

## Transurethral Prostatectomy: Differential Effects of Age Category and Presurgery Sexual Functioning on Postprostatectomy Sexual Adjustment

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*Sexual functioning and adjustment of 72 aging married males who had undergone transurethral prostatectomy were examined retrospectively according to their pre- and postsurgery status. Results indicate that although transurethral prostatectomy was generally associated with deterioration in various aspects of sexual expression, grouping subjects according to age and presurgery sexual adjustment qualified these general findings dramatically. For example, more younger than older males retained or attained good sexual adjustment after surgery. Furthermore, while older males with good presurgery sexual adjustment maintained good couple sexual functioning, they manifested greater loss of sexual self-confidence and individual sexual capacity than did their younger counterparts. In addition, the findings suggest that the question "Does transurethral prostatectomy affect sexual function?" must be rephrased to take into account changes in the cognitive, capacity, and affective domains as well as in the couple behavior and adjustment dimensions of sexual expression.*

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**KEY WORDS:** age; sexual functioning; transurethral prostatectomy.

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## INTRODUCTION

Benign prostatic enlargement occurs almost universally in the male population, typically beginning at age 40 years. It has been estimated that by age 60 more than 50% of males experience some kind of prostate problem; this figure increases with advancing age (Basso, 1977; Mostofi, 1970). As the number of males over age 55 in the population is increasing, one can expect a growing number of males to manifest symptoms of benign enlargement of the prostate. Surgery is the treatment of choice when symptoms become severe.

All types of surgical procedures commonly disrupt sexual functioning, as does physical illness in general. In many instances, however, there is no identifiable organic cause and the nature of the mediational link between these events appears to be cognitive rather than physiologic (Masters and Johnson, 1970; Thurer and Thurer, 1983). The aging process itself brings qualitative changes to the sexual response, as, indeed, it does to many physical abilities (Schover, 1984). However, physiologic aging, illness, and medication side effects do not adequately account for the frequently noted accelerated decline of sexual activity with age (Harman, 1978). This phenomenon appears to be related to North American attitudes regarding sexuality, specifically the cultural censure of sexual activity and the opinion held by society in general that sexual activity in older individuals is not desirable (Winn and Newton, 1982). Within the aging population itself, sexual attitudes and lack of knowledge concerning the effects of aging on sexual response as well as motivational factors have been implicated in the decline of sexual activity with age (Martin, 1981; White, 1982). Surgery involving the sexual organs may pose a serious hazard to an aging male population already vulnerable to sexual difficulties. In the case of prostatectomy, false beliefs and misinformation concerning the effects of surgery also may play a substantial role.

Despite the fact that transurethral prostatectomy, the most commonly used technique to correct benign prostatic enlargement, is unlikely to disturb the innervation of the erectile system, the reported adverse sexual consequences of this procedure have been substantial. A review of studies carried out between 1960 and 1985 revealed postprostatectomy sexual impairment in from 5 to 34% of men who were experiencing good sexual functioning prior to surgery (Libman and Fichten, 1987). In most of these investigations, however, the criteria for assessing the quality of sexual functioning are poorly specified, measurement is inadequate, and the multidimensional nature of the sexual experience is generally ignored. Given the variability of sexual impairment postprostatectomy reported in the literature (an astonishing 0 to 100% when findings from all the studies in this period are considered), it is difficult to make firm conclusions concerning the risks of prostate surgery for sexual functioning.

To better understand the psychosexual consequences of transurethral prostatectomy for benign prostatic enlargement, the following guidelines for the collection of data and reporting of results are proposed. The sample should be clearly described and subjects grouped in meaningful ways [e.g., age, sexual functioning prior to surgery, presence or absence of diseases known to affect sexuality (e.g., diabetes), and availability of a sexual partner]. The criteria for "sexual adjustment," "potency," and "impotence" should be clearly described. The multidimensional nature of sexual function requires that components such as daytime and nocturnal erectile ability, desire, ejaculation, orgasm, frequency of intercourse, confidence in sexual ability, and satisfaction with the sexual experience be evaluated separately. Valid measures of the criteria must be used. Studies have employed a wide variety of methods of data collection (e.g., questionnaire, interview, hospital charts, various physiological measures). These measures are by no means equivalent and different techniques frequently yield highly inconsistent results. In addition, the time at which pre- and postsurgery measurements are taken must be specified. Where possible, presurgery data should be collected before surgery takes place rather than retrospectively.

*Who* is evaluated, *how* the assessment is done, *what* is evaluated, and *when* evaluation is carried out have already been identified as important variables to consider in sex therapy outcome studies (Fichtten *et al.*, 1986). These issues clearly are applicable to prostatectomy outcome studies as well.

The goals of the present investigation were (1) to provide more conclusive information about the sexual casualty rate after prostate surgery, (2) to specify the precise nature of sexual deficits, and (3) to identify the characteristics of the population at risk for sexual difficulties postprostatectomy. This information is needed by urologists to assess the sexual risks of transurethral prostatectomy for specific patients and can constitute the basis for effective intervention programs for the prevention of postprostatectomy sexual impairment.

## METHOD

### Subjects

Subjects consisted of 72 married men all of whom had undergone transurethral prostatectomy 3–18 months prior to testing. In addition, data were obtained from 36 wives of the men in the sample.

Subject selection criteria were as follows: one spouse between 50 and 79 years of age, currently married, good command of English, and minimum grade 9 educational level (or equivalent) to ensure adequate comprehension and ability to fill out questionnaire measures.

Subjects were excluded on the basis of severe physical illness, diagnosis of prostatic cancer, diabetes mellitus, another recent surgery, conditions associated with organically based erectile dysfunction [cf. Kaplan's (1974) tables on the effects of illness and drugs on sexuality], and psychological disturbance (defined as having sought or contemplated psychotherapy during the past 2 years).

The average age of males who participated was 65 (range, 52 to 77); the average age of their wives was 61 (range, 50–75). Couples had been married for an average of 32 years and their relationships were generally satisfactory. Subjects were in good physical and psychological health. Couples' average income and educational level indicate that subjects were, generally, from the "middle class." Prior to their prostatectomy, the men had experienced prostatic symptoms for an average of 8 years. The mean weight of prostatic tissue removed during surgery was 17.4 g.

### Measures

Previous studies have emphasized the importance of multiple measures of sex therapy outcome as well as both narrow and broad therapy outcome criteria (Libman *et al.*, 1984; Takefman and Brender, 1984). These factors were taken into account in the selection of the measures. Measures were adapted where needed to allow males and females to answer with respect to both their current functioning and their status during the year prior to the male's prostatectomy.

#### Socioeconomic Status, Personal and Demographic Variables

*Background Information Form.* The Background Information Form was designed for the present study. It asks for information on age, years of education, years married, family income, and previous professional help for emotional, sexual, or marital problems.

#### Physical Status

*Physical Symptom Checklist.* The Physical Symptoms Checklist was compiled for this study to evaluate physical health. It evaluates the number, severity, frequency, and duration of prostatic symptoms. Physical health and medication use were also evaluated by this measure.

## Psychological Status

*Brief Symptom Inventory (BSI)*. The BSI (Derogatis *et al.*, 1976) is a valid self-report psychological symptom inventory designed primarily to reflect the psychological symptom patterns of psychiatric and medical patients.

## Marital Functioning

*Locke-Wallace Marital Adjustment Scale (MAS)*. The Kimmel and Van der Veen (1974) version of the well-known Locke-Wallace (1959) Marital Adjustment Scale (MAS) was used to evaluate marital satisfaction.

## Sexual Functioning

*Sexual History Form (SHF)*. The SHF is a 28-item self-report sexual history measure. It is typically scored on an item by item basis, resulting in 28 variables. Some normative data for these items are available (LoPiccolo *et al.*, 1985; Nowinski and LoPiccolo, 1979). In order to obtain a global score of male sexual functioning, 12 SHF items measuring male sexual desire, frequency of sexual activity, and ability (e.g., erections, ejaculatory control) were proportioned and summed to provide a derived score: Global Male Sexual Functioning. Data indicate that this derived score is a good measure of overall sexual adjustment (Creti *et al.*, 1987).

*Goals for Sex Therapy Scale (GSTS)*. This 15-item measure (Lobitz and Baker, 1979) uses a 7-point rating scale to evaluate satisfaction with the male's ability to engage in various sexual activities. It yields one score which reflects the male's satisfaction with his sexual performance. The instrument has been shown to be sensitive to pre-post sex therapy changes (Cohen *et al.*, 1980).

*Sexual Self-Efficacy Scale—Erectile Functioning (SSES-E)*. The SSES-E measures the male's confidence in his ability to perform a variety of sexual behaviors. The scale lists 25 desirable male sexual performance tasks; subjects indicate those they could perform and rate their confidence on a 10-point scale ranging from 10 ("quite uncertain") to 100 ("certain"). The scale has demonstrated reasonable reliability and validity (Fichten *et al.*, 1988; Libman *et al.*, 1985).

*Sexual Interaction Inventory (SII)*. This instrument, compiled by LoPiccolo and Steger (1974), is the most frequently used measure of sexual satisfaction. The measure provides five subscales for each partner as well as a

couple summary scale (Scale 6); this measures global disharmony in the sexual relationship. For the present study, an additional scale was formed: Frequency of Variety in Couple Sexual Repertoire.

*Additional Sexual Measures (SHF-A).* Two additional questions were prepared for the present study. These use the same format as the SHF and inquire about the frequency of retrograde ejaculation and morning erections, aspects of male sexual capacity not tapped by the SHF.

### Procedure

The research protocol went through the usual McGill University teaching hospitals' Ethics Committee approved procedure. Urologists at several large metropolitan hospitals canvassed potential subjects by letter requesting their permission to be contacted by the researchers. The study was described to all potential subjects who agreed to be contacted and permission was obtained from the patient to speak to the spouse. After verifying that the subjects fit the experimental criteria, an appointment was made to administer the test battery. Each subject provided written consent prior to participating in the study.

All measures were completed by spouses without consulting each other and in the presence of one of the experimental personnel. Measures which evaluated psychological, physical, marital, and sexual status were completed according to each partner's estimate of preoperative status (during the year prior to the male's surgery) as well as according to current status (counterbalanced order). Measures were completed during two or three 1-hr testing sessions.

## RESULTS

### Overall Changes Pre to Post Surgery

To evaluate changes in psychological, physical, marital, and sexual adjustment, a series of correlated *t*-test comparisons was made on pre- and post-surgery scores. Results detailed in Table I indicate the following changes in the sexual adjustment of males pre- to postprostatectomy: (1) lower frequency of couple sexual activities and more restricted sexual repertoire, (2) diminished sexual self-confidence and satisfaction with erectile ability, (3) reduced ability to obtain erections in sex play and (4) retain them during intercourse, (5) somewhat diminished sexual desire, and (6) increased frequency of retrograde ejaculation.

Despite these declines, males experienced somewhat better physical health postsurgery and couples remained reasonably sexually compatible and only somewhat less satisfied with the quality of their sexual interaction. Psychological adjustment and marital functioning did not change pre- to post-prostatectomy.

Since the analyses described above were carried out on mean scores, it was not possible to determine what proportion of male subjects deteriorated in sexual adjustment postsurgery. Therefore, the percentage of subjects who improved or deteriorated pre- to postprostatectomy was calculated for selected variables.<sup>6</sup> Presurgery medians were used as a baseline to determine whether subjects had improved or deteriorated. The results, illustrated in Fig. 1, show that, in general, deterioration was more frequent post-prostatectomy than was improvement in all domains except couple adjustment, where improvement was more frequent.

### Differential Effects of Age and Presurgery Sexual Adjustment

Since the literature suggests that both age and presurgery sexual functioning are related differentially to the various aspects of sexual adjustment, a series of analyses was carried out to evaluate the independent and interactive contributions of presurgery age and sexual adjustment to postsurgery sexuality.

*Age.* Subjects were divided into younger (age less than 64,  $M = 60$ ) and older (age equal to or greater than 65,  $M = 69$ ) groups and the relationship between age and sexual adjustment prior to surgery was explored in a series of two-way analysis of variance (ANOVA) comparisons. Results, detailed in Table II, show that younger and older participants did not differ in couple sexual satisfaction and that they engaged in sexual activity with the same frequency, between once a week and once every 2 weeks. The younger subjects, however, reported a higher frequency of sexual desire. In addition, younger subjects had greater confidence in their erectile ability and performed better on a broad-based measure of global sexual functioning (which includes frequency, arousal, orgasmic capacity, and erectile ability). Indeed, whenever there were differences, younger men fared better than older men.

<sup>6</sup>Variables examined in the figures are as follows. Capacity dimension: Global Sexual Functioning. Cognitive dimension: Sexual Self-Efficacy, Satisfaction with Male's Sexual Ability. Affective dimension: Frequency of Sexual Arousal. Couple behavior dimension: Frequency of Couple Sexual Activity, Desired Frequency of Couple Sexual Activity. Couple adjustment dimension: Satisfaction with Couple Sexual Relationship, Couple Sexual Harmony.

Table I. Pre to Post Prostatectomy Changes

Variable	Score		t	Change pre to post surgery	Meaning of results
	Pre	Post			
Psychological adjustment Brief Symptom Inventory (BSI) <sup>a</sup>	.31	.26	1.30	No change	Well adjusted
Marital functioning Locke-Wallace Marital Adjustment Scale (MAS)	113.04	113.29	.29	No change	Happy
Physical health Number of physical symptoms <sup>a</sup>	1.49	1.19	2.05**	Fewer post	Generally healthy, fewer symptoms post
Sexual adjustment: Capacity Global Sexual Functioning (SHF) <sup>a</sup> Orgasm with	.43	.48	4.00****	Worse post	Poorer global sexual functioning post
Masturbation (SHF) <sup>a</sup>	3.81	4.06	1.20	No change	Orgasm reached 50% of the time
Caressing (SHF) <sup>a</sup>	3.64	3.90	1.22	No change	Orgasm reached 25-50% of the time
Intercourse (SHF) <sup>a</sup>	1.51	2.04	3.93****	Lower post	Change from almost 90% of the time to 75%
Anhedonia (SHF) <sup>a</sup>	1.54	1.71	1.19	No change	Rarely occurs (less than 10% of the time)
Premature ejaculation (SHF) <sup>a</sup>	1.64	1.87	1.36	No change	Rarely occurs (less than 10% of the time)
Retrograde ejaculation (SHF-A) <sup>a</sup>	1.64	3.28	3.82****	More post	Change from less than 10% of the time to 25-50%
Erections					
Difficulty obtaining (SHF) <sup>a</sup>	2.18	2.68	2.61****	Worse post	Change from less than 10% of the time to almost 20%
Difficulty maintaining (SHF) <sup>a</sup>	2.17	2.69	3.42****	Worse post	Change from approximately 10% of the time to almost 25%
Morning erections (SHF-A) <sup>a</sup>	3.39	3.31	.92	No change	25-50% of the time



Sexual adjustment: Behavior						
Frequency of						
Individual sexual behavior	8.28	8.53	1.54	No change	Less than 1/month	
Masturbation (SHF) <sup>a</sup>				Lower post	Change from 1/week to 1/2 weeks	
Couple sexual behavior	5.42	5.79	2.08**	Lower post	Change from 1-2/week to 1/week	
Couple sexual activity (SHF) <sup>a</sup>	4.47	4.69	1.69*	Lower post	More restricted sexual repertoire post	
Desired couple sexual activity (SHF) <sup>a</sup>	56.99	55.37	1.76*	Lower post		
Repertoire (SII)				No change	4-7 min	
Duration of				No change	7-10 min	
Intercourse (SHF)	4.10	4.24	.83			
Foreplay (SHF)	4.33	4.30	.16			
Sexual adjustment: Cognitive dimension						
Sexual self-efficacy (SSES-E)	62.06	56.85	3.05***	Worse post	Lower sexual self-confidence post	
Satisfaction with male's sexual ability (GSTS)	69.37	65.33	1.89*	Less post	Less satisfied with male's sexual ability post	
Sexual adjustment: Affective dimension						
Frequency of sexual arousal (SHF) <sup>a</sup>	4.06	4.43	1.90*	Lower post	Change from 2/week to 1-2/week	
Sexual adjustment: Couple relations						
Satisfaction with couple sexual relationship (SHF)	4.99	4.57	1.69*	Worse post	Moderately satisfactory in general, worse post	
Couple sexual harmony (SII) <sup>a</sup>	81.94	83.94	.59	No change	Reasonably compatible	

<sup>a</sup>Lower scores indicate better adjustment.

\**p* < .10.

\*\**p* < .05.

\*\*\**p* < .01.

\*\*\*\**p* < .001.

Table II. Age and Pre to Post Surgery Mean Changes in Sexual, Psychological, Physical, and Marital Adjustment

Variable	Group	Time		ANOVA results
		Pre	Post	
Psychological adjustment				
Brief Symptom Inventory (BSI) <sup>a</sup>	Younger	.32	.28	Group $F(1,69) = .26$
	Older	.29	.25	Time $F(1,69) = 2.60$
				Interaction $F(1,69) = .02$
Marital functioning				
Locke-Wallace Marital Adjustment Scale (MAS)	Younger	110.39	111.14	Group $F(1,69) = 1.48$
	Older	115.69	115.51	Time $F(1,69) = .08$
				Interaction $F(1,69) = .20$
Physical health				
Number of physical symptoms <sup>a</sup>	Younger	1.59	1.10	Group $F(1,70) = .00$
	Older	1.39	1.28	Time $F(1,70) = 4.39^{**}$
				Interaction $F(1,70) = 1.87$
Sexual adjustment: Capacity				
Global sexual functioning <sup>a</sup>	Younger	.42	.46	Group $F(1,66) = 3.75^*$
	Older	.45	.50	Time $F(1,66) = 14.99^{*****}$
				Interaction $F(1,66) = .00$
Orgasms				
Retrograde ejaculation (SHF-A) <sup>a</sup>	Younger	1.30	2.90	Group $F(1,37) = 3.26^*$
	Older	2.00	3.68	Time $F(1,37) = 14.25^{*****}$
				Interaction $F(1,37) = .01$
Erections				
Morning erections (SHF-A) <sup>a</sup>	Younger	3.44	3.67	Group $F(1,34) = .71$
	Older	3.33	2.94	Time $F(1,34) = .91$
				Interaction $F(1,34) = 1.69$

Sexual adjustment: Behavior						
Frequency of couple sexual behavior						
	Couple sexual activity (SHF) <sup>a</sup>					
		5.25	5.72	5.72	Group $F(1,70) = .44$	
		5.58	5.86	5.86	Time $F(1,70) = 4.26^{**}$	
					Interaction $F(1,70) = .29$	
Desired couple sexual activity (SHF) <sup>a</sup>						
		4.25	4.42	4.42	Group $F(1,69) = 3.13^*$	
		4.69	4.97	4.97	Time $F(1,69) = 2.84^*$	
					Interaction $F(1,69) = .20$	
Sexual adjustment: Cognitive dimension						
Sexual self-efficacy (SSES-E)						
		70.03	66.17	66.17	Group $F(1,70) = 16.54^{***}$	
		54.10	47.53	47.53	Time $F(1,70) = 10.25^{***}$	
					Interaction $F(1,70) = .69$	
Satisfaction with male's sexual ability (GSTS)						
		71.67	68.53	68.53	Group $F(1,69) = 2.40$	
		67.00	62.03	62.03	Time $F(1,69) = 3.81^*$	
					Interaction $F(1,69) = .19$	
Sexual adjustment: Affective dimension						
Frequency of sexual arousal (SHF) <sup>a</sup>						
		3.78	4.00	4.00	Group $F(1,68) = 6.07^{**}$	
		4.35	4.88	4.88	Time $F(1,68) = 3.68^*$	
					Interaction $F(1,68) = .61$	
Sexual adjustment: Couple relations						
Satisfaction with couple sexual relationship (SHF)						
		4.89	4.64	4.64	Group $F(1,68) = .01$	
		5.09	4.50	4.50	Time $F(1,68) = 2.89^*$	
					Interaction $F(1,68) = .47$	
Couple Sexual Harmony (SII) <sup>a</sup>						
		79.50	80.00	80.00	Group $F(1,34) = .35$	
		84.39	87.89	87.89	Time $F(1,34) = .34$	
					Interaction $F(1,34) = .19$	

<sup>a</sup>Lower scores indicate better adjustment.

\* $p < .10$ .

\*\* $p < .05$ .

\*\*\* $p < .01$ .

\*\*\*\* $p < .001$ .

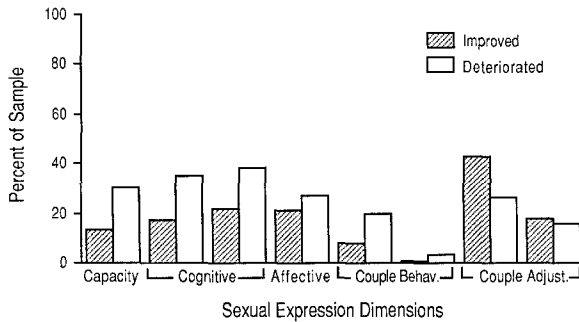


Fig. 1. Percentage of the whole sample who improved or deteriorated postsurgery on various dimensions of sexual expression.

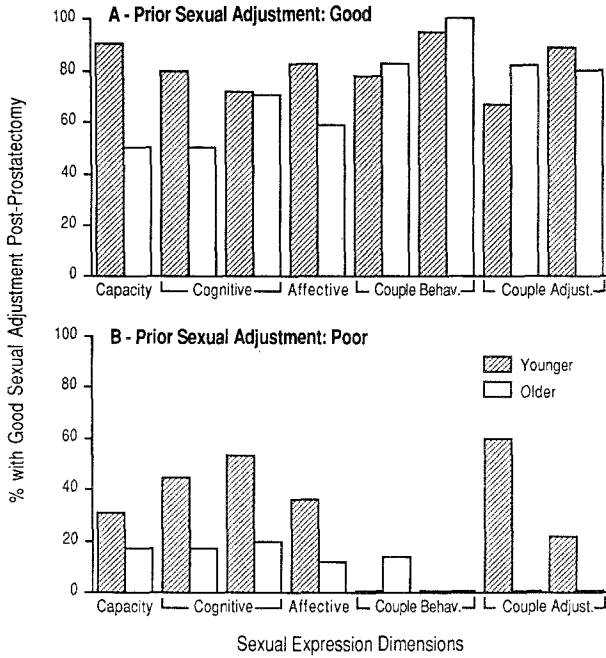
**Presurgery Sexual Adjustment.** Correlational results show that pre- and postsurgery scores on all non-SHF measures are highly correlated (Global Sexual Functioning  $r = .57$ ;  $p < .001$ ; Sexual Self-Efficacy  $r = .79$ ,  $p < .001$ ; Satisfaction with Male's Sexual Ability  $r = .51$ ,  $p < .001$ ; Global Sexual Harmony  $r = .83$ ,  $p < .001$ ). Correlation coefficients on SHF variables are not presented because these are difficult to interpret due to the restricted range of scores and because of the large number of subjects with identical (median/mode) scores.

In addition, a series of  $\chi^2$  analyses (on variables listed in Fig. 1) where subjects were grouped according to pre- and postsurgery sexual adjustment on median scores also shows that, with the exception of Satisfaction with the Sexual Relationship, pre- and postsurgery scores are strongly associated ( $\chi^2$  values range from 7.87 to 23.98,  $p < .01$  or better).

**Age and Presurgery Sexual Adjustment.** As the results noted above indicate, both age and presurgery sexual status influence postsurgical adjustment. To explore the interactive effects of these variables, age and presurgery sexual status were examined in relation to postprostatectomy sexual outcome on selected variables.<sup>6</sup>

An appropriate index of the interaction between age and presurgery sexual adjustment is provided by examination of the following percentages: (1) the percentages of younger and older men who had experienced *good sexual adjustment prior to surgery* and who were, postsurgery, functioning well or poorly and (2) the percentages of younger and older men who had experienced *poor sexual adjustment prior to surgery* who were functioning well or poorly postsurgery. To determine change pre to postsurgery, scores were split on presurgery medians for the variable in question (subjects whose scores fell at the median were excluded). Figure 2 provides the best illustration of the complex findings on the interaction between age and presurgery sexual status.

Results in Fig. 2 show that (1) men with good presurgery sexual adjustment were more likely to experience good adjustment postsurgery than were



**Fig. 2.** Percentage of younger and older subjects who experienced good sexual adjustment postprostatectomy as a function of presurgery sexual status; (A) data for subjects whose presurgery sexual adjustment was good; (B) data for subjects whose presurgery sexual adjustment was poor.

those with poor presurgery adjustment, (2) younger men were more likely to retain good sexual capability, sexual self-confidence, and arousal than were older men, and (3) they were more likely to experience improvement on these dimensions than older men if they had experienced problems prior to surgery. In addition, (4) older men who had high couple scores prior to surgery generally were more likely to remain in the well-functioning range on couple behavior and adjustment than were younger individuals, although (5) younger men were generally more likely to improve on these dimensions.

## DISCUSSION

### Sexual, Marital, and Psychological Consequences of Transurethral Prostatectomy

The results indicate no significant changes in pre- to postsurgery ratings of couple sexual harmony or adjustment. Psychological and marital ad-

justment showed little change pre- to postsurgery and general health improved. When measurement became more fine-grained, however, small but highly consistent indications of deterioration in sexual adjustment post-prostatectomy became evident. Deterioration in sexual expression includes lower frequency and less variability in couple sexual activities, diminished sexual desire, reduced erectile ability, diminished sexual self-confidence and satisfaction with sexual abilities, and an increased incidence of retrograde ejaculation. In spite of deterioration in these realms, ratings of general couple sexual satisfaction and harmony, on the whole, did not appear to be affected adversely by surgery.

### **Differential Effects of Age and Presurgery Sexual Adjustment**

Studies in the literature have shown enormous variability in the sexual consequences of prostatectomy (cf. Libman and Fichten, 1987). This variability in reports of sexual impairment postprostatectomy led us to assess the extent to which this variability is due to presurgery patient characteristics. The present results indicate that when subjects were grouped by age and differentiated in terms of good or poor presurgery sexual adjustment, a specific pattern emerged. First, older males were more likely to experience sexual difficulties both before and after surgery than were younger men. Second, the surgery had a different impact on older and younger individuals. Younger men who experienced good presurgery individual sexual adjustment were more likely to remain well adjusted after surgery than were their older counterparts. Furthermore, while improvement in sexual adjustment did not occur often, it was considerably more likely in the younger group of sexually dysfunctional males than in the equivalent older group.

Couple sexual adjustment, on the other hand, appeared to show a trend opposite to individual adjustment. First, in spite of deterioration postsurgery in most aspects of individual male sexual performance, couple sexual satisfaction and harmony were not significantly impaired by surgery. Second, while younger males who had experienced good individual sexual adjustment prior to prostatectomy were more likely to remain well adjusted in this area after surgery, older men had the advantage in the area of couple sexual adjustment. While these results must be considered tentative because no statistical significance levels were computed, the data suggest that sexuality in younger males is less vulnerable to disruption by prostatectomy and that couple satisfaction and behavior do not necessarily parallel individual functioning. Indeed, couple sexual adjustment may be more heavily influenced by marital than by sexual factors.

The retrospective nature of the experimental design and the absence of a comparison group are major limitations of the present study. Changes

found in pre- to postprostatectomy sexual adjustment may have been due to factors other than prostate surgery. For example, subjects' estimates of presurgery adjustment may have been overly optimistic. Of course this would bias the results toward high deterioration rates. Alternately, changes may have been the result of the stresses of surgery in general, rather than of the specific procedure. Before firm conclusions may be drawn, well-designed studies with a prospective research design must be carried out. In this regard, a comparative evaluation of data derived from retrospective and prospective experimental designs is urgently needed, as are studies comparing prostatectomy to other "similar" surgical procedures. An additional limitation is the lack of a physiological measure of erectile functioning. Despite the necessity of "equipment" and possible laboratory conditions for such measurement, data derived from physiological assessment would strengthen conclusions based solely on self-report measures.

Despite these methodological limitations, the following implications of the present investigation should be noted. The concept of sexual adjustment is not homogeneous. Specifically, our results indicate that couple sexual satisfaction and harmony follow a course which appears to be different from other aspects of sexual expression such as global sexual functioning, subjective satisfaction with male sexual performance, sexual self-confidence, arousal, and actual or desired frequency of sexual activity.

This pattern of findings underlines the multidimensional nature of sexual expression and suggests that the following aspects of sexual adjustment should be taken into account when evaluating the sexual consequences of prostatectomy: the capacity dimension (which includes a range of sexual functioning variables), the cognitive dimension (which includes sexual self-confidence and satisfaction with sexual performance), and the affective dimension (which includes sexual arousal and interest factors). In addition, sexual expression may be differentiated in terms of *individual* capacity, cognitive, and affective aspects and *couple* sexuality (which includes both couple behaviors and couple adjustment). The present findings emphasize that the effects of prostate surgery may differ depending on whether the focus is on individual sexual functioning or the couple sexual relationship, indicating that these aspects of sexuality are independent and must be evaluated separately. Moreover, the data clearly indicate that the question of how transurethral prostatectomy affects sexual function can be answered meaningfully only by taking into account the individual's age and prior sexual status.

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