Response Shifts in Prostate Cancer Patients: An Evaluation of Suppressor and Buffer Models

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Prostate Cancer as a Model for Studying Response Shifts and Quality of Life

Individuals afflicted with life-threatening or disabling illness report a very positive or stable quality of life (QOL) with surprisingly high frequency. Schwartz and Sprangers (see chapters 1 and 6) have invoked the concept of response shifts to help explain such paradoxical findings. They define response shifts as a change in the meaning of one's self-evaluation of QOL as a result of a change in one's internal standards of measurement (i.e., recalibration), the importance attributed to component domains constituting QOL (i.e., change in values), or construal of the meaning of QOL (i.e., concept redefinition). As a result of these shifts, individuals can appear to sustain a very high subjective QOL despite negative changes in their physical health.¹

In this chapter, we examine response shifts as they relate to QOL in patients with prostate cancer. Cancer patients, including those with chronic treatment-related illness and dysfunction, often report that their QOL is equal to or superior to that of individuals without cancer or with

¹Response shifts could result in negative changes in self-evaluations of QOL. Our chapter focuses on explaining the potential positive influences of response shift on self-evaluations of QOL.
less severe illness (e.g., Andrykowski, Brady, & Hunt, 1993; Lepore, in press; Lepore & Helgeson, 1998a; Litwin et al., 1995). Perhaps response shifts can help explain why having cancer, or experiencing severe and negative side effects from cancer, does not appear to undermine QOL in many patients (see Breetvelt & van Dam, 1991). We propose that response shifts reflect cognitive processes that enhance or sustain QOL in people facing serious health problems, such as cancer.

Prostate cancer is the second leading cause of cancer death among American men (American Cancer Society, 1998). Many prostate tumors are indolent, but aggressive ones can result in death in months. Fortunately, modern technologies for detecting and controlling prostate cancer have spared many men from untimely deaths. However, even if cured of prostate cancer, patients can experience intense and enduring physical complications related to their treatment (Lepore & Helgeson, 1998a).

The most common complications associated with prostate cancer and its treatment are sexual and urinary dysfunction. Litwin et al. (1995) found that, compared to men without prostate cancer in an age-matched control group, men treated for prostate cancer reported significantly worse sexual and urinary function. Problems in sexual function included decreases in frequency of erections, quality of erections, and ability to achieve sexual climax. Urinary problems included greater frequency and amounts of leakage. Others (Adolfsson, Helgason, Dickman, & Steineck, 1998) have reported similar results. We would expect persistent problems in sexual and urinary functioning to have a profound negative effect on men’s QOL. Yet the empirical data do not support this commonsensical notion. In addition to assessing physical complications associated with prostate cancer, Litwin et al. (1995) assessed men’s QOL in many domains, including social relationships, physical and role functions, and emotional well-being. They found no differences in QOL between men with prostate cancer and their cancer-free counterparts. Other investigators have found that men treated for prostate cancer actually reported higher QOL than did similarly aged men without prostate cancer (Frazer, Brown, & Graves, 1998) or men with benign prostate problems (Lepore & Helgeson, 1998b).

Despite the physical complications associated with prostate cancer and its treatment, men with prostate cancer often do not report a worse QOL than similarly aged men without cancer, men with other prostate problems, or normal populations without cancer. This discontinuity between physical health and QOL is precisely the phenomenon that Schwartz and Sprangers have attempted to explain with the response shift construct. Therefore, prostate cancer provides a good model for examining the role of response shifts in QOL.

### Suppressor and Buffering Models of Response Shifts and QOL

In this chapter, we investigate two hypothetical models of the role of response shifts in QOL among men recovering from prostate cancer treatments. We formulated these models based on the emerging theory of re-
response shifts developed by Sprangers and Schwartz (see chapter 1 for a full discussion). According to one model, the suppressor model, response shifts can suppress the relation between physical health problems and QOL. According to the buffering model, response shifts can moderate, or buffer, the relation between physical health problems and QOL. These two models are illustrated in Figure 3.1 (for detailed discussions of suppressor and moderator models, see Baron & Kenny, 1986; Cohen & Cohen, 1983; Evans & Lepore, 1997). Both models can be used to explain how response shifts can attenuate the relation between physical health problems and QOL and how response shifts can be viewed as a potentially adaptive mechanism.

According to the suppressor model, physical health problems act as a catalyst to response shifts. That is, physical health problems stimulate response shifts by causing people to recalibrate their QOL, change their values, or change the meaning of QOL. Response shifts, in turn, sustain or enhance QOL. There are several assumptions of this model that can be tested statistically. First, response shifts should be strongest in people who experience the greatest negative changes in health. Second, response

![Figure 3.1. Schematic of the suppressor (top panel) and buffering (bottom panel) models of response shift.](image-url)
shifts should be associated with positive QOL outcomes. Third, to the extent that response shifts suppress the association between health problems and QOL, we should observe a negative relation between health problems and QOL only when the effects of response shifts have been statistically controlled (i.e., using analysis of covariance techniques).

According to the buffering model, response shifts moderate (i.e., attenuate) the negative association between physical health problems and QOL (Schwartz et al., 1999; see also chapter 1). The buffering model assumes that response shifts can be stimulated by mechanisms such as coping styles and social support. From this perspective, some individuals with health problems will exhibit response shifts, and others will not. The model further assumes that health problems will be associated with a poorer QOL in individuals who do not make response shifts but not in individuals who do make response shifts. The primary criterion for testing this model statistically is evidence of an interactive effect of response shifts and health problems on QOL. Specifically, health problems should be associated with poorer QOL in individuals who do not make response shifts and unrelated to QOL in individuals who do make such shifts.

Note that the general theory of response shift being developed by Schwartz and Sprangers can accommodate both buffer and suppressor effects. In other words, these models are not mutually exclusive. It is possible that changes in health status can act as a catalyst to response shifts and interact with response shifts. For instance, individuals with more severe negative health changes might make more extreme response shifts than will individuals with relatively minor health changes. Yet, at the same time, response shifts may be critical in buffering the effects of health problems on QOL. Furthermore, it is possible that changes in health status and interpersonal (e.g., social support) or intrapersonal (e.g., coping style) mechanisms can stimulate response shifts.

In testing these models, we focused on two components of response shift: recalibration of internal standards for measuring QOL and changes in values. Because investigations into response shifts and QOL are relatively new, there is little known about which measures are most reliable or valid. Furthermore, it is not known whether different aspects of response shifts influence QOL in the same way. For these and other reasons, it is desirable to include more than one indicator of response shifts in QOL research (see chapter 6).

**Recalibration of Internal Standards**

Recalibration reflects a change in the individual's internalized standards for measuring QOL. According to the suppressor model, negative changes in health status may cause people to change their internal standards for measuring QOL (cf. Breetvelt & van Dam, 1991). In turn, this recalibration of internal standards can result in stable or higher QOL in individuals over time.

To illustrate this process, we can consider how recalibration might
suppress the association between health problems and QOL in a prostate cancer patient. Prior to being diagnosed with prostate cancer, a patient might rate his anxiety as moderate. At the time of diagnosis, the patient might realize that his life is at risk and consequently rate his anxiety as high. After having his prostate removed, the patient may experience complications such as sexual dysfunction and incontinence but may rate his anxiety as only moderate relative to the high anxiety brought on by the diagnosis. Furthermore, in retrospect he might reevaluate his original anxiety as being low rather than moderate, because the anchors and intervals for evaluating anxiety have changed as a result of having a life-threatening diagnosis. Thus, the rating of moderate anxiety has different meanings to the patient at different points in time. Furthermore, as a result of the recalibration, the patient's rating of anxiety from prediagnosis to posttreatment looks stable, even though his physical functioning is objectively worse posttreatment.

In the buffering model, recalibration is conceived of as an individual difference variable, perhaps driven by interpersonal (e.g., social support) or intrapersonal (e.g., coping style) mechanisms. The model maintains that when recalibration occurs, it can attenuate the association between health problems and QOL. To illustrate these processes, we can consider how recalibration might attenuate the negative association between health problems and QOL in a patient with prostate cancer. In this illustration, we identify downward social comparisons (Wood & Van Der Zee, 1997) as a coping style that could influence QOL through scale recalibration.

A prostate cancer patient engaging in downward social comparisons might scan the social environment to identify patients in worse physical condition than his own. This process can lead him to expand his internal scale to account for worse outcomes. For example, a patient who initially perceives that his role functioning is poor might upgrade his self-evaluation of role functioning after identifying individuals with worse role functioning. These changes in evaluation of role functioning can occur even though the patient's objective role functioning has not changed. Furthermore, the patient could apply this positive reevaluation of role functioning to both his current state and his state prior to making social comparisons. In contrast, a patient who does not engage in downward social comparisons might not recalibrate his internal standards for evaluating QOL. Such a patient would not exhibit a positive change in his QOL.

**Changes in Values**

Similarly, we can speculate on how changes in values can act as a suppressor or buffer of the relation between health problems and QOL. A cancer diagnosis can evoke an existential crisis in some individuals. This may lead to a search for meaning in life (Silver, Boon, & Stones, 1983) and a reordering of life's priorities (Rapkin & Fischer, 1992). For others, the negative side effects and life threat associated with cancer might challenge fundamental life goals. As a result of reevaluating the feasibility and im-
portance of achieving certain goals, cancer patients might reorder or change important life goals (for a detailed discussion of goal constructs and goal restructuring, see Austin & Vancouver, 1996). We believe that changes in primary goals are accompanied by changes in individuals' basic values in life. That is, changing primary goals involves a fundamental cognitive restructuring, or transformation, of basic beliefs about what is good and important in life.

Although cancer can undermine QOL by robbing people of meaning and threatening life goals, changing values can help people to restore meaning (i.e., by identifying something important in life) and defuse goal threats (i.e., by changing or reordering goals). In this way, changes in values might help patients to accommodate to limitations imposed by their illness. These processes could enhance QOL by changing the implications the illness has for their QOL (i.e., the precursors to QOL). Changes in values may influence the relation between health problems and QOL through suppressor or buffering effects. The Sprangers and Schwartz model of response shifts suggests that health problems can be a catalyst, or stimulus, for change in values. If changes in values occur as a normative response to health problems, then we would expect these changes to suppress the association between health problems and QOL. That is, health problems would trigger changes in values, which in turn would enhance QOL. On the other hand, if the tendency to change values is an individual difference variable, then we would expect to see interactive effects of changes in values and health problems on QOL. Specifically, health problems will be associated with poorer QOL outcomes among patients who do not make value changes than among patients who do make such changes.

A Study of Response Shifts Among Cancer Patients

We evaluated the suppressor and buffering models in men who had been treated for nonmetastatic prostate cancer. We investigated whether two aspects of response shifts—recalibration of internal standards and changes in values—act as suppressors or buffers of the association between cancer-related health problems and QOL. Following recommendations by Schwartz and Sprangers (see chapter 6), we assessed recalibration of internal standards using the thentest approach and assessed changes in values using a measure of primary life goal changes (see also chapters 4 and 9 for other examples using these methods). Physical health problems were assessed with a measure of urinary and sexual dysfunction, because these are the primary physical complications resulting from prostate cancer treatments. QOL was assessed with a standardized measure of social—emotional functioning.

Based on the suppressor model, we predicted that prostate cancer patients experiencing worsening health problems would be more likely to make response shifts than would men whose health improved (i.e., health problems are a catalyst of response shifts). We tested this hypothesis by examining whether changes in health problems (e.g., urinary and sexual
dysfunction) were associated with recalibration of internal standards or changes in values. The suppressor model also asserts that response shifts mediate (suppress) the association between health problems and QOL. We tested this hypothesis by examining whether the associations between changes in health problems and changes in QOL increased after statistically controlling for the effects of response shift (i.e., covarying recalibration and changes in values).

Based on the buffering model, we predicted that prostate cancer patients experiencing worsening health problems (e.g., sexual or urinary dysfunction) and engaging in response shifts would report greater improvements in their QOL than would their counterparts who do not make response shifts. We tested this hypothesis by examining the interactive effects of response shift and changes in health status on changes in QOL.

Method

Participants and Procedure

Data were collected from 166 men who had been treated for nonmetastatic prostate cancer. All men were participating in a larger study on the effects of education and social support on QOL in men treated for prostate cancer. The results of the intervention study will be reported elsewhere, as they did not affect the findings reported herein. The mean age of the men was 65. The racial distribution was 86.7% White, 12.7% Black, and 0.6% Asian. Most (83.7%) of the men were married. Medical treatments for prostate cancer included radical prostatectomy (53.6%), brachytherapy (19.9%), pelvic irradiation (17.5%), cryosurgery (4.8%), or a combination of brachytherapy and pelvic irradiation (4.2%). We collected data on QOL, physical health problems, and response shifts in two structured, face-to-face interviews, spaced 10 weeks apart. The first interview took place approximately one month after the treatment start date and six months after diagnosis.

Measures

Quality of life: The mental component score of the SF-12. We used the 12-item version of the Medical Outcomes Study Short-Form General Health Survey (SF-12; Ware, Kosinski, & Keller, 1995) to assess perceived QOL at Time 1 (T1) and Time 2 (T2). The SF-12 provides an aggregate mental component summary (MCS) score, which reflects QOL in the social–emotional domain (i.e., social and emotional functioning, vitality, role functioning). Sample items include “During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities?” “During the past 4 weeks, how often have you felt calm and peaceful?” and “During the past 4 weeks, have you accomplished less than you would have liked as a result of an emotional problem?” The measure has good psychometric properties and has been
well-validated (Ware et al., 1995). Scores are standardized and range from a low of 0 to a high of 100, with a higher score indicative of better QOL.

**Physical health problems: The Prostate Cancer Index.** We used the UCLA Prostate Cancer Index (PCI; Litwin et al., 1998) to assess physical health problems (urinary and sexual dysfunction) at T1 and T2. A sample item from the urinary functioning scale is “Over the past 4 weeks, how often have you leaked urine?” A sample item from the sexual functioning scale is “How would you describe the quality of your erections in the last 4 weeks?” The two subscales have good psychometric properties and validity (Litwin et al., 1998). Scores range from 0 to 100, with higher scores indicative of more problems in urinary or sexual functioning.

**Response shift: Recalibration.** We used the then test methodology to assess changes in internal standards of evaluating QOL (see chapter 6). Accordingly, men completed the SF-12 at T1 using conventional instructions. They also completed the SF-12 at T2 using the then test instructions. Specifically, at T2 they were instructed to think back to the T1 interview period and answer the questions based on their QOL at that time (i.e., “then”). A response shift is indicated by a difference between men’s original T1 and retrospective T1 reports of their QOL [then test SF-12 score − T1 SF-12 score]. This difference can be either positive or negative. A positive difference indicates that, in retrospect (at T2), men reported their T1 QOL to be better than what they originally reported at T1. A negative difference indicates that in retrospect men reported their T1 QOL to be worse than what they originally reported at T1.

**Response shift: Changes in values.** We administered open-ended questions at T1 and T2 to assess whether men made changes in values. This was operationalized by looking at changes in primary life goals because such changes are likely to be reflective of a fundamental cognitive restructuring about what is good and important in life. Men were asked to report on their central life goal. The interviewer read the following instructions to determine men’s central life goal: “I’d like you to take a second and think about the major goals in your life for the next year. What is the most important thing you would like to accomplish or achieve over the next year?” If more than one life goal was identified, men were asked to identify the single-most important goal. This procedure was modeled after one used by Rapkin (see Rapkin & Fischer, 1992; Rapkin et al., 1994).

Goals were summarized into a list from which we identified 11 global dimensions. Judges independently coded goals as belonging to one of these dimensions. Interrater reliability was good (kappa = .86). Examples of goal dimensions include leisure/hobbies (e.g., travel), self-actualization (e.g., increase faith), financial (e.g., invest), social/interpersonal (e.g., spend more time with family), and health goals (e.g., stay healthy).
**Data Analytic Approach**

We used a combination of correlation and regression analyses to test the suppressor and buffering models. Because we were interested in predicting changes in QOL based on changes in health status and response shifts, we first computed some change scores. We computed a QOL change score using the T1 and T2 SF-12 scores (T2 SF-12 score - T1 SF-12 score). Higher scores on the QOL difference index reflect improvements in QOL from T1 to T2. We then created four predictor variables. Two of the predictors were indicators of response shifts. We computed recalibration using the thentest and T1 SF-12 scores (thentest SF-12 score - T1 SF-12 score). Higher scores on this measure mean that men's retrospective (i.e., "then") reports of their QOL were more positive than their original (T1) reports. Lower scores indicate that men's retrospective reports of their QOL were more negative than their original reports. We created a dichotomous index of change in values by coding whether life goals changed over time (0 = same primary life goal at T1 and T2; 1 = different primary life goal at T1 and T2). The other two predictors were indicators of changes in health status based on the PCI: changes in urinary function (T1 urinary functioning - T2 urinary functioning) and changes in sexual function (T1 sexual functioning - T2 sexual functioning). Higher scores indicate that men reported improvements in sexual and urinary functioning over time.

The main goal of the suppressor analyses is to test whether a null relation between negative health status changes and QOL can be explained by response shifts. This can be demonstrated statistically in two steps: (1) show that negative changes in urinary and sexual functioning are unrelated to changes in QOL over time when the response shift variables are left free to vary, and (2) show that negative changes in urinary and sexual functioning are associated with negative changes in QOL after the effects of response shifts are statistically controlled. We used regression analyses to test these relations. We repeated the analyses for each health problem indicator (i.e., changes in urinary problems, changes in sexual problems) and for each response shift indicator (i.e., recalibration, changes in goals). For instance, we regressed changes in QOL on changes in urinary functioning with and without recalibration entered as a covariate. We used correlation analyses to test the viability of other assumptions of the suppressor model, including the assumption that negative changes in urinary and sexual functioning would act as a catalyst of response shifts and that response shifts would be associated with better QOL.

We used a series of moderated regression analyses (Aiken & West, 1991; Lunnenborg, 1994) to test the predictions of the buffering model. The aim of these analyses was to determine whether the relation between changes in sexual or urinary problems and changes in QOL was weaker among men who make response shifts than among men who do not make response shifts. We computed separate regression analyses for each health problem indicator (i.e., changes in urinary problems, changes in sexual problems). We used separate regression analyses to evaluate the moder-
ating role of recalibration and changes in values, respectively. For instance, we regressed changes in QOL on changes in urinary functioning, changes in life goals, and the cross product of changes in urinary functioning $\times$ changes in life goals. Significant interactions were plotted to interpret whether the effects were consistent with buffering.

**Results**

The regression analyses did not support the suppressor model. Change in QOL was unrelated to increases in urinary and sexual problems either with or without the response shift variables entered as covariates. Furthermore, increases in urinary and sexual functioning were not correlated with response shifts when operationalized as changes in life goals and recalibration of QOL (see Table 3.1). There was a positive relation between QOL recalibration and change in QOL over time, but life goal change was not significantly related to change in QOL.

Next, we tested the buffering model. First, we tested whether changes in life goals attenuate the relation between negative changes in physical functioning (i.e., urinary and sexual functioning) and QOL. We found a significant urinary function change $\times$ life goal change interaction (beta $= -.14$, $p < .05$). As is shown in Figure 3.2, men whose urinary functioning worsened over time had improved QOL if they changed their life goal and decrements in QOL if they did not change their goal. Changes in sexual functioning did not interact with changes in life goals.

Second, we tested whether scale recalibration attenuates the relation between negative changes in physical functioning (urinary and sexual functioning) and QOL. We found a main effect of recalibration on QOL (beta $= .65$, $p < .001$). Specifically, men who made a large positive recalibration of their T1 QOL reported larger increases in their QOL by T2 than did men who made a relatively small positive recalibration of their T1 QOL. Men who made a large negative recalibration of their T1 QOL reported larger decreases in their QOL by T2 than men who made a relatively small negative recalibration of their T1 QOL. This main effect was qualified by a marginally significant urinary function change $\times$ recalibration interaction (beta $= -.12$, $p < .06$). As is shown in Figure 3.3, men whose urinary functioning worsened over time had decrements in QOL if

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<th>Table 3.1. Intercorrelations of Functioning, Response Shift, and Quality of Life (QOL) in Six Prostate Cancer Patients</th>
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<td>Variable</td>
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<td>2. Sexual function change</td>
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<td>3. Life goal change</td>
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<td>4. Recalibration of QOL</td>
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*Note. *$p < .05$, two-tailed. **$p < .01$, two-tailed.*
**Figure 3.2.** Slopes of the relation between changes in urinary function (T1 – T2) and changes in QOL (T2 SF-12 – T1 SF-12) among prostate cancer patients as a function of change in primary life goals (T1 – T2).

**Figure 3.3.** Slopes of the relation between changes in urinary function (T1 – T2) and changes in QOL (T2 SF-12 – T1 SF-12) among prostate cancer patients as a function of recalibration of QOL (thentest SF-12 – T1 SF-12). Note: Positive scale recalibration is based on a recalibration score of +1 SD above the mean. A negative scale recalibration is based on a recalibration score of −1 SD below the mean.
they made a negative recalibration, but not if they made a positive recalibration. Changes in sexual functioning did not interact with recalibration.

**Discussion**

In this chapter, we identified two conceptual models of response shifts—the suppressor and buffer models—that could account for the frequently observed lack of association between health problems and QOL in cancer patients. We tested these models in men who had been treated for localized prostate cancer, because prior research suggests that QOL is often stable and positive in these men, despite frequent problems with sexual and urinary functioning. Our analyses produced some evidence consistent with the buffering model. There was an interactive effect suggesting that response shifts moderated the association between increases in urinary functioning problems and changes in QOL. Specifically, response shifts appeared to buffer men from the negative effects of declines in urinary functioning and QOL over time. We found no evidence to support the suppressor model of response shifts. Overall, the results suggest that the response shift construct is valuable for accounting for individual differences in QOL among patients with prostate cancer who experience health complications after treatment.

The null results from the suppressor model analyses can be interpreted in several ways. First, it is possible that health problems do not act as a catalyst of response shifts. We found that neither urinary nor sexual complications were associated with response shifts (i.e., recalibration, changes in values). We can tentatively conclude that health problems may be a necessary condition for response shifts (i.e., all people who make response shifts have health problems), but not a sufficient condition (i.e., not all people who have health problems make response shifts). This raises an interesting question about what factors might trigger response shifts. In their theory of response shifts, Sprangers and Schwartz suggested a variety of potential triggers (e.g., coping style, social support, and social comparison).

Second, it is possible that the timing of our measurement prevented us from observing an association between health problems and QOL. All measurement occurred in the first four months after men’s treatment. If men perceived that the negative side effects of treatment were “normal” during this period, they might not have been inclined to make response shifts. That is, there would be no need to accommodate short-term complications. In addition, some men might have made response shifts before their treatment (i.e., after their diagnosis), rather than during the period under investigation. Our analyses would have coded these men as not making response shifts (i.e., no recalibration, no change in values).

A third explanation of the null results is that some men might not have perceived the side effects of incontinence or sexual dysfunction as a major problem. Men in this age cohort could have been dealing with urinary and sexual problems prior to their prostate cancer because of other
physical or psychological conditions. To the extent that such men have
already accommodated to these problems prior to their prostate cancer,
they would have no need to make further accommodations after their
treatment. In addition, some men might have perceived that urinary and
sexual problems are a small price to pay if their cancer was cured.

There was reasonable evidence of buffering effects. Collectively, the
findings of our moderated regressions support the conclusion that response
shifts may sustain QOL in prostate cancer patients whose urinary func-
tioning deteriorates. More generally, these findings suggest that response
shifts may be cognitive accommodations to health problems, which help
buffer individuals from the negative social–emotional consequences of
health problems. Thus, when illness challenges particular values by
thwarting relevant goals, individuals can adopt values and goals that are
more attainable in their postmorbid state. Alternatively, individuals can
alter the way they appraise their QOL, both in the present and the past,
to enhance their QOL.

Our results also have practical implications for men recovering from
prostate cancer treatments. We found that the negative influence of de-
teriorating urinary function on QOL could be buffered by changing im-
portant life goals, which we interpret to be a shift in values. Men who find
controlling urinary function to be especially challenging may find that
changing life goals helps them restore a sense of personal control in their
lives. For example, a man who is preoccupied by the thought of leaking
urine, or finds he must be cognizant of the location of the closest restroom
facilities, may believe that his pursuit of career or work-related goals is
less achievable (perhaps even less meaningful) than it was prior to treat-
ment. By altering his principal goal in life to, for instance, spending more
time with his wife, this man may be able to regain a sense of control over
his life. The goal of relationship enhancement may seem more tangible
and personally achievable despite problems with controlling urinary func-
tion. This change may help restore a patient’s sense of control, meaning,
and purpose in life, and hence serve as a means of accommodating to
deciles in physical functioning.

Furthermore, a recalibration of QOL may assist the cancer patient
who is attempting to come to terms with worsening physical conditions.
We found that among men whose urinary function worsened over time, a
positive recalibration of QOL was associated with improvements in QOL,
whereas a negative recalibration was associated with declines in QOL.
Why should a positive recalibration of QOL be helpful? It is possible that
such reappraisals of a previous state represent an adaptive cognitive bias.
This bias can be considered adaptive because it functions to preserve a
sense of emotional well-being even in the face of physical problems that
may severely restrict activities. Such positive biases are commonly ob-
served in both diseased and normal populations and appear to be some-
what protective of mental health (Taylor, 1989).

It is also possible, however, that memory itself may be biased. Specif-
ically, memory for past appraisals of QOL may in some sense be biased by
current appraisals. That is, memory for judgments of QOL in the past may
be informed and perhaps even actively reconstructed using current evaluations of QOL (Levine, 1997). In this manner, positive evaluations of the present may provide a framework that encourages the overestimation of positive aspects of the past. Consequently, a patient's view of past QOL may be colored by current perception. Those who currently rate their QOL as being high may look at the past as being comparatively better than what they previously thought it was. Conversely, negative evaluations of the present might activate a negative evaluatory schema that encourages the overestimation of negative aspects of the past. Thus, a patient who currently rates QOL as low would be more likely to reassess the past as being comparatively worse than how it was previously perceived. In our sample of men treated for prostate cancer, we found some evidence for this explanation. Mean MCS scores at T2 were higher for men who positively reappraised T1 QOL \((M = 55.6)\) versus those who negatively reappraised T1 QOL \((M = 49.1)\).

In summary, we tested two models of response shift effects on QOL in men treated for prostate cancer. We did not find empirical evidence for the hypothesis that response shifts suppress the relation between changes in physical health problems and changes in QOL. We did find some evidence that response shifts moderate (i.e., buffer) the relation between health problems and QOL in men treated for prostate cancer. Specifically, the two aspects of response shift, scale recalibration and changes in values were found to moderate the relation between negative changes in physical health (i.e., increases in urinary functioning problems) and changes in QOL. Thus, response shifts may readily be identified as processes by which cancer patients accommodate to disease-induced deterioration in their physical function in order to preserve social and emotional well-being.

References


