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Establishment of a Rehabilitation Center for Patients with Prostate Cancer

ALireza Ghadian ¹, Mohammad Javanbakht¹, Somayeh Mohammadi², Mehrdad Ebrahimi^{1,*} and Mahdi Ramezani-binabaj^{3,**}

¹Nephrology and Urology Research Center, Baghiatallah University of Medical Sciences, Tehran, Iran
²Department of Cardiology, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran
³Department of Urology, Tehran University of Medical Sciences, Tehran, Iran

^{*} Corresponding author: Nephrology and Urology Research Center, Baghiatallah University of Medical Sciences, Tehran, Iran. Tel: +98-2181262073, Fax: +98-2188067114, Email: ebrahimi.mehrdad157@gmail.com

"Corresponding author: Department of Urology, Tehran University of Medical Sciences, Tehran, Iran. Tel/Fax: +98-2181262073, Email: ramezanimahdi70@gmail.com

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Abstract

Background: Prostate cancer is one of the leading causes of mortality in Iran and is the third most common cancer in male population.

Objectives: The present study aimed to evaluate the necessity and efficacy of establishing a specific rehabilitation center for patients with prostate cancer.

Methods: In this basic-applied research, we proposed the establishment of a rehabilitation center to support and decrease the complications of various treatments in patients with prostate cancer. After entering the rehabilitation process, a well-educated nurse and general physician trained in one of the similar European centers supported the patients to help themselves cope with unresolvable symptoms. To evaluate the patients' satisfaction with the services offered by this rehabilitation center, the patients were asked to fill the Prostate Cancer-Related Quality of Life Questionnaire seven months after the first session.

Results: In this study, 133 patients with prostate cancer (71 persons in the control group and 62 persons in the conservative treatment group) underwent the analysis. The participants' mean age was 62.8 ± 2.31 years in the control group and 63.3 ± 4.54 years in the treatment group (P = 0.613). Moreover, the participants' mean lifestyle scores were 5.3 ± 2.5 and 5.8 ± 2.8 in the control and treatment groups before the supportive care, respectively (P = 0.460). However, following the intervention, the scores were 5.3 ± 2.1 and 7.6 ± 1.9 in the control and treatment groups, respectively (P = 0.001). The mean lifestyle score was significantly higher after supportive care in the treatment group (P = 0.001).

Conclusions: A prostate cancer-specified rehabilitation center providing supportive care by an educated healthcare professional can significantly improve the quality of life of patients with prostate cancer.

Keywords: Prostate Cancer, Rehabilitation, Quality of Life, Rehabilitation Center

1. Background

Over the past ten years, prostate cancer with an increasing incidence has been one of the most common cancers among different populations worldwide (1, 2). Prostate cancer has the highest prevalence in Australia, New Zealand, North America, and West Europe, a median prevalence in East Europe and Africa, and the lowest prevalence in Asia. This is while, the reason for such prevalence disparity is not completely detected (1, 3). Prostate cancer is one of the leading causes of mortality in Iran and is the third most common cancer in male population and the sixth most common cancer in both genders (4).

over the last years, screening programs for prostate

cancer have been seriously followed up by relevant healthcare organizations, and their necessity has been highlighted to the public. Accordingly, we have increased the number of confirmed cases in younger ages and the earlier stages of the disease, resulting in remarkable improvement in treatment efficacy.

There are various treatment options for prostate cancer making physicians select the most appropriate regimen for patients; however, a high complication rate is common among these options (5, 6). Previous studies have revealed that prostate cancer patients undergoing various diagnostic and therapeutic interventions suffer from abundant physical, sexual, and psychological problems (5-

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7). An international study showed that prostate cancer patients need supportive care because of undesired symptoms and their consequent anxiety (8-10). Accordingly, providing support in a rehabilitation center for patients with prostate cancer is a need not having been met yet (9, 10).

2. Objectives

The present study aimed to evaluate the necessity and efficacy of establishing a specific rehabilitation center for patients with prostate cancer at the Baqiyatallah University of Medical Sciences, Tehran, Iran.

3. Methods

The present study is a this basic-applied research, which proposed the foundation of a rehabilitation center to support and decrease the complications of various treatments in patients with prostate cancer. The protocol of the present study was registered at the Ethics Committee of the Baqiyatallah University of Medical Sciences, Tehran, Iran. Prostate cancer patients who had already initiated the appropriate treatment course were assessed in terms of inclusion criteria and were selected using the simple random sampling method. We included patients with urological, intestinal, and sexual treatment complications and normal prostate-specific antigen (PSA) levels (postsurgical: \leq 0.2 ng/mL, post-radiotherapy: \leq 0.2 ng/mL, and post-hormone therapy: \leq 10 ng/mL), who referred to the Urology Clinic of Baqiyatallah Hospital, Tehran, Iran. Then the patients were referred to the mentioned rehabilitation center by their urologist or oncologist. All the patients signed an informed consent form prior to the rehabilitation process.

After initiating the rehabilitation process, a welleducated nurse and general physician trained in one of the similar European centers supported the patients to help themselves cope with unresolvable symptoms. This educated person, called a "supporter" in this rehabilitation center, was in charge of supporting patients in four domains:

(1) Informing patients of the required actions for the prostate cancer treatment: (A) removing diagnosis and treatment effects for patients; and (B) assessing patients' unmet needs.

(2) Determining patients' symptoms: (A) assessing possible symptoms such as incontinency, frequency, gastrointestinal problems, sexual function, and fatigue; and (B) assessing patients' worries.

(3) Facilitating self-control and behavioral activation: (A) determining the objectives of treatment and activities; (B) providing behavioral control, pelvic floor exercises, bladder rehabilitation techniques; (C) supporting weight loss and exercise; and (D) proper referring to specialist

(4) Facilitating cognitive reconstruction: (A) determining specific conditions or thought patterns making patients sad; (B) providing appropriate support; and (C) providing solutions for constant self-motivation.

At the beginning of the study, the supporter reviewed the assigned patient's records to know about the patient's main problems. Then further discussions and evaluations were performed during on-site sessions. The first meeting was held in the Urology Clinic of Baqiyatallah Hospital and lasted for 30 - 45 minutes. The patient referred to the physician in case of emergency or any other required action, and the supporter determined the need and frequency of subsequent meetings. The sessions' frequency, topic, and content were recorded in the patient's profile and delivered to the physician. Telephone follow-ups were also performed in pre-determined sessions to evaluate the treatment progress. In addition to the pre-printed brochures provided to the patients, they could also visit some website designed to support them and ask their questions via an online platform. To evaluate patients' satisfaction with the services of this rehabilitation center, they were asked to fill the Prostate Cancer-Related Quality of Life Questionnaire seven months after the first session (11).

Data were analyzed using statistical package for social sciences (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp). Descriptive analysis was performed using mean and standard deviation and percentages and frequencies. Kolmogorov-Smirnov test was used to check the normal distribution of the collected data. The chi-square test was used to compare the categorical variables. Comparison between and within the groups was performed using independent *t*-test and paired samples *t*-test, respectively. In this study, P < 0.05was set as the significance level.

4. Results

In this study, 133 patients with prostate cancer (71 persons in the control group and 62 persons in the conservative treatment group) underwent the analysis. The participants' mean age was 62.8 ± 2.31 years in the control group and 63.3 ± 4.54 years in the treatment group (P = 0.613)., The participants' mean weight was 67.2 ± 6.2 kg in the control and 68.1 ± 5.04 kg in the treatment groups (P = 0.994). The mean Gleason scores were 8 ± 1.01 and $8.1 \pm$ 0.92 in the control and treatment groups, respectively (P = 0.168). Seventeen (23.9%) patients and 16 (25.8%) patients in the control and treatment groups had metastatic disease (P = 0.804). Table 1 compares the treatment and control groups before and after the supportive care. Moreover, the participants' mean lifestyle scores were 5.3 ± 2.5 and 5.8 ± 2.8 in the control and treatment groups before the supportive care, respectively (P = 0.460). However, following the intervention, the scores were 5.3 ± 2.1 and 7.6 ± 1.9 in the control and treatment groups, respectively (P = 0.001). The mean lifestyle score was significantly higher after supportive care in the treatment group (P = 0.001); however, this different was not significant in the control group (P = 0.999).

5. Discussion

The findings revealed that a supportive care program delivered by an educated healthcare worker can remarkably improve lifestyle in patients with prostate cancer undergoing treatment. Significantly higher levels of wellness, fatigue, social activity, sexual function, and weight control were also noticed in the treatment group.

In a similar study by Stanciu et al., they evaluated 120 patients who their prostate cancer had been diagnosed within 9 to 48 months before the study. Those patients were in stable clinical condition at the time of the evaluation and were randomly assigned to standard treatment and supportive care groups for 36 weeks. Interventions included programs augmenting self-care and self-management. In this regard, an educated nurse was in charge of providing personalized supportive care for each patient to be empowered to cope with their clinical symptoms. Researchers evaluated the patients' symptoms, psychological wellness, and quality of life (12).

Watson et al. (2014) conducted a two-phase study on prostate cancer patients diagnosed with prostate cancer within 9 to 24 months before the study. In the first phase, the quality of life for 300 patients was assessed, and those suffering from urinary, intestinal, sexual, or hormonal systems dysfunction were included in the second phase. The participants were assigned to two standard care and intervention groups. The intervention was conducted using a self-management approach associated with consultation and support for patients' problems. The patients were followed up via telephone after six months, and the final results were assessed after seven months by the questionnaire, revealing a significantly higher quality of life in the intervention group (13).

In another study, Giesler et al. (2005) included 99 patients with prostate cancer and their spouses six months after completion of the treatment process (8). They were assigned to two intervention (standard treatment and supportive care) and one control (standard treatment) groups. The intervention group had monthly visits by an educated

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oncology nurse for six months. This nurse helped patients to detect their quality-of-life-related needs using a computer program. Then the appropriate care and supports were provided. The patients were evaluated before, four months, seven months, and 12 months after the intervention. There was a significant improvement in sexual function-related quality of life and cancer-related anxiety in the intervention group compared to the control group. Moreover, the severity of depression at the beginning of the study influenced the effects of the intervention on other aspects of quality of life.

A clinical trial study was conducted in Denmark to evaluate the effect of multidisciplinary rehabilitation on prostate cancer patients undergoing radiotherapy and hormone replacement therapy (14). The patients were assigned to two control (standard treatment) and intervention (two sessions of consultation with a nurse and one educational session with a physiotherapist) groups. Further, disease-related quality of life (hormonal, sexual, intestinal, and urinary symptoms), overall quality of life, power of pelvic floor muscles, and pelvic floor electromyography were assessed before radiotherapy, four weeks after radiotherapy (before intervention), and 20 weeks after intervention. The researchers concluded that multidisciplinary rehabilitation improved urinary and hormonal symptoms as well as the quality of life in the intervention group.

There are a remarkable number of similar experiences with prostate cancer rehabilitation centers worldwide. Princess Margaret cancer center, Toronto, Canada, has been founded to help patients with urinary incontinency or erectile disorder following prostatectomy (15). In addition to the patients, spouses are also supported as the center has access to a multi-specialty team, including urologist, psychologist, nurse, and sexual health consultant.

The Sidney Kimmel Comprehensive Cancer Center, located in the Johns Hopkins hospital, provides supportive care such as psychological rehabilitation and exercise therapy for prostate cancer patients (16).

Michigan Comprehensive Cancer Center provides rehabilitation programs for a wide range of cancer diseases to promote patients' quality of life and performance. This center has physical medicine and rehabilitation specialists, exercise therapists, psychologists, and sports physiologists to provide a comprehensive rehabilitation service (17, 18).

5.1. Conclusions

According to the findings, a prostate cancer-specified rehabilitation center providing supportive care by an educated healthcare professional can significantly improve the quality of life and lifestyle of prostate cancer patients

Table 1. Comparing Experimental and Control Groups Before and After Supportive Care			
Measures	Control Group (n = 71)	Experimental Group (n = 62)	P-Value
Wellness			
Before	7(9.9)	6 (9.6)	0.972
After	9 (12.6)	31 (50)	0.001
Fatigue			
Before	16 (22.4)	16 (25.8)	0.660
After	14 (19.9)	3 (4.6)	0.010
Social activity			
Before	27 (38)	23 (37)	0.912
After	28 (39.4)	39 (62.9)	0.007
Pain			
Before	17 (23.9)	22 (35.4)	0.145
After	19 (26.7)	12 (19.3)	0.314
Reduced bone density			
Before	18 (25.3)	14 (22.2)	0.709
After	22 (31.8)	8 (12.9)	0.013
Urinary incontinency			
Before	7 (9.9)	6 (9.6)	0.972
After	9 (12.6)	4 (6.4)	0.228
Sexual dysfunction			
Before	17 (23.9)	17 (27.4)	0.647
After	38 (35.5)	22 (35.4)	0.037
BMI			
Before	25.3 ± 1.8	26.1 ± 1.9	0.014
After	27.8 ± 2.2	25.1 ± 1.5	0.001

^aValues are expressed as No. (%) or mean \pm SD.

undergoing treatment. Further studies should be conducted as clinical trials with a large sample size to determine the effectiveness of rehabilitation programs more accurately.

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Footnotes

Authors' Contribution: Study concept and design: A. G., M. E., M. J. and S. M.; Protocol development, data abstraction, and manuscript preparation: M. RB., M. J. and M. E.;

Critical revision of the manuscript for important intellectual content: A. G.; S. M.; M. RB.

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Informed Consent: All the patients signed an informed consent form prior to the rehabilitation process.

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