

## ORIGINAL RESEARCH—COUPLES' SEXUAL DYSFUNCTIONS

### Unsuccessful Investigation of Preoperative Sexual Health Issues in the Prostate Cancer “Couple”: Results of a Real-Life Psychometric Survey at a Major Tertiary Academic Center

Andrea Salonia, MD, Giuseppe Zanni, MD, Andrea Gallina, MD, Alberto Briganti, MD, Antonino Saccà, MD, Nazareno Suardi, MD, Rayan Matloob, MD, Luigi F. Da Pozzo, MD, Roberto Bertini, MD, Renzo Colombo, MD, Patrizio Rigatti, MD, and Francesco Montorsi, MD

University Vita–Salute San Raffaele—Department of Urology, Milan, Italy

DOI: 10.1111/j.1743-6109.2009.01483.x

#### ABSTRACT

**Introduction.** Investigating preoperative sexual function of patients with prostate cancer (PCa) and their partners is needed for realistic functional outcome analyses after radical prostatectomy (RP).

**Aim.** To assess pre-RP sexual health issues of PCa patients and their partners in a stable heterosexual relationship.

**Methods.** Data were analyzed from 3,282 consecutive patients who underwent RP over a three-period survey. During Period 1, on admission to the hospital the day prior to surgery, 1,360 patients were asked to complete the International Index of Erectile Function (IIEF). During Period 2, 1,171 patients were asked to complete the preoperative IIEF; similarly, patients' partners were invited to complete the Female Sexual Function Index (FSFI). Lastly, during Period 3, only candidates for RP were asked to fill in the IIEF.

**Main Outcome Measures.** To assess the rate of patients who completed the questionnaire during the three-period survey. To detail the proportion of patients' partners who filled in the questionnaire, along with the partners' reasons for non-adherence to the proposed investigation during Period 2.

**Results.** A small rate of men completed the IIEF during Period 1 (583 in 1,360 [42.9%]), Period 2 (290 in 1,171 [24.8%]), and Period 3 (261 in 751 [34.8%]) ( $\chi^2$  trend: 13.06;  $P = 0.0003$ ). In this context, a significantly lower proportion of patients completed the questionnaire during Period 2, as compared with both Period 1 ( $\chi^2$ : 95.13;  $P = 0.0001$ ) and Period 3 ( $\chi^2$ : 21.87;  $P < 0.0001$ ). Only 82 in 1,171 (7.0%) partners completed the FSFI over Period 2. Moreover, only 6 in 82 (7.3%) of women provided complete data.

**Conclusions.** The investigation of sexual health issues of both partners prior to RP is largely unsuccessful. In this context, the prevalence of incomplete data collection is high, and these results demonstrate that contemporaneously investigating the sexual health issues of both partners significantly increases the prevalence of incomplete data collection. **Salonia A, Zanni G, Gallina A, Briganti A, Saccà A, Suardi N, Matloob R, Da Pozzo LF, Bertini R, Colombo R, Rigatti P, and Montorsi F. Unsuccessful investigation of preoperative sexual health issues in the prostate cancer “couple”: results of a real-life psychometric survey at a major tertiary academic center. J Sex Med 2009;6:3347–3355.**

**Key Words.** Prostatectomy; Couple; Sexual Function; Prostate Cancer; IIEF; FSFI

#### Introduction

Radical prostatectomy (RP) is considered the standard treatment for patients with clinically localized prostate cancer (PCa) and a life expectancy of at least 10 years [1]. Overall, the number of

RPs has been increasing annually, and at present, many patients are treated at younger ages [2,3]. In this context, preserving a good health-related quality of life (HRQoL) after surgery is gaining increasing importance [4,5]. Indeed, RP may be associated with treatment-specific sequelae, with

erectile dysfunction (ED) [6–8] being the most prevalent.

Phosphodiesterase type 5 inhibitors (PDE5s) are utilized as an efficacious and safe treatment for post-RP ED in properly selected patients [6,7]. However, despite the effectiveness of ED treatment, at least in some centers 30% to 75% of patients discontinue use of assistive aids within 1 year during the postoperative period [9,10]. Likewise, a significant number of those men preoperatively self-reporting to be fully potent and strongly motivated to maintain postoperative erectile function (EF) decide not to even begin treatment with an ED compound upon discharge from the hospital [10]. Current research exploring this gap between effectiveness and ongoing use supports the need to take a broader perspective of sexual dysfunction emphasizing several factors, including a couple's sexual and intimate relationship during the preoperative period [9,11,12].

Therefore, in order to psychometrically assess a number of preoperative parameters concerning sexual health issues in candidates for radical retro-pubic prostatectomy (RRP), we planned to use a number of self-administered validated instruments for both patients and their partners consecutively attending a major tertiary academic center. However, the clinical observation of significant difficulties in distributing to patients and their partners such a set of psychometric tools prompted us to analyze the actual number of questionnaires' responders throughout a 6-year time frame. This article reports the results of a clinical survey on sexual aspects in candidates for RRP from 2002 through 2008.

## Materials and Methods

From November 2002 to October 2008, 3804 consecutive European Caucasian PCa patients underwent RRP at our institution. Upon admission the day prior to surgery, each patient was comprehensively assessed with a detailed medical and sexual history by a male staff physician. To provide a frame of reference for objectively interpreting surgical outcomes, we also asked all patients to complete a set of validated questionnaires, including the International Index of Erectile Function (IIEF) domain scores [13]. All instruments were self-administered in a clinical setting; in this context, the post-completion questionnaires collection was performed by the staff physicians prior to the patient's discharge from the hospital in all cases.

All patients were investigated regarding their marital or stable sexual relationship status, and, for the specific purpose of the analysis, only men with a stable sexual relationship were considered. A stable sexual relationship status was defined as the patient's having had the same partner for 12 or more consecutive months.

For the aims of this study, the evaluated 6-year time frame was stratified into three periods. From November 1, 2002, to April 20, 2005 (Period 1), on admission to the hospital, patients were asked to complete the IIEF domain scores. From May 1, 2005, to April 30, 2007 (Period 2), both patients and their partners were asked to fill in a set of validated instruments, including the IIEF for the patients and the Female Sexual Function Index (FSFI) [14] for their partners. Patients and their partners received the psychometric tool at the same time by the same staff urologist; likewise, patients and their partners could fill the questionnaires in a separate setting. From May 1, 2007, to October 30, 2008 (Period 3), patients were assessed only in terms of sexual functioning, thus completing the IIEF.

## Main Outcome Measures

The primary end-point of the present study was to descriptively assess the rate of patients with a stable heterosexual relationship who completed the psychometric instrument according to the three-period survey. The secondary end-point was to detail the rate of patients' partners who filled the questionnaire in, along with reasons for non-adherence to the proposed sexual health issues investigation.

## Statistical Analyses

Data abstraction was performed by two different abstractors on 100% of medical records at office admission. The data quality analysis showed an error rate of 0.6%.

Data are presented as means (standard deviation [SD]). The statistical significance of differences in means and proportions were tested using the two-tailed Student's *t*-test and the  $\chi^2$  test, respectively. All statistical tests were performed using S-Plus Professional, version 1 (MathSoft Inc., Seattle, WA, USA). For all statistical comparisons, significance was defined as  $P < 0.05$ .

The study was approved by our Ethics Committee, and all patients signed an informed consent agreeing to deliver their own anonymous information for future studies.

**Table 1** Preoperative characteristics and descriptive statistics throughout the three-period survey for patients with a stable heterosexual relationship who completed the psychometric assessment

	Period 1	Period 2	Period 3	P-value <sup>†</sup>
Patients with a stable relationship (No. [%])	1,360/1,600 (85)	1,171/1,361 (86)	751/843 (9.1)	0.47 ( $\chi^2$ : 0.53)
Patients who filled the tools in (No. [%])	590/1,360 (43.4)	290/1,171 (24.8)	266/751 (35.4)	
Complete data collection (No. [%])	583/1,360 (42.9)	290/1,171 (24.8)	261/751 (34.8)	0.0003 ( $\chi^2$ : 13.06)
Age (years)				
Mean (standard deviation)	65.0 (7.2)	63.0 (6.9)	62.6 (6.6)	<0.001 ( <i>F</i> : 14.23)*
Range	38–79	41–78	41–78	
IIEF domain scores (mean; standard deviation)				
EF	15.6; 11.4	18.7; 10.8	18.6; 10.9	<0.001 ( <i>F</i> : 11.06)*
OF	5.4; 4.2	6.8; 3.9	6.5; 4.0	<0.001 ( <i>F</i> : 14.21)*
SD	5.3; 2.2	6.1; 2.4	6.5; 2.6	<0.001 ( <i>F</i> : 29.42)
IS	6.1; 5.2	7.7; 4.9	7.4; 4.9	<0.001 ( <i>F</i> : 11.17)*
OS	5.8; 2.9	6.6; 2.8	6.8; 3.0	<0.001 ( <i>F</i> : 14.42)*

\* $P < 0.001$ : Period 1 vs. Period 2 and Period 3.

<sup>†</sup> $P$  value according to  $\chi^2$  test trend or analysis of variance, as indicated.

IIEF-EF = International Index of Erectile Function-erectile function domain; IS = intercourse satisfaction; OF = orgasmic function; OS = overall satisfaction; SD = sexual desire.

## Results

There were 1,600, 1,361, and 843 candidates for RRP through Periods 1, 2, and 3 respectively. Among those, only patients with a stable heterosexual relationship were considered for this analysis.

Table 1 details the preoperative characteristics and descriptive statistics across the three-period survey for patients with a stable heterosexual relationship who completed the psychometric assessment. The ratio of patients with a stable relationship was comparable among periods. A significant age migration was found throughout the three-period survey; namely, that the patients during Period 3 were younger than those operated on during the previous periods. A relatively small rate of men filled in the psychometric assessment during the whole three-period survey. In this context, significantly fewer patients completed the questionnaires during Period 2, as compared with both Period 1 (difference = 18.6%;  $\chi^2$ : 95.13;  $P = 0.0001$ ; 95% confidence interval [CI] = 14.99 to 22.21) and Period 3 (difference = 10%;  $\chi^2$ : 21.87;  $P < 0.0001$ ; 95% CI = 5.79 to 14.21). Patients evaluated during Period 1 reported significantly lower scores for each IIEF domain, as compared with the other two periods. According to the IIEF-EF score, a similar percentage of men did not attempt any intercourse during the last 4 weeks prior to the compilation of the questionnaire over the three-period survey.

Table 2 reports preoperative patients' clinical and descriptive statistics throughout the three-period survey, comparing data between those who filled out the questionnaires (group 1) vs. patients who did not (group 2). Patient age was similar

between the groups. In contrast, group 2 patients for both Period 1 and Period 3 had significantly higher prostate specific antigen (PSA) values than did group 1 men. Heterogeneous findings were reported for both the preoperative clinical stage and biopsy Gleason sum, with no clear significant association with the specifically analyzed period.

Only 82 (7.0%) partners of the 1,171 PCA patients with a stable heterosexual relationship agreed to fill in the instruments. Although the recruited women were partners of a patient who had completed the questionnaire at the same time, a low proportion of them agreed to receive the psychometric tool (namely, 82 out of the 290 [28.3%] couples in whom men completed the questionnaire). Moreover, only 6 out of the 82 women (7.3%) provided complete data collection. Within this group, mean (SD; range) age was comparable between partners (namely, 62.9 years [6.9; range 41–78] vs. 56.9 years [7.9; range 35–74], respectively, for men and women;  $P = 0.06$ ).

Table 3 shows the preoperative EF segregated according to the IIEF-EF severity criteria suggested by Cappelleri et al. [15] Rates of men who did not have sexual attempts prior to the surgery were not different among the three periods. Likewise, a similar percentage of those patients with a preoperative score suggesting normal EF, mild to moderate ED, and severe ED was found throughout the three-period survey. In contrast, a significantly higher proportion of men complained of either mild or mild to moderate ED during Period 1 as compared with both Period 2 and Period 3.

We could collect reasons for women's refusal to either accept or complete the questionnaire only for those women whose partners did completely fill in the IIEF. In this context, we found that

**Table 2** Preoperative patients' characteristics and descriptive statistics throughout the three-period survey, comparing patients who completed the questionnaire (group 1) and who did not complete it (group 2) among men with a stable heterosexual relationship

	Period 1 1,360			Period 2 1,171			Period 3 751		
	Group 1	Group 2	<i>P</i> value <sup>†</sup>	Group 1	Group 2	<i>P</i> value <sup>†</sup>	Group 1	Group 2	<i>P</i> value <sup>†</sup>
No. of patients									
Patients (No. [%])	583 (42.9)	770 (56.6)		290 (24.8)	881 (75.2)		261 (34.8)	485 (64.6)	
Age (years)									
Mean; SD	65.0 (7.2)	66.2 (7.0)	0.43	63.0 (6.9)	65.8 (6.9)	0.98	62.6 (6.6)	65.5 (6.9)	0.52
Total PSA (ng/mL)									
Mean; SD	10.7; 12.7	12.8; 30.4	<0.001	12.1; 30.1	17.1; 75.0	0.27	10; 20.5	12.5; 26.1	<0.001
Clinical stage ( $\chi^2$ )									
No. (%)									
T1b	1 (0.2)	7 (0.9)	0.19	5 (1.7)	7 (0.8)	0.32	0 (0.0)	2 (0.4)	0.79
T1c	357 (61.2)	503 (65.3)	0.14	172 (59.3)	500 (56.8)	0.50	156 (59.8)	276 (57)	0.51
T2	201 (34.5)	218 (28.3)	0.02	95 (32.8)	299 (34)	0.76	71 (27.2)	91 (18.8)	0.01
T3	24 (4.1)	42 (5.5)	0.29	18 (6.2)	75 (8.4)	0.28	34 (13)	116 (23.8)	0.0006
Biopsy Gleason sum ( $\chi^2$ )									
No. (%)									
≤ 6	393 (67.4)	487 (63.2)	0.12	205 (70.7)	540 (61.3)	0.005	193 (73.9)	263 (54.2)	<0.0001
7	146 (25)	209 (27.1)	0.42	62 (21.4)	247 (28)	0.03	56 (21.5)	167 (34.4)	0.0003
≥8	44 (7.5)	74 (9.6)	0.21	23 (8.0)	94 (10.7)	0.22	12 (4.6)	55 (11.3)	0.004

<sup>†</sup>*P* value according to independent sample *t*-test or  $\chi^2$  test, as indicate.  
PSA = prostate-specific antigen.

women self-refused to receive the questionnaire in 157 out of the 290 women (54.1%); in contrast, patients did not allow their partners to complete the questionnaire in 50 of the 290 women (17.2%).

## Discussion

We analyzed the rates of PCa patients and partners with a stable heterosexual relationship who completed a validated psychometric instrument assessing sexual aspects prior to RP. The analysis considered data over a three-period survey of roughly 6 consecutive years at the same institution.

Treatment such as RP may force patients and their partners to deal with long-term side effects, including ED and urinary incontinence [4–8,16,17]. Physicians and other health profes-

sionals working with patients before and after RP can help couples be better prepared for the post-operative recovery period by being sensitive to the men's need to recover physical capacity quickly, while also helping them to understand that recovery takes time [18]. Accurate information about expected side effects and possible complications would diminish the likelihood of distress during this period [18]. Similarly, patients' coping ability and adaptation appear of major importance in their resuming satisfying sexuality and overall QoL following treatment [9]. In this context, the rationale for psychometrically investigating pre-RP sexual function stemmed from a number of recent observations highlighting the importance of having objective data prior to surgery for subsequent realistic functional outcome analyses

**Table 3** Preoperative patients' erectile function according ED severity segregation throughout the three-period survey among men with a stable heterosexual relationship

	Period 1	Period 2	Period 3	<i>P</i> value <sup>†</sup>
Patients (No. [%])	583/1,360 (42.9)	290/1,171 (24.8)	261/751 (34.8)	
No attempts (%) <sup>‡</sup>	111/583 (19.0)	40/290 (13.8)	36/261 (13.8)	0.08 ( $\chi^2$ : 3.33)
(score 1 at IIEF-EF)				
Normal erectile function	191/583 (32.8)	105/290 (36.2)	105/261 (40.2)	0.14 ( $\chi^2$ : 2.13)
Mild ED	63/583 (10.8)	66/290 (22.8)	42/261 (16.0)	0.02 ( $\chi^2$ : 5.86)*
Mild to moderate ED	44/583 (7.5)	22/290 (7.6)	24/261 (9.2)	0.49 ( $\chi^2$ : 0.48)
Moderate ED	56/583 (9.6)	14/290 (4.8)	13/261 (5.0)	0.01 ( $\chi^2$ : 6.42)**
Severe ED	118/583 (20.2)	43/290 (14.8)	41/261 (22.8)	0.12 ( $\chi^2$ : 2.45)

\**P* < 0.001: Period 2 vs. Period 1; *P* < 0.05: Period 3 vs. and Period 1.

\*\**P* = 0.03: Period 3 vs. Period 1; *P* = 0.02: Period 2 vs. and Period 1.

<sup>†</sup>*P* value according to  $\chi^2$  test trend.

<sup>‡</sup>No attempts: patient did not attempt intercourse during the 4 weeks prior to psychometric evaluation (IIEF-EF score = 1).

ED = erectile dysfunction; IIEF-EF = International Index of Erectile Function-erectile function domain.

[19–22]. Indeed, common limitations influencing the reliability of reported postoperative data include the fact that the degree of sexual function usually is not assessed objectively before and after treatment. Most reports are based only on a retrospective preoperative chart review, and the accuracy of these data is questionable [23]. The first significant finding of the present analysis is that a large proportion of men did not complete the IIEF assessing preoperative sexual function. Although such a result was not expected, it has been previously demonstrated that questionnaire-based analyses generally have a lower response rate than other types of investigations because men tend to be more reluctant to reveal sexual functioning and other impairments in intimate body function when responding to a questionnaire than they do when speaking directly to their physicians [24,25]. However, questionnaire-based analyses allow for more critical and thus more valid and reliable results [20,24].

As a second major finding, we observed that a significantly lower proportion of men completed the psychometric tool during Period 2; that is, when both patients and their partners contemporaneously received instruments to address their sexual health issues. In parallel, within the same time frame, only 7.0% of women agreed to receive the questionnaire, with a hugely low complete data collection rate. Although explaining this finding is difficult, we might speculate that investigating preoperative sexual function in both partners further limited the response rate. An interim analysis at that time prompted us to remove the questionnaire on women's sexual function from the set of questionnaires to be given the candidates to RRP. Interestingly, there was a significantly higher rate of patients' compliance during Period 3. Moreover, as has been already debated, using a questionnaire to provide a frame of reference for objectively interpreting surgical outcomes might be considered too invasive within the couple; patients and their partners may already be distressed by the diagnosis of cancer and the fear related to both the surgery and its potential side effects [26,27]. Likewise, patients and their partners can suffer from clinical levels of depression and severe levels of anxiety and stress reactions, as they must adapt to the shock and uncertainty that such a diagnosis presents [28]. In this context, collecting psychometric data on sexual functioning upon admission to the hospital, the day prior to surgery, may further limit the overall rate of psychometric instruments' completion, being the

latter a methodological flaw of the study. Further studies should elucidate whether administering the questionnaires at a different time point in the preoperative process might eventually change the completion rate. Moreover, studies of heterosexual couples have also reported significant correlations between patients' and their partners' distress, depression, and anxiety [28]. Receiving a diagnosis of and treatment for PCa has been shown to result in significant physical side effects and associated psychosocial stressors that can interfere with the experience of sexual intimacy for couples, although these findings are controversial [28–30].

Another finding of the current analysis was the fact that men who did not provide a complete data set had significantly higher PSA values than did group-1 men for both Period 1 and Period 3. Moreover, heterogeneous findings were reported for both the preoperative clinical stage and biopsy Gleason sum, with no clear significant association with the specifically analyzed period. However, this result was coupled with the finding of a greater proportion of group 2 men with high Gleason sum as compared with group 1 men during Period 3. Although we did not perform any multivariate analysis to assess correlations and predictive values, we might speculate that patients with a more severe PCa may be less interested in completing tools dealing with HRQoL; in this specific context, the lack of a tool dedicated to the assessment of patients' psychological distress makes any correlation not feasible.

The background for investigating preoperative women's sexual function come from the clinical observation that little is actually known about the strategies that couples use to successfully maintain sexual intimacy after PCa treatment. Interestingly, in monitoring the accuracy of the patients' perceptions of their own sexual function, Soloway et al., for example, reported that partners rated the PCa patients as being significantly lower in their ability to gain erections and to perform sexually than they rated themselves [31]. Moreover, partners often serve as primary caregivers; thus, partners' adjustment to psychosocial, relational, sexual, and QoL changes can be critical to the health of the patient and to the couple's relationship [32]. The role of partners might also be considered of major importance for the postoperative patients' behavior toward aids for EF recovery [10,11].

Conversely, female partners themselves might postoperatively complain of their own sexual dysfunction [25]. Therefore, detailing the women's sexual health before RP becomes of paramount



importance to prospectively investigating the postoperative functional outcomes of the whole couple. Shindel et al., in this context, reported data from a demographic survey of 1,134 patients and their partners who completed both the IIEF and the FSFI [25]. Only 8% of the couples eventually provided complete data. Pearson correlation coefficients of IIEF and FSFI domain scores in matched couples demonstrated significant correlation ( $P < 0.05$ ) of the FSFI domain scores with IIEF domain scores, indicating an interrelationship between male and female sexual dysfunction in these couples. They thus concluded that evaluation and treatment of sexual dysfunction after RP should involve both partners [25]. In this study, we used a validated psychometric instrument to assess the women's sexual health profile upon patient admission the day prior to surgery; as noted in the Results section, we had a dramatically low response rate, with only 7.0% of women accepting the questionnaire and an even lower percentage providing complete data. As previously mentioned, the low rate of women who either accepted or completed the FSFI is comparable with what has already been described by others [25]. We mostly found that women refused to receive the questionnaire on their own, but we also found frequent instances of patients' "prohibition" toward their partners completing the questionnaire. As a first explanation, we hypothesized that newly diagnosed PCa patients may suffer from a sort of "disturbed" psychosocial adjustment to the stressful situation. The literature, however, does not univocally support that hypothesis; for instance, an impairment in psychosocial function in men with PCa has been described, particularly in those with advanced disease, but no increase in the rate of formal psychiatric disorder or adverse effects on the couples and families has been recorded [33,34]. In contrast, McCorkle et al. [35] showed that spouses reported significantly higher levels of depressive symptoms and significantly more marital interaction distress than PCa patients did. Conversely, PCa patients reported significantly more distress pertaining to sexual function than their spouses did [35].

In newly diagnosed PCa patients, partners take an active role throughout the decision-making process [36–39], usually a highly distressing process for the couple [40,41]. In contrast, our results supported a low rate of women's acceptance of their own questionnaires because of patients' refusal; we might speculate that a further potential reason for this "dramatic" finding could be because of the

willingness of the patients of a greater rate of his own intimacy when debating sexual health issues.

Our study is not devoid of limitations. We lacked a tool dedicated to the assessment of patients' psychological distress. Starting from the high rate of decision-related distress, Steginga et al. suggested using an interventional approach targeting decision-related distress for all men and in-depth psychological support for those who experience ongoing difficulties [41]. Among others, Roth et al. previously suggested a rapid screener for significant distress among PCa patients; in this context they found that it was acceptable, although these older men were reluctant to agree to both the evaluation and the consequent treatment [42].

To create a more complete picture of factors related to low response rate, the current analysis also could have included patients' monthly income, their socioeconomic well-being, and their standard of living. Indeed, although only a few population-based studies included income as part of their analyses, most of them found significant associations between income-derived standard of living and men's sexual health [43,44]. This could be even more interesting among PCa patients, as it was demonstrated that low-income partnered patients had better mental health, less urinary bother, higher spirituality, and lower symptom distress than unpartnered participants. However, we decided not to request income information because of the low response rate to income questions that we usually obtain in real-life clinical practice during standard office visits.

A fourth potential limitation of our study is the lack of a cross-cultural assessment, as it was reported that men from different cultures may experience different patterns of recovery related to sexual function and bother after RP [45]. Ethnicity may be a contributing factor in the same environmental condition [45], considering the preoperative psychometric profile of both patients and their partners. Notwithstanding such a potential limitation, we considered as a main entry criteria the fact all PCa patients in this survey were European Caucasians, with the specific purpose of having a sufficient degree of homogeneity among retrieved data.

## Conclusions

Assessment of sexual function profile prior to RP is important to prospectively define the functional outcome of surgery. However, our findings

demonstrate that a low rate of patients usually complete the psychometric tools preoperatively, and contemporaneously investigating sexual relationship issues for both partners before RP is mostly unsuccessful and significantly increases the prevalence of incomplete data collection. A low proportion of patients' partners provided complete questionnaires assessing their own sexual health prior to the surgery. Therefore, further studies are necessary to objectively examine the levels of sexual, psychological, and dyadic functioning of the PCa "couple."

### Acknowledgments

The authors thank Dragonfly Editorial's editors for reviewing the language in the article. The authors also thank Dr. Elena Farina and Dr. Nadia Finocchio, data managers, for providing data analysis.

**Corresponding Author:** Andrea Salonia, MD, Urology, Università Vita Salute San Raffaele, Via Olgettina 60, 20132 Milan. Tel: 00390226437286; Fax: 00390226437298; E-mail: saloniaandrea@yahoo.com

*Conflict of Interest:* None.

### Statement of Authorship

#### Category 1

##### (a) Conception and Design

Andrea Salonia

##### (b) Acquisition of Data

Giuseppe Zanni; Alberto Briganti; Antonino Saccà; Rayan Matloob; Luigi F. Da Pozzo; Roberto Bertini

##### (c) Analysis and Interpretation of Data

Andrea Salonia; Andrea Gallina; Nazareno Suardi; Rayan Matloob; Francesco Montorsi

#### Category 2

##### (a) Drafting the Article

Andrea Salonia; Andrea Gallina; Nazareno Suardi; Francesco Montorsi

##### (b) Revising It for Intellectual Content

Patrizio Rigatti; Francesco Montorsi

#### Category 3

##### (a) Final Approval of the Completed Article

Francesco Montorsi

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