ejaculation can be painful.[6,7] Given this context, performing screening tests is essential. According to the World Health Organization, early detection comprises two strategies: one for the person presenting initial signs and symptoms of the disease (early diagnosis), and the other focused on people who are apparently healthy (tracking).[8]

The tests used to diagnose PC are: digital rectal exams (DRE), Prostate Specific Antigen (PSA), transrectal ultrasound, bone scintigraphy, and histopathological study of prostate tissue obtained by biopsy, which should be indicated when abnormalities are identified in the DRE and PSA.[9] The combination of PSA and DRE is the most used diagnostic to find malignant cells because it is more sensitive than either of the two individually.[5] In Brazil, opportunistic screening is recommended, that is the annual DRE and the monitoring of PSA serum levels in men over 45 years of age with disease cases in the family, or who are black, and from the age of 50 for others.[10] Many factors can interfere positively or negatively in the decision-making for conducting these tests. The embarrassment of being tested, lack of information, fear of discovering the disease, or the secondary consequences of treatment such as sexual dysfunction and urinary incontinence are some of the aspects that can contribute to not conducting the diagnosis and early treatment. Conversely, the greater the exposure to information about the disease, the greater the stimulus for the diagnostic examinations.[11,12]

Thus, nursing plays an important role by acting in everyday or planned situations, with educational interventions from the perspective of health promotion and early detection of possible diseases. Nurses are responsible for providing guidance about risk factors and possible prevention of the disease, and raising awareness about carrying out diagnostic tests.[13] Whereas many studies have sought to understand the importance of carrying out the diagnostic tests related to PC, only a few have aimed at analyzing the reasons for not performing them. Given the above, the question is: what are the hampering factors and the reasons for not carrying out the diagnostic tests? What encourages men to carry out the diagnostic tests? And, what are the most observed risk factors? Thus, as PC the second most prevalent type of cancer that affects men, it is important to clarify these issues in order to contribute to discussions about PC prevention and provide data to support the work of health professionals. From this perspective, this study was conducted in order to identify risk factors for PC, preventive practices, and hindering and motivating factors for disease prevention among workers of a public university.

Methodology

We performed a cross-sectional, descriptive study with a quantitative approach, carried out with

non-teaching employees of a public university in the state of Minas Gerais, Brazil. The study population consisted of 114 men, representing all workers who were not teachers, who were 45 years or older. Of these, the non-teacher workers who were active at the University under study were chosen, thus excluding retired workers and those who, during the data collection period, were on sick leave, vacation, or away from the institution for any other reason. Hence, three men were excluded because they retired, four for refusing to participate, and 15 because they were away or on vacation. The sample therefore consisted of 92 workers. Access to the 114 men who made up the population of this study was possible due to a list of personal data (name, contact, allocated sector) provided by the Human Resources department of the above-mentioned federal university.

Data collection was conducted from November 2012 to April 2013 and consisted of using a data collection instrument developed by the researchers, which included the following variables of interest: sociodemographic characteristics (age, marital status, ethnicity, income, religion, position or function); clinical characterization (current or former diagnosis of PC or of another type of cancer); risk factors discussed; sources of information on PC; preventive practices (whether or not needing information about the disease, frequency of consultations with urologist, performance or not of preventive examinations and frequency); as well as identification of the limiting and motivating factors for the prevention of the disease. Data analysis was performed using the SPSS (Statistical Package for the Social Sciences) version 20.0 and analyzed using descriptive statistics (frequency, mean, and standard deviation). This study complies with the resolution 466/12 of the National Research Ethics Committee involving human subjects and was approved by the Research Ethics Committee of the university under study.

Results

Sociodemographic and clinical characterization. The study sample consisted of 92 participants whose average age was 52.7 ± 5.2 years, ranging between 45 and 67 years. The average family monthly income was 4276 ± 3.4 reais. With regard to skin color, 68.5% identified as white. As for religion, 46.7% reported being practicing Catholics. With regard to marital status, 67.4% were married or living in common-law marriage, of whom 57.6% reported performing the PSA test and 37.0% performed the DRE. It was found that 56.5% of men lived with their wife and children. The average schooling was 13.5 ± 4.34 years. The clinical features allowed us to identify that 90 (97.8%) participants did not have a current or previous diagnosis. Two participants (2.2%) were diagnosed with PC; they annually performed the PSA blood test and mentioned that they had already done the DRE once. About having a current or previous diagnosis of other type of cancer, all participants declared not to have this diagnosis. Of these, 84.8% (n = 78) declared that they annually performed the PSA and 50% (n = 78 that they took the DRE (n = 46).

Risk factors for PC. In verifying the presence of risk factors for PC, it was found that 87 (94.6%) participants had one or more factors, the main ones being the age of 50 years or higher (n = 65 / 70.7%) and a diet high in saturated fat (n = 18 / 19.6%), followed by family history of cancer (father or brother) (n = 17 / 18.5%), little sun exposure (n = 17 / 18.5%), smoking (n = 16 / 17.4 %), and a diet low in fibers, vegetables, fruits and/or grains (n = 15 / 16.3%).

Sources of information about PC. Most participants (89 or 96.7%) reported having received information about the disease from one or more sources. However, three (3.3%) reported never having been informed about this type of cancer. The sources that most informed the participants were, respectively, TV or radio (59, 64.1%), newspapers and magazines (47, 51.1%), and medical consultation with a urologist (46, 50.0%), followed by friends (35, 38.0%), the Internet (27, (29.3%), and finally, nurses or other health professionals (21, 22.8%). It is worth noting that the instrument allowed the participants to identify more than one source from which they had obtained information about PC.

When asked about the need for more information about PC, 55 (59.8%) participants reported that this was necessary and 37 (40.2%) said they did not consider this to be a necessity.

Practices related to PC prevention. Regarding the frequency of visits to the urologist in order to carry out a periodic assessment, 45 (48.9%) participants responded that they attend annually, 16 (17.4%) had never done this, 15 (16.3%) had done this only once, 13 (14.1%) do it every two years or more, and 3 (3.3%) only go to the urologist when they feel that something is wrong. Concerning the frequency at which they take the blood PSA test, 78 (84.8%) of the men take it annually, 7 (7.6%) every two years or more, 5 (5.4%) only took it once, and 2 (2.2%) participants reported never having taken it. As for the frequency at which they underwent the digital rectal examination of the prostate, 46 (50.0%) of the men reported never having had it, 24 (26.1%) had it annually, 14 (15.2%) said they had the examination once, and 8 (8.7%) participants reported having the exam every two years or more.

Table 1. Description of sociodemographic characteristics of 92 workers of a public university in Minas Gerais state and rate of PSA and DRE tests

Characteristics	Total	PSA Yes	PSA No	DRE Yes	DRE No
Race					
White	63 (68.5%)	52 (56.5%)	11 (12.0%)	33 (35.9%)	30 (32.6%)
Brown	24 (26.1%)	22 (23.9%)	2 (2.2%)	10 (10.9%)	14 (15.2%)
Black	3 (3.3%)	03 (3.3%)	0 (0.0%)	2 (2.2%)	1 (1.1%)
Other	2 (2.2%)	1 (1.1%)	1 (1.1%)	1 (1.1%)	1 (1.1%)
Residing					
With wife and children	52 (56.5%)	45 (48.9%)	7 (7.6%)	27 (29.3%)	25 (27.2%)
Only with spouse / partner	15 (16.3%)	11 (12.0%)	4 (4.3%)	8 (8.7%)	7 (7.6%)
Alone	13 (14.1%)	13 (14.1%)	0 (0.0%)	6 (6.5%)	7 (7.6%)
Other	12 (13.1%)	9 (9.8%)	3 (3.3%)	5 (5.4%)	7 (7.6%)
Marital status					
Married / common-law Married	62 (67.4%)	53 (57.6%)	9 (9.8%)	34 (37.0%)	28 (30.4%)
Single	20 (21.7%)	17 (18.5%)	3 (3.3%)	7 (7.6%)	13 (14.1%)
Other	10 (10.9%)	8 (8.7%)	2 (2.2%)	5 (5.4%)	5 (5.4%)
Religion or sect					
Practicing Catholic	43 (46.7%)	37 (40.2%)	6 (6.5 %)	25 (27.2%)	18 (19.6%)
Non-practicing Catholic	30 (32.6%)	25 (27.2%)	5 (5.4 %)	13 (14.1%)	17 (18.5%)
Evangelicals and other	13 (14.2%)	7 (7.6%)	6 (6.5%)	5 (5.4%)	8 (8.7%)
None / atheist	6 (6.5%)	5 (5.4 %)	1 (1.1%)	3 (3.3%)	3 (3.3%)

Hindering factors and reasons for not taking the PC prevention exams. Most participants (67 / 72.8%) reported obstacles to taking preventive measures to prevent the disease, the main ones being: the physician's failure to request examination (48.1%), absence of family history of the disease (37.7%), and absence of disease-related symptoms (31.2%).

Motivating factors and awareness as to importance of being screened to prevent PC. It was identified that 25 (27.2%) men feel motivated for prevention and are aware of the importance of performing diagnostic tests. The main motivating and awareness factors are, respectively: ease of access to health services (96.0%), recognition of the benefits in doing the exams early (92.0%), and recognition of the severity of the disease (64.0%).

Table 2. Obstacles to undergoing screenings to prevent PC among 67 participants

Difficulty	Number	Frequency (%)
Physician's failure to request examinations	37	48.1
No family history of the disease	29	37.7
Absence of disease-related symptoms	24	31.2
Lack of time to take the exams	20	26.0
Considers oneself careless about health in general	17	22.1
Lack of knowledge about the symptoms of the disease	14	18.2
Embarrassment	10	13.0
Lack of trust in the physician	7	9.1
Little interaction with the physician	5	6.5
Fear of discovering the disease	5	6.5

Table 3. Motivating factors and awareness of the importance of being screened to prevent PC among 25 participants

Factors	Number	Frequency (%)
Easy access to health facilities	24	96.0
Recognizes the benefits of being screened early	23	92.0
Recognizes the severity of the disease	16	64.0
Has social support and wife's stimulus for prevention	13	52.0
Medical recommendation	13	52.0
Time availability	10	40.0
Recognizes that family history of the disease exists	9	36.0
Considers oneself as being in old age	6	24.0

Discussion

Several risk factors have been identified as determinants for an increased incidence of PC. This study found that most participants (70.7%) are aged over 50, 19.6% reported ingesting a diet high in saturated fat, and 18.5% had family history of PC. Age is a major risk factor for PC, since both the incidence and mortality rates increase significantly after 50 years of age.[9] According to Brazil's National Cancer Institute (INCA), a body of the Ministry of Health responsible for cancer prevention and control in the country, a diet rich in fruits, vegetables, beans, and whole grains and low in fat, especially animal, helps reduce the risk of PC. In this sense, other recommended healthy habits include doing at least 30 minutes of physical activity daily, maintaining the proper weight-to-height ratio, reducing alcohol consumption, and not smoking.[1] Men whose father or brother had PC before the age of 60 have a 3- to 10- fold higher risk of having the disease compared to the general population, which may reflect not only genetic (hereditary) factors, but also the eating habits or risky lifestyle of some families.[9]

Some authors argue that in the presence of risk factors, health professionals should adopt primary care prevention strategies for the male population with interventions aimed at healthy individuals.[14]

With respect to sources of information about PC, most participants reported having already obtained information, first through electronic media (TV or radio), followed by newspapers or magazines, and medical consultation with an urologist. Nurses and other health professionals were referred to by only 22.8% of the respondents. Despite the power that information assumes in PC prevention, it is necessary to note that information does not always result in prevention.[3] A Brazilian study corroborated this assertion by finding that 20.7% of the medical faculty of a university, even having easy access to information and clinical and complementary diagnostic services, never performed preventive practices of PC screening.[15]

Unlike this case, which calls into question the insouciance of well-educated and high-income men regarding PC prevention, a Colombian study in 2005 found that misinformation is more acute amidst the male population with a lower level of education and socioeconomic status, demanding educational activities geared mainly towards this group.[16] In the present study, participants have a favorable socioeconomic situation, an average monthly income of US $1 200, yet most do not make appointments for screening and prevention tests. A 2006 Brazilian research work found that the lack of information about the DRE exam was one of the reasons cited by participants for not doing it.[11] Therefore, we emphasize the importance of educational campaigns and the engagement in activities with health professionals, such as the development of illustrative and educational materials that facilitate understanding and awareness among the target public.[17]

In this study, it was found that 84.8% of the participants do the PSA blood test annually and 50.0% have never done the rectal exam. These data raise questions about which men do or don't do PC tracking and prevention exams. It was also found that 48.1% of participants do not do the PSA and DRE because their physician does not recommend these exams, 37.7% do not do them because they have no family history of the disease, and 31.2% mentioned that they do not realize prevention for lack of symptoms related to the disease. Consistent with these findings, a qualitative study found that the greatest difficulties reported by men for not performing the tests were lack of information about the digital rectal and the PSA exams, the health professional's resistance to request the PSA and DRE exams, prejudice, and the feeling of shame while undergoing the rectal examination.[10] US researchers claim that lack of access to health care, socioeconomic status, inadequate knowledge, fear, doctor-patient communication, distrust of the medical profession, and aversion to digital rectal examination are possible barriers to screening PC.[18]

The imaginary of being a man can imprison the masculine in cultural beliefs, hindering the adoption of self-care practices: given that in this conception man is viewed as virile, strong, and invulnerable, seeking health care in a preventive approach could provoke feelings of weakness, fear, and insecurity, which could possibly involve threaten this socially instituted masculinity. Another important point that reinforces men's low demand for health services would be the fear of discovering a serious illness, while considering not knowing as a factor of "protection". The shame of exposing the body to a health professional, especially its anal area, in the case of PC prevention is also considered a complicating factor for the demand for a health professional.[19]

With regard to the motivation for annual PSA and DRE screening, less than half of the participants feel motivated to accomplish them. This finding is of concern and should be considered in prevention and health promotion strategies for men.[19] The data show that the recognition of the disease's severity, the benefits in carrying out the tests early, and concern about PC are the main aspects that make men more aware of the importance of annual prevention. Through information, men recognize the signs and symptoms that they feel and relate to the need to go to a urologist. The set of knowledge held by the individual on PC is considered an incentive to being screened.[10] A US publication highlighted that man's care for the prostate begins when individuals become

aware of the potential changes to health that can affect the prostate.[20] Thus, a prevention strategy is the provision of information on prostate health for adolescents. This early education awareness should inform young people about any signs or symptoms of prostatic change, also stressing the importance of avoiding the risk factors and maintaining a healthy lifestyle.[20]

Conclusion. Most participants had risk factors for the disease, had not had a DRE screening, presented difficulties in carrying out prevention, and revealed not having received information about the disease from healthcare professionals, which therefore could result in an erroneous set of information, resulting in hindering factors for preventive practices of PC. It was also noted that health professionals are not the main promoters of prevention, but the press. The findings of this study are intended to draw the attention of the multidisciplinary team to the preventive health of men. It is extremely important to extend the actions on primary care to the male population, and to pay attention and verify whether users have age and hereditary factors that rank them to start detection tests. Also, in doctors' offices information about PC must be present. All professionals should be trained to answer questions that permeate man's imaginary, especially with regard to masculinity. It is suggested that educational information and PC prevention programs be prepared by health managers, since the main stimulating factor for the annual preventive examinations was men's awareness of the severity of the disease.

References

1. Sociedade Brasileira de Urologia. Câncer de próstata: o que é? [Internet]. Rio de Janeiro: Sociedade Brasileira de Urologia; 2015 [cited Agost 8, 2015]. Available from: http://www.sbu.org.br/publico/?doencas-urologicas&p=465
2. BRASIL. Ministério da Saúde. Instituto Nacional de Câncer. Estimativa 2014: Incidência de Câncer no Brasil/ Instituto Nacional de Câncer José Alencar Gomes da Silva, Coordenação de Prevenção e Vigilância[Internet] Rio de Janeiro: INCA. 2014 [cited May 13, 2015]. Available from: http://www.inca.gov.br/estimativa/2014/index.asp?ID=7
3. Gomes, R; Rebello LEFS; Araujo FC; Nascimento E. A prevenção do câncer de próstata: uma revisão da literatura. Ciênc Saúde Colet. 2008; 13(1):235-46.
4. Leitzmann M F; Rohrmann, S. Risk factors for the onset of prostatic cancer: age, location, and behavioral correlates. JClin Epidemiol. 2012: 4:1–11.
5. Calabrese, DA. Prostate Cancer in Older Men. Urol Nurs. 2004; 24(4):258-69.
6. Turner, B. Diagnosis and treatment of patients with prostate cancer: the nurse's role. Nurs Stand. 2007; 21(39):48-56.
7. Held-Warmekessel, J. What your patient needs to know about prostate. Nursing. 2002; 32(12):36-42.
8. World Health Organization. National cancer control programs: policies and managerial guidelines. 2nd Ed. Geneva: WHO; 2002.
9. Brasil. Ministério da Saúde. Instituto Nacional de Câncer. Câncer da próstata: consenso - Secretaria Nacional de Assistência à Saúde. Coordenação de Prevenção e Vigilância – Conprev [Internet]. Rio de Janeiro: INCA; 2002 [cited May 13, 2014]. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/inca/manual_prostata.pdf
10. Sociedade Brasileira de Urologia. Recomendações para o câncer de próstata [Internet]. Rio de Janeiro: Sociedade Brasileira de Urologia; 2013 [cited May 13, 2014]. Available from: http://www.sbu.org.br/?noticias&id=1701
11. Nascimento, EP do, Florindo AA, Chubaci RYS. Exame de detecção precoce do câncer de próstata na terceira idade: conhecendo os motivos que levam ou não a sua realização. Rev Baiana Saúde Pública. 2010: 34(1):7-18.
12. Paiva EP, Motta MCS, Griep RH. Barriers related to screening examinations for prostate cancer. Rev. Latino-Am. Enfermagem. 2011; 19(1):73-80.
13. Medeiros AP, Menezes MFB, Napoleão AA. Fatores de risco e medidas de prevenção do câncer de próstata: subsídios para a enfermagem. Rev Bras Enferm. 2011; 64(2):385-8.
14. Jayachandran, Freedland. Prevention of Prostate Cancer. Am J Men Health. Am J Mens Health; 2008; 2(2):178-89.

15. Miranda PSC, Côrtes MCJW, Martins ME, Chaves PC, Santarosa RC. Práticas de diagnóstico precoce de câncer de próstata entre professores da Faculdade de Medicina – UFMG. Rev Assoc Med Bras. 2004; 50(3):272-5

16. Lucumí-Cuesta DI, Cabrera- Arana GA. Creencias de hombres de Cali. Colômbia sobre el examen digital rectal: hallazgos de um estúdio exploratório. Cad Saúde Pública. 2005; 21(5):1491-8.

17. Lima ACF, Silva KVM, Caetano JA, Lima MA, Andrade LM. Conhecimento dos trabalhadores de uma universidade privada sobre a prevenção do câncer de próstata. Cogitare Enferm. 2007;12(4):460-5.

18. Reynolds D. Prostate Cancer Screening in African American Men: Barriers and Methods for Improvement. Am J Men Health. 2008; 2(2):172-7.

19. Gomes R, Nascimento EF, Araújo, F. Por que os homens buscam menos os serviços de saúde do que as mulheres? As explicações de homens com baixa escolaridade e homens com ensino superior. Cad Saude Publica. 2007; 23(3):565-74.

20. Porshe DJ. Prostate Health: Definitely a Men's Health Issue. Am J Men Health. 2008; 2(2):105.