

# Distress, delay of gratification and preference for palliative care in men with prostate cancer

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## Abstract

**Background:** Patient-centered cancer care standards include routine psychosocial distress screening and referral for supportive care services. Although many cancer patients report psychosocial distress that could be alleviated by supportive services including palliative care, patients often decline such services for reasons that are poorly understood. Research on decision-making suggests that during periods of acute distress, individuals have more difficulty prioritizing long-term over immediate gains. Thus, distressed cancer patients may prioritize immediate gains (e.g., avoidance of palliative care discussions in the moment) over longer-term gains (e.g., improved quality of life in the future).

**Method:** This study investigated the associations between psychosocial distress, difficulties with delay of gratification (tendency to prioritize short-term over longer-term gains), and preference for palliative care in a sample of 212 men with a history of prostate cancer (94% white men and 27% advanced stage, age  $M = 62$ ,  $SD = 8$ ). It was hypothesized that psychosocial distress would be associated with lower preferences for palliative care, and this association would be explained, in part, by difficulty delaying gratification. Self-report measures included the depression anxiety stress scales, delay of gratification inventory, and ratings on an item assessing preferences for palliative care.

**Results:** Consistent with the hypothesis, mediation models confirmed that the association of psychosocial distress with lower preference for palliative care was mediated by delay of gratification.

**Conclusions:** Findings suggest that distressed prostate cancer patients may benefit from additional support managing the emotional aspects of medical decisions and weighing immediate versus delayed outcomes. Copyright © 2015 John Wiley & Sons, Ltd.

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The American Society of Clinical Oncology and Institute of Medicine have recommended that oncologists offer palliative care alongside standard medical treatment for patients diagnosed with metastatic cancers and those who have severe or multiple symptoms resulting from cancer such as depressive symptoms, anxiety, and pain [1,2]. Psychosocial distress may itself represent an important barrier to the cancer patients' uptake of supportive care services including palliative care. Psychosocial distress is a common concern and is estimated to affect over one-third of all cancer patients [3]. Cancer-related psychosocial distress varies in form, function and severity, but common presentations include anxiety and depressive symptoms. Cancer patients with untreated depression are less likely to adhere to medical recommendations, receive lower quality cancer care, and experience poorer health outcomes [4]. Although the association between depression and poorer cancer care and health outcomes is well documented, less is known about the mechanisms whereby cancer-related distress in the form of depression and anxiety may impact medical decision-making and thus translate to poorer cancer outcomes. One possibility

is that individuals experiencing acute distress find these negative emotional states to be aversive and thus are motivated to avoid engaging in any activity such as thinking about palliative care that could worsen their mood. These individuals have difficulties delaying immediate gratification.

Delay of gratification involves forgoing immediate and transient sources of comfort for more delayed and meaningful outcomes. Delay of gratification is associated with better health status [5,6] and is influenced by environmental factors and emotional states [7]. Psychosocial distress may impact decision-making styles by leading individuals to be more impulsive, focused on immediate gains, and overlook long-term consequences [8]. Individuals experiencing psychosocial distress have difficulty delaying gratification when their decision-making process prioritizes avoidance of upsetting thoughts and situations over long-term goals and values [9]. The experience of acute psychological distress and consequent difficulties with delay of gratification may have important implications for medical decision-making. For example, the acceptance of a referral to palliative care services may

require delay of gratification, as it involves tolerating some degree of immediate distress (e.g., discussing emotional response to cancer, goals of care discussions, and acknowledging mortality) but with the longer-term goal of improving quality of life.

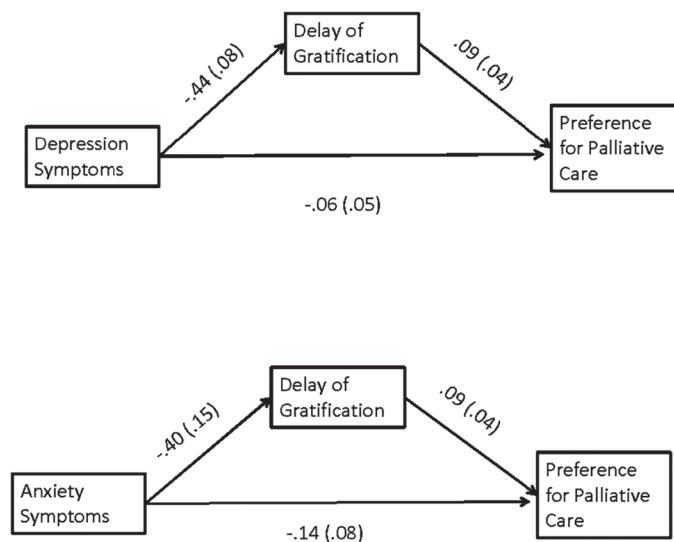
This study investigates how psychosocial distress may influence decision-making styles that may leave some cancer patients to be unfavorably disposed toward palliative care. We chose to study this issue in prostate cancer because it is the most common cancer among men, with over 2.5 million men in the USA living with prostate cancer and over 200,000 new cases diagnosed yearly [10–12]. Additionally, with the exception of advanced disease with distant metastases, prostate cancer typically has a chronic course with minimal risk of imminent death. However, the chronic course of disease is often accompanied by changes in sexual, urinary, and bowel function [13–15] that may disrupt occupational and social roles [16] and evoke significant and variable levels of distress. The primary study hypothesis was that psychosocial distress (greater depression and anxiety) would be associated with greater desire for immediate gratification, and in turn lower preference for palliative care (see Figure 1). This hypothesis was tested using a statistical mediation framework, an approach that is useful for probing whether an independent variable (i.e., symptoms of depression or anxiety) is related to a dependent variable (i.e., preference for palliative care) through a third mediator variable (i.e., greater desire for immediate gratification). Thus,

findings have implications for understanding the mechanisms underlying avoidance of palliative care.

## Method

### Participants and procedure

Participants ( $n=212$  men with prostate cancer) were identified using the National Institutes of Health research match recruitment tool [17] and solicited through e-mail to complete a cross-sectional web-based psychosocial survey as part of a grant funded research on medical decision-making at the University of Rochester James P. Wilmot Cancer Center. The average age of participants was 62 years ( $SD=8$ , range 42–84). The vast majority (85.1%) was married and identified as Caucasian (96.2%, an additional 1.9% identified as Asian, 1.4% identified as African-American, 0.9% identified as native American/native Alaskan, and 1.9% identified as other). Few (3.3%) identified as ethnic Latino. Many (69.3%) reported having a bachelor's degree and private insurance (64.6%) or medicare (31.1%). A small subset of participants (7.1%) reported significant financial strain such as difficulty paying for food, shelter, clothing, or medicine. The median time since prostate cancer diagnosis was 1.5 years (*interquartile range* = 0.7 to 3.5 years). With regard to staging, 38.7% reported localized disease, 27.4% reported metastatic disease, 18.4% reported disease in remission, and 15.6% reported unknown staging. Cancer



*Note.* The models did not include covariates (i.e. age, marital status, financial strain, cancer staging) as these variables were not significantly associated with preference for palliative care.

**Figure 1.** Path diagrams.

treatment history included radiation (29.7%), surgery (22.2%), chemotherapy (9.4%), biologic/targeted therapies (9.0%), other therapies (24.1%), and no treatment (22.2%).

## Measures

### Demographic background

Participants responded to a demographic survey including health financial strain related to (1) food and housing; (2) clothing, medicine, home repairs, and transportation; (3) dining and entertainment; and (4) vacation [18] and the other background characteristics reported previously. Financial strain scores were coded 0 (absent) or 1 (present) and summed to create a 0 to 4 scale.

### The depression anxiety stress scales anxiety and depression symptom scales [19]

The depression anxiety stress scales anxiety and depression symptom scales are seven-item scales designed to measure anxiety and depression symptoms. Participants rated the frequency of their symptoms on a scale of 0 (not at all) to 3 (most of the time). Example anxiety items were 'I felt scared without any good reason' and 'I was worried about situations in which I might panic and make fool of myself'. Example depression items were 'I felt down-hearted and blue' and 'I was unable to become enthusiastic about anything'. The anxiety symptom scale and depression symptom scale both demonstrated adequate internal consistency,  $\alpha=0.68$  and  $0.91$ , respectively. Anxiety symptom severity is interpreted as follows: 0–3 (normal), 4–5 (mild), 6–7 (moderate), 8–9 (severe), and greater than 9 (very severe). Depression symptom severity is interpreted as follows: 0–4 (normal), 5–6 (mild), 7–10 (moderate), 11–13 (severe), and greater than 13 (very severe).

### Delay of gratification inventory-10-item ([5])

The delay of gratification inventory-10-item is a validated assessment of the ability to delay gratification across multiple life domains (i.e., diet, physical health, social relationships, finances, and achievement). Example items include 'I have given up physical pleasure or comfort to reach my goals', 'I have always felt like hardwork would pay off in the end', and 'I try to consider how my actions will affect other people in the long-term'. Participants rated their agreement with each statement on a scale of 1 (strongly disagree) to 5 (strongly agree). Negative valence items are reverse scored, and scores from each item were summed to compute a total score. As such, higher scores are indicative of a strong tendency to delay gratification. The scale demonstrated adequate internal consistency in the current sample  $\alpha=0.69$ .

### Preference for palliative care [20]

Participants were asked to rate their preference for palliative care should their doctor advise them that further

anti-cancer treatment was unlikely to be helpful, using the following scale: 1 (definitely no), 2 (possibly no), 3 (unsure), 4 (possibly yes), or 5 (definitely yes).

## Analysis

All analyses were conducted in statistical package for the social sciences (SPSS) version 19. Bivariate associations between continuous variables were examined by computing Pearson correlations. Because preference for palliative care demonstrated significant skew, the variable was dichotomized (0 = definitely no, possibly no, or unsure and 1 = possibly yes or definitely yes), and its association with other study variables was examined with point biserial correlations. Bias-corrected bootstrapped mediation models using the SPSS macros developed by Preacher and Hayes [21] were used to test the indirect effect of psychosocial distress (anxiety or depression) on preference for palliative care via the impact of delay of gratification. Mediation modeling integrates statistical techniques with theoretical models to specify the mechanisms or mediators (e.g., delay of gratification) that may explain the relationship between an independent variable (e.g., depression) and a dependent variable (e.g., preference for palliative care). Although statistically similar, mediation relies on conceptual assumptions about the intermediary causal status of the mediator and is thus distinct from confounder analysis [22]. Briefly, the bootstrap test of indirect effects repeatedly and randomly samples cases within the dataset to estimate the indirect effect. If 95% of estimated effects fall above or below zero, this is considered evidence of a significant indirect effect. The bootstrapping approach offers several advantages over earlier mediation testing methods [21] including greater power and lower likelihood of type I and type II errors, and it is less prone to bias because of non-normal distributions of indirect effects [21]. The model was specified to model a dichotomous dependent variable.

## Results

Approximately 37.7% ( $n=80$ ) of the sample reported at least mild symptoms of depression. Within this group, 15.6% ( $n=30$ ) reported moderate symptoms, 3.8% ( $n=8$ ) reported severe symptoms, and 3.8% ( $n=8$ ) reported very severe depression symptoms. Approximately, 21.2% ( $n=45$ ) of the sample reported at least mild symptoms of anxiety. Within this group, 5.2% ( $n=11$ ) reported moderate symptoms, 3.8% ( $n=8$ ) reported severe symptoms, and 1.9% ( $n=4$ ) reported very severe anxiety symptoms. This sample included relatively healthy and comparatively distressed patients and thus provided ample variance for testing the associations between psychosocial distress and preference for palliative care. On average, men with a history of prostate cancer were amenable to palliative care

services ( $M=4.29$ ,  $SD=0.91$  on a 1–5 agreement scale), with 83.5% ( $n=177$ ) expressing preference for palliative care (rating of 4–5) and 16.5% ( $n=35$ ) declining or feeling unsure about palliative care (ratings of 1–3).

### Bivariate associations

Table 1 presents correlations between the study variables. As hypothesized, depression and anxiety symptoms were significantly associated with lower preference for palliative care. Also, as hypothesized, depression and anxiety symptoms were associated with lower delay of gratification, and delay of gratification was directly associated with preference for palliative care. Chi-squared analysis revealed that preferences for palliative care did not differ as a function of cancer stage  $\chi^2(3)=0.359$ ,  $p=0.949$ . Respondents with severe to very severe depression were 2.7 times more likely to be reticent regarding palliative care compared to less and non-depressed patients (i.e., 38% versus 14% reticent),  $\chi^2(1)=5.532$ ,  $p=0.019$ . Respondents with severe to very severe anxiety were 2.1 times more likely to be reticent regarding palliative care compared to less and non-anxious patients (i.e., 33% versus 15% reticent), but this difference was not statistically significant,  $\chi^2(1)=2.612$ ,  $p=0.106$ .

### Mediation modeling

The finding that patients with higher levels of depression and anxiety symptoms are less inclined toward palliative care is paradoxical as these individuals stand to benefit the most from palliative care services. One possibility is that immediate psychosocial distress may interfere with patients' abilities to consider medical decisions with more delayed outcomes. A logistic mediation model supported this hypothesis. Namely, delay of gratification was found to explain the relationship between depression and preference for palliative care (indirect effect,  $B=-0.04$ ,  $SE=0.02$ , and 95  $CI\%=-0.08$  to  $-0.01$ ). As evidence of full mediation, the direct relationship between depression and preferences for palliative care was no longer significant when including delay of gratification in the model ( $B=-0.06$ ,  $SE=0.04$ , and 95  $CI\%=-0.15$  to  $.02$ ). Delay of gratification was also found to explain the

relationship between anxiety and preference for palliative care,  $B=-0.04$ ,  $SE=0.02$ , and 95  $CI\%=-0.09$  to  $-0.01$ . As evidence of full mediation, the direct relationship between anxiety and preference for palliative care was no longer significant when including delay of gratification in the model  $B=-0.14$ ,  $SE=0.07$ , and 95  $CI\%=-0.28$  to  $0.00$ .

### Discussion

Results indicate that the majority of men with prostate cancer in this sample was amenable to palliative care. As such, most patients with prostate cancer may be amenable to a discussion of palliative care services when asked. However, one in six respondents was reticent or uncertain about receiving palliative care. As hypothesized, participants with higher levels of distress were more likely to indicate they were unsure or had no interest in palliative care even if they were told by a doctor that further anti-cancer treatment was unlikely to be helpful. Mediation analyses suggest that psychosocial distress is associated with greater difficulty delaying gratification, which was found to explain reticence or uncertainty regarding palliative care. From a public health perspective, the association between distress and preference for palliative care may aggregate to substantial impact as 2.5 million men are living with prostate cancer. It is also notable that expressed preferences for palliative care were not associated with age, financial strains, or marital status (Table 1). This study extends prior findings on the association between situational distress and delay of gratification [7,9] to the context of medical decision-making. The findings suggest that cancer patients who become overwhelmed with symptoms of acute distress (i.e., depressed mood and worry) might avoid discussions about palliative care. As such, many patients who might otherwise benefit from palliative care might avoid enrolling [23–25]. Although an established relationship with palliative medicine can be highly beneficial for preventing escalations of physical distress and assuaging psychosocial concerns [26,27] considering palliative care can evoke acute distress, and the beneficial outcomes are often delayed. Thus, individuals may prefer to avoid short-term discomforts elicited by consideration of future pains, symptoms, and stressors at the cost of preventing or reducing those pains in the future. Prior studies have shown that distressed individuals tend to receive more aggressive cancer treatment at the end of life [28,29].

### Strengths and limitations

The current findings should be interpreted within the context of the study strengths and weaknesses. Strengths include a large sample of men with prostate cancer, reliable and valid psychometric measures, and advanced statistical modeling. Limitations of the study include a

**Table 1.** Bivariate correlations between study variables

	1	2	3	4	5	6
1 Age	–	–	–	–	–	–
2 Married	–0.13	–	–	–	–	–
3 Financial strain	0.06	–0.21**	–	–	–	–
4 Anxiety	–0.07	0.00	0.18**	–	–	–
5 Depression	–.12	–.07	0.12	0.57**	–	–
6 Delay of gratification	0.10	0.03	–0.17*	–0.23**	–0.37**	–
7 Preference for palliative care	–0.01	–0.02	0.09	–0.16*	–0.15*	0.18**

\*Significant at  $p < .05$ .

\*\*Significant at  $p < .01$ .



cross-sectional design that precludes an assessment of causal effects, evaluation of prostate cancer patients only precludes generalizability of findings to other cancer populations, and a primarily Caucasian sample that limits the generalizability of results to more racially/ethnically diverse samples. In prior research, preferences for palliative care have been shown to vary in different ethnic and racial groups [24], and further research is needed in this area.

### Implications

Results of the current study have important implications in light of current and upcoming guidelines for routine psychosocial screening of cancer patients and referral to supportive care services including (but not limited to) psychosocial, social work, and palliative care services [1–3]. Prior research has documented that although many patients may endorse high levels of psychosocial distress during the cancer care trajectory including depression and anxiety, many patients decline enrollment in psychosocial treatment protocols and receive lower quality cancer care [4,27]. Similarly, the current study suggests that distressed cancer patients, who stand to benefit the most from supportive care services, may be less inclined to consider palliative care treatments. In order to provide the best

care for these patients, referring providers will need to address distress directly [30], and it may help to empower patients to pursue palliative care by acknowledging explicitly that the choice involves delayed gratification, namely, short-term discomfort versus likely long-term benefits for quality of life [5]. More research is needed to determine specific intervention strategies that can be incorporated into a patient-centered cancer care model to more effectively address difficulties with distress and delay of gratification. Problem-solving approaches and motivational interviewing may be beneficial for helping patients recognize the ways that acute distress may limit their longer-term perspectives on symptom management and guide them toward informed healthcare decisions that are consistent with their values and goals [31].

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### References

- American College of Surgeons. Cancer Program Standards 2012, version 1.2.1: ensuring patient-centered care. Available at: <https://www.facs.org/quality-programs/cancer/coc/standards>
- Institute of Medicine (IOM). Cancer Care for the Whole Patient: Meeting Psychosocial Health Needs, Adler NE, Page AEK (eds.), The National Academies Press: Washington, DC, 2008.
- Carlson LE, Bultz BD. Cancer distress screening. Needs, models, and methods. *J Psychosom Res* 2003;**55**(5):403–409.
- Kissane D. Beyond the psychotherapy and survival debate: the challenge of social disparity, depression and treatment adherence in psychosocial cancer care. *Psycho-Oncology* 2009;**18**(1):1–5.
- Hoerger M, Quirk SW, Weed NC. Development and validation of the delaying gratification inventory. *Psychol Assess* 2011;**23**(3):725–738.
- Zayas V, Mischel W, Pandey G. Mind and Brain in Delay of Gratification. In *The Neuroscience of Risky Decision Making*, Bronfenbrenner Series on the Ecology of Human Development, Reyna V, Zayas, V (Eds). American Psychological Association: Washington DC, 2014; 145–176.
- Metcalf J, Mischel W. A hot/cool-system analysis of delay of gratification: dynamics of willpower. *Psychol Rev* 1999;**106**(1):3–19.
- Weiss NH, Tull MT, Viana AG, Anestis MD, Gratz KL. Impulsive behaviors as an emotion regulation strategy: examining associations between PTSD, emotion dysregulation, and impulsive behaviors among substance dependent inpatients. *J Anxiety Disord* 2012;**26**(3):453–458.
- Gerhart JI, Heath NM, Fitzgerald C, Hoerger M. Direct and indirect associations between experiential avoidance and reduced delay of gratification. *J Contextual Behav Sci* 2013;**2**(1–2):9–14.
- Howlader N, Noone AM, Krapcho M, et al. SEER Cancer Statistics Review, 1975–2011, National Cancer Institute. Bethesda, MD, [http://seer.cancer.gov/csr/1975\\_2011/](http://seer.cancer.gov/csr/1975_2011/), based on November 2013 SEER data submission, posted to the SEER web site, April 2014
- Siegel R, Naishadham D, Jemal A. Cancer Statistics, 2013. *CA Cancer J Clin* 2013;**63**(1):11–30.
- U.S. Cancer Statistics Working Group. United States Cancer Statistics: 1999–2010 Incidence and Mortality Web-based Report. Department of Health and Human Services, Centers for Disease Control and Prevention, and National Cancer Institute: Atlanta (GA); 2013. Available at: <http://www.cdc.gov/uscs>.
- Johansson E, Steineck G, Holmberg L, et al. Long-term quality-of-life outcomes after radical prostatectomy or watchful waiting: the Scandinavian Prostate Cancer Group-4 randomised trial. *Lancet Oncol* 2011;**12**(9):891–899.
- Smith DP, King MT, Egger S, et al. Quality of life three years after diagnosis of localized prostate cancer: population based cohort. *BMJ* 2009;**339**:b4817.
- White WM, Sadetsky N, Waters WB, Carroll PR, Litwin MS. Quality of life in men with locally advanced adenocarcinoma of the prostate: an exploratory analysis using data from the CaPSURE database. *J Urol* 2008;**180**(6):2409–2413.
- Eton DT, Lepore SJ. Prostate cancer and health-related quality of life: a review of the literature. *Psycho-Oncology* 2002;**11**(4):307–326.
- Harris PA, Scott KW, Lebo L, Hassan N, Lightner C, Pulley J. Research Match: a national registry to recruit volunteers for clinical research. *Acad Med* 2012;**87**(1):66–73.
- Friedman B, Conwell Y, Delavan RL. Correlates of late-life major depression: a comparison of urban and rural primary care patients. *Am J Geriatr Psychiatry* 2007;**15**(1):28–41.
- Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the depression anxiety stress scales (DASS) and the beck depression and anxiety inventories. *Behav Res Ther* 1995;**33**(3):335–343.
- Hoerger M, Epstein RM, Winters PC, et al. Values and options in cancer care (VOICE): study design and rationale for a patient-centered communication and decision-making intervention for physicians, patients with advanced cancer, and their caregivers. *BMC Cancer* 2013;**13**:188.

21. Preacher KJ, Hayes AF. SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behav Res Methods* 2004;**36**(4):717–731.
22. Mackinnon DP, Krull JL, Lockwood CM. Equivalence of the mediation, confounding and suppression effect. *Prev Sci* 2000;**1**(4):173–181.
23. Bakitas M, Lyons KD, Hegel MT, et al. Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the project ENABLE II randomized controlled trial. *JAMA* 2009;**302**(7):741–749.
24. Garrido MM, Harrington ST, Prigerson HG. End-of-life treatment preferences: a key to reducing ethnic/racial disparities in advance care planning? *Cancer* 2014.
25. McCormack LA, Treiman K, Rupert D, et al. Measuring patient-centered communication in cancer care: a literature review and the development of a systematic approach. *Soc Sci Med* 2011;**72**(7):1085–1095.
26. Faulkner A. ABC of palliative care. Communication with patients, families, and other professionals. *BMJ* 1998;**316**(7125):130–132.
27. Neely KJ, Roxe DM. Palliative care/hospice and the withdrawal of dialysis. *J Palliat Med* 2000;**3**(1):57–67.
28. Temel JS, Mccannon J, Greer JA, et al. Aggressiveness of care in a prospective cohort of patients with advanced NSCLC. *Cancer* 2008;**113**(4):826–833.
29. Mack JW, Nilsson M, Balboni T, et al. Peace, equanimity, and acceptance in the cancer experience (PEACE): validation of a scale to assess acceptance and struggle with terminal illness. *Cancer* 2008;**112**(11):2509–2517.
30. Institute of Medicine (IOM). Delivering High-Quality Cancer Care: Charting a New Course for a System in Crisis, The National Academies Press: Washington, DC, 2013.
31. Miller WR, Rollnick S. Talking oneself into change: motivational interviewing, stages of change, and therapeutic process. *J Cognit Psychother* 2004;**18**(4):299–308.