REVIEW PAPER

UROLOGICAL ONCOLOGY

# Role of preoperative patient education among prostate cancer patients treated by radical prostatectomy

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**Introduction** Radical prostatectomy, as a prostate cancer treatment option, is associated with the presence of certain postoperative dysfunctions – physical, psychosocial, emotional and economic. However, regular and planned preoperative patient education can help and support physical and emotional well-being by reducing levels of anxiety, building feelings of being in control, and providing instruments for self-management by patients.

**Material and methods** A literature search was conducted on the subject of educational interventions among cancer patients, focusing on men with prostate cancer undergoing radical prostatectomy.

**Results** Preoperative patient education can affect key factors which have an impact on health-related quality of life such as levels of fear and anxiety, expectations and satisfaction in relation to treatment, postoperative activity, self-care management, and others.

**Conclusions** Effective education of patients can lead to increased involvement in courses of treatment, which can in turn result in decreased postoperative complications and shorter recuperative periods. Patient education should be scheduled and organized using not only traditional methods but also modern technology, e.g. 3D printed models of organs or tumours.

Key Words: prostate cancer ‹› patient education ‹› radical prostatectomy

## INTRODUCTION

In recent years a growing interest in patient-centred care has been observed. One of its key objectives is patient education, which is commonly reduced to presenting basic information on technical aspects of surgery and obtaining informed consent for treatment [1]. In 2021, the European Urology Association, in their guidelines for diagnosis and management of prostate cancer, indicated that preoperative patient education is crucial for optimizing patient-centred care by urologists and other medical personnel [2]. Modern patient education should in particular aim to create habits of self-maintenance and improvement of health by encouraging healthy lifestyles, fostering interest in relevant health issues, and expanding patients' knowledge of their health needs [3].

A wide range of different side effects after radical prostatectomy can be observed, urinary incontinence and sexual dysfunctions being the most common. Surgery is also associated with contemporary decreased health-related quality of life [4, 5, 6]. However, developing proper health habits and self-care management abilities can effectively reduce side effects of treatment and improve recovery processes [3, 7]. Our article aims to present the possible benefits of patient education performed before radical prostatectomy because the authors of the present paper observed that

patients undergoing surgery are still insufficiently informed about prostate cancer disease and treatment.

## Objectives of patient education before radical prostatectomy

One of the most significant objectives of patient education is raising patient awareness of the disease itself, of treatment methods, and of associated possible side effects. The authors of the present paper divide this domain into a number of subjectively-selected sections, as follows.

## Understanding of disease

Patient understanding of cancer is necessary for practical planning of anti-cancer treatments. Therefore, conversations about cancer and treatment possibilities are needed in order for patients to be involved in decision-making processes [8]. Currently there exists a wide range of methods for educating patients about disease and treatment options. Using various modern technologies can provide patients with a better understanding of the mechanisms of prostate cancer. A study by Wake et al. assessed, in a group of 200 patients, the use of numerous means of visualizing prostate anatomy, cancer size and cancer localization, thereby helping patients and their relatives understand the nature of cancers and treatment plans. Patient-specific 3D printed models were found to be significantly more effective than standard imaging (Likert scale survey 4.70 ±0.54 vs 4.28 ±0.80, $p < 0.001$) in subjective patient reports [9]. A further study, conducted by Porpiglia et al. and performed on a group of patients who had undergone robot-assisted radical prostatectomy ($N = 8$) and partial nephrectomy ($N = 10$), confirmed the usefulness of 3D printing technology for surgical planning and disease comprehension (on 1–10 scale 8/10 and 10/10, respectively) [10].

## Patient satisfaction

Regarding possible side effects of treatment and/or surgical complications, patient education should include information about potential decreases in the quality of functional outcomes. Such education can lead to a decrease in levels of patient frustration and regret. The provision of such information might take place either during an appointment with a surgeon before radical prostatectomy or after initial diagnosis of prostate cancer [8, 11]. In a study performed by Kretschmer et al. [7], 266 prostate cancer patients who had undergone nerve-sparing radical prostatectomy were assessed regarding their satisfaction in obtaining detailed information about possible postoperative complications, namely stress urinary incontinence and erectile dysfunction. The results indicated that most information about urinary and sexual disorders was provided by urologists and physiotherapy facilities. Moreover, univariate analysis showed that patient satisfaction regarding recovery from postoperative complications is significantly correlated to the individual's sense of being well-informed. Results indicate the low patients' consulting concerning urinary incontinence (UI) and erectile dysfunction (ED) cause significantly reduced satisfaction levels with recovery (0–100% satisfaction scale: 40.7% and 33.3%, $p < 0.001$ for UI and ED, respectively). Subsequent multivariate analysis indicated that a low level of prior provision of information about erectile dysfunction is a predictor of poor satisfaction with recovery from this dysfunction [odds ratio (OR) 0.190, 95% confidence interval (CI) 0.055 – 0.652 ($p = 0.008$)] [7].

## Fear and anxiety control

Feelings of worry, strain and anxiety are common symptoms among patients undergoing surgical interventions [11, 12]. In this regard, preoperative education should be concentrated not only on decreasing the number and intensity of side effects and adverse events but also on increasing patients' feelings of being in control and actively participating in treatment [1, 8, 11]. Moreover, preoperative anxiety can negatively affect levels of cortisol, adrenaline and noradrenaline, which may lead to increased levels of postoperative pain, longer periods of hospitalization, and lower health-related quality of life [12]. However, preoperative education may reduce levels of anxiety among patients undergoing different surgical interventions. A systematic review conducted by Althobiti et al. confirms that preoperative education decreases levels of fear and anxiety, although this must be conducted in a scheduled and structured manner [12]. Further studies conducted by Lemos et al. and Sepulveda-Plata et al. confirm the above conclusions. Participants in both studies were divided into two groups: an intervention group, which obtained full information related to surgery, anaesthesia and the hospitalization process, and a control group, which received standard information. A statistically significant reduction in levels of anxiety and fear related to cancer, hospitalization and treatment among the intervention group was observed in both studies [13, 14]. In the study of Lemos et al., the group who were fully informed obtained an average of 4.0 points on the Beck Anxiety Inventory versus 18.0 points preoperatively ($p < 0.001$), while the control group received 16.5 and 18.0 points respectively ($p < 0.001$ versus study group) [13].

In turn, the study performed by Sepulveda-Plata et al. presents that the intervention group showed a coefficient of changes regarding the anxiety domain of 1.09 (95% CI 0.82–1.36 (p = 0.000) indicating a decrease in fear compared to the control group [14].

## Patient expectations and following experiences

Disconnection between patients' expectations and their experiences after surgical treatment are commonly reported and described by cancer patients [15, 16]. Findings from a study by El-Haddad et al. show that patients differentiate their expectations regarding health outcomes from those of healthcare professionals. Participants also expressed the view that their decisions should be crucial within the context of improving their state of health, and expressed their expectations of clinicians. These expectations included not only professionalism and friendliness from clinicians but also the provision of complete information related to what they are going through, their possible reactions to treatment, and future self-management [16]. Patients' expectations should be discussed in-depth with medical personnel because any gap between their demands and following experiences may result in increased anxiety and reduced quality of life. A meta-analysis performed by Devlin et al. shows that patients who are forewarned and fully informed and educated about certain side effects are likely to cope with them more easily (r = 0.26 p <0.001) [17]. Conversely, building up positive but unrealistic expectations about treatment outcomes leads to false confidence and hopes, which may result in lower health-related quality of life outcomes than for those patients who have obtained more realistic prognoses [15]. A cohort study conducted by Panda et al. on a group of 101 patients undergoing cancer surgery showed that high preoperative expectations among patients correlate with lower subsequent quality of life scores. Strong correlation was shown in the areas of physical functioning [(OR 0.50, 95% CI 0.22–0.78 (p <0.001)] and physical limitations [OR 0.41, 95% CI 0.05 – 0.77 (p = 0.024)] [18]. Therefore, surgeons and other healthcare professionals should sensitively evaluate variables that may indicate the status of patients' physical and psychosocial health after surgery.

## Benefits of early mobilization

Preoperative education on the benefits of early physical activity after prostate cancer surgery can significantly reduce patient levels of fatigue and postsurgical pain and improve general quality of life [19, 20]. Early mobilization after surgery may also enhance functional well-being and improve postoperative recovery. It aids the recovery of cardiopulmonary endurance and the improvement in muscular strength, and thus ameliorates symptoms of fatigue [19, 21]. A randomized controlled trial conducted by de Almeida et al. on a group of 108 participants after major abdominal cancer surgery shows that early mobilization programs appear to be effective, safe and feasible among patients undergoing cancer surgery. The mobilization program performed by the study group – including core training, aerobic training, isometric training, isotonic training, and gait training – was performed two times per day for 30 minutes in the five days following surgery. The control group was given standard rehabilitation care. Results show that early mobilization interventions relieve patient fatigue more than standard care (Piper fatigue scale revised, range score 0–0 vs 0–4.83 p = 0.024) and improve health-related quality of life (EuroQoL-5D-5L, mean score 0.71 vs 0.34 p <0.001). Moreover, a greater number of participants in the study group were able to cross a room without any human assistance after five days postoperatively (p <0.01) [22]. A study performed by Lin et al. also indicates the benefits of patient education on early postoperative mobilization. This retrospective cohort study, on a group of 288 men undergoing laparoscopic radical prostatectomy, shows that two hours of bedside activity four hours after surgery and more than six hours of off-bed activity one day after surgery significantly decreases number of postoperative complications in the study group versus controls (11 vs 22 p = 0.036) and length of stay expressed in days (3.8 vs 9.2 p <0.001) [23]. Thus, preoperative education should include description of physical activities which can feasibly be performed by patients postoperatively.

## Self-care in the early postoperative period

According to the World Health Organization (WHO), self-care is the personal-specific capacity to stimulate, restore and preserve health, prevent disease, and manage illness [24]. As there is a growing group of patients living with long-term chronic conditions resulting from cancer and its treatment, so self-care management has become a fundamental tool for maintaining health and improving quality of life [20]. Such self-care can for example help build healthy behaviours (e.g. cessation of tobacco use, maintenance of altered diet) [25], promote physical exercise [26], or encourage pelvic floor muscle therapy [27]. Moreover, having competencies in self-care management can improve patients' psychological well-being by building a sense of confidence and self-sufficien-

cy [28]. However, adequate preoperative education is needed to support patients' efforts in reaching goals or overcoming failures and obstacles [29]. In this connection, healthcare providers should be open-minded about patients' individual needs and expectations, as it often happens that the types of self-care support presented by medical personnel do not correspond with patients' personal needs [20]. Patients have reported the need for information regarding wound care, eating and drinking in the early postoperative period, and interpretation of signals from the body [30]. More generally, patients want to be prepared earlier for specific situations which might be associated with their recovery [20]. For these reasons, preoperative patient education should incorporate strategies for developing self-care abilities.

### Physiotherapy before radical prostatectomy

Patients should be also well informed regarding the benefits of pelvic floor muscle training performed under the supervision of physiotherapists. Physiotherapy consultation before radical prostatectomy can include examination of the function of the lower urinary tract and pelvic floor muscles by means of ultrasound imaging or electromyography [31]. Based on such examination, physiotherapists can establish optimum physiotherapy treatment [32]. Moreover, prostate cancer patients can during physiotherapy examinations be educated in the field of pelvic anatomy and physiology, particularly relating to the role of pelvic floor muscles in urinary continence.

## CONCLUSIONS

1. Preoperative patient education should include information about not only surgical techniques but also the anatomy and pathology of the prostate, the clinical presentation of prostate cancer, and the side effects of a given treatment. The benefits of early mobilization after surgery and postoperative self-care management should also be presented.
2. Using new technology and information channels may increase the effectiveness of educational intervention among prostate cancer patients.
3. Effective education of patients allows them to fully involve themselves and their relatives in courses of treatment, which may result in decreased postoperative anxiety and shorter recuperative periods.

**CONFLICTS OF INTEREST**

The authors declare no conflicts of interest.

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