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## Social Constraints and Cancer-Related Quality of Life in Single and Partnered Young Adult Testicular Cancer Survivors: A Contextual Approach

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### Abstract

**PURPOSE/OBJECTIVE:** To examine the context of relationship status on the link between friends/family social constraints ( $SC_{ff}$ ) and cancer-related quality-of-life (QOL) among young adult testicular cancer survivors.

**DESIGN/RESEARCH APPROACH:** Participants completed the Functional Assessment of Cancer Therapy (general version), the Social Constraints Scale (friends/family), and demographic questions.

**SAMPLE/PARTICIPANTS:** The sample included 162 young adult testicular cancer survivors.

**FINDINGS:**  $SC_{ff}$ , but not relationship status, significantly predicted QOL when controlling for age, time since diagnosis, education, and income. The  $SC_{ff}$  X relationship status interaction was significant such that  $SC_{ff}$  were more strongly related to lower QOL for single survivors than for partnered survivors.

**IMPLICATIONS:** Focusing on friends and family support of young adult survivors, findings highlight the vulnerability of single survivors to social constraints within their diffuse social network. Interventions that target supportive exchanges in friends and family networks may be useful in improving QOL in single young adult cancer survivors.

### Keywords

cancer; quality of life; relationship status; social constraints; testicular cancer; young adult

### Background

Access to supportive, warm, and emotionally-accessible interpersonal relationships is known to promote better adjustment to cancer, enhance quality of life, and improve cancer outcomes.<sup>1</sup> Young adult cancer survivors, who are more likely to be single or in newer

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romantic partnerships than older individuals, and often rely on broad friend networks and family relationships for emotional support after cancer.<sup>2,3</sup> However, it is also well established that not all interpersonal exchanges are perceived as supportive and constraints in social relationships can be a detriment to quality of life (QOL) and psychological adjustment after cancer.<sup>4,5</sup> Social constraints are “the objective social conditions and individuals’ construal of those conditions that lead individuals to refrain from or modify their disclosure of stress- and trauma-related thoughts, feelings, and concerns.”<sup>6</sup> For those affected by cancer, social constraints have included perceptions that others are disinterested or disapproving of the sharing of cancer-related worries and concerns. They are marked by perceiving that others change the subject or withdraw from cancer-related discussions, or display criticism or discomfort toward cancer-related emotional disclosure. Moreover, much of what is known regarding social constraints in the cancer context is largely from studies of spousal dyads and older adult survivors<sup>4,5</sup> calling to question the generalizability to single young adult survivors. This study takes a contextual-relational approach to examine associations of social constraints perceived from friends and family relationships with cancer-related QOL among single and partnered young adult testicular cancer survivors.

For young adult cancer survivors, life goals indicative of this transitional life stage (e.g., educational and professional pursuits, relationship and family formation) can be interrupted by a cancer diagnosis and invoke unique challenges to reaching developmental landmarks.<sup>7-9</sup> Such disruptions combined with other cancer-related stressors and individual risks for poor psychological adjustment to cancer underscore the value of a supportive interpersonal environment that facilitates coping and emotional expression.<sup>10</sup> Calling upon a Social Cognitive Processing framework,<sup>11</sup> social constraints constitute a central source of inhibited disclosure and so could threaten cancer-related QOL and thwart the receipt of adequate social support. Studies of male cancer survivors demonstrate the negative impact of social constraints on psychological distress and cancer adjustment.<sup>12-14</sup> Moreover, non-disclosure can lead to avoidance of thoughts or discussions about cancer further impeding cognitive and emotional processing of one’s cancer experience.<sup>15</sup> This can lead to negative mental and physical outcomes as observed in other cancer survivor populations.<sup>16</sup>

These types of observations support the long-held notion that the social context matters to cancer-related outcomes. It may be particularly important in the case of young adults to distinguish the specific set of social relationships in which social constraints are operating. Social constraints are commonly attributed to two source domains: family/friends or spouse/partner.<sup>6</sup> Although social constraints within the spousal context has been a strong focus, for young adults, cancer is more likely to result in increased (or a return to) family involvement or reliance on a broad network of friends in the absence of a primary romantic or spousal partner. Young adult male cancer survivors, in particular, are more likely to live with their parents compared to their counterparts in the general population.<sup>17,18</sup> Increased family reliance or a return to the familial home because of cancer can be experienced in both positive and negative ways. In fact, young adult cancer survivors have described the support received from their family as a “double-edged sword”; they are grateful for their family’s love and investment in their care but can simultaneously feel suffocated and overprotected by their families.

Experiences with peers and friends are also varied. Feelings of isolation and alienation from peers without cancer have been described by young adult survivors.<sup>9</sup> On the other hand, social engagement with healthy peers can invoke feelings of normalcy and, in some cases, aid in distinguishing meaningful friendships from less significant relationships.<sup>2</sup> Newly found sources of support may also be discovered in communities or environments of other young adult survivors.<sup>2,19</sup> Even among young adult survivors who are married or in long-term relationships, the majority identify family (particularly parents) and friends as primary sources of support.<sup>2,3,20</sup> Such observations underscore the critical role of non-partner/non-spousal relationships in cancer-related support.

Taking into consideration the interpersonal relationship patterns of young adult cancer survivors, the present study examines the relationship between social constraints and cancer-related QOL. The focus is on the potential impact of relational context between married/partnered and single young adults. Predicated on the notion that single survivors primarily rely on friends and family for social support in the absence of a primary partner, we hypothesize that relationship status moderates the association between social constraints and cancer-related QOL such that social constraints within friends and family relationships will be more strongly associated with lower cancer-related QOL for single survivors than for those that are partnered.

## Methods

### Procedures

This study is a secondary analysis of data from a sample described by Hoyt and colleagues.<sup>21</sup> Eligible individuals were identified through the California Cancer Registry and were invited to participate in a study examining health-related quality of life in young adults after testicular cancer. Eligible individuals were men between the ages of 18 and 29, with a history of testicular cancer, and the ability to read and understand English. Men with severe psychiatric disorder or cognitive impairment were excluded. Following informed consent procedures, participants completed questionnaires via mail or in person and were given \$50 for their participation. Study procedures were reviewed and approved by the human subjects' protection boards at the author's institution and the State of California Committee for the Protection of Human Subjects (CPHS approval number: 12-05-0271).

### Participants

As described elsewhere,<sup>21</sup> 171 men between the ages of 18 and 29 were recruited. Nine participants were excluded from analysis due to incomplete data. This resulted in an analytic sample of 162 men. Participants had a mean age of 25.3 ( $SD = 3.3$ ) and the preponderance of the sample identified as either White (45.7%) or Hispanic/Latino (34.0%). In total, 68.5% of the sample reported that they were single and not living with a romantic partner. The majority did not have children (81.5%) and did not live alone (94.4%), and 42.6% were employed full-time.

On average, it had been 32.4 months ( $SD = 19.5$ ) since participants' diagnosis and 30.1 months ( $SD = 14.4$ ) since completion of primary medical treatment. The majority of

participants underwent radical inguinal orchiectomy (73%) and chemotherapy (53%). A portion also received retroperitoneal lymph node dissection (24%) and/or radiation therapy (15%). A small portion of men underwent bilateral orchiectomy (7%). None were on active treatment at the time of participation.

## Measures

**Social constraints.**—Constraints in friend and family relationships was measured by the Social Constraints Scale (SCS).<sup>22</sup> The SCS is a 15-item measure of the extent one perceives social responses that hinder the expression of cancer-related thoughts and feelings (e.g., “How often have your friends and family (other than your spouse/partner) changed the subject when you tried to discuss your illness?”). Negative experiences include changing the conversation subject, avoidance, hiding feelings, and dismissal of concerns.

Responses were given on a 4-point response scale (1 = *never* to 4 = *often*). SCS scores were calculated by summing item responses where a higher SCS score indicates more frequent experiences of social constraints. Cronbach’s alpha was 0.76.

**Cancer-related quality of life.**—The Functional Assessment of Cancer Therapy – General (FACT-G) was administered to assess cancer-related QOL.<sup>23</sup> The FACT-G is a 28-item measure of overall QOL and asks participants to indicate how true each statement has been for them over the past seven days using a 5-item Likert scale (1 = *not at all* to 5 = *very much*). The FACT-G consists of four domains including physical, social/family, emotional, and functional well-being. A total score is computed by summing items across domains. A higher FACT-G total score indicates better overall QOL. Cronbach’s alpha was .59.

**Sociodemographic and cancer information.**—Demographic and clinical information was self-reported and/or extracted from the cancer registry. Demographics included age, ethnicity, education, income, employment status, household composition, and relationship status. Response options for relationship status included single, committed/partnered, married, or divorced.

## Data Analysis Plan

Descriptive statistics were computed using SPSS statistical software (version 27; SPSS, Chicago, IL, USA) for key study variables. These included examination of social, demographic, and clinical characteristics. Bivariate correlations between these variables and QOL were conducted. Participant age, income, education level, ethnic minority status and time since cancer diagnosis were identified as possible statistical covariates and included in models testing primary study hypotheses.

Multiple linear regression utilizing Model 1 of the PROCESS SPSS macro was used to test study hypotheses.<sup>24</sup> Multilevel regressions were organized in three levels in which the statistical covariates were entered in the first level, relationship status and friends/family social constraints in the second level, and the interaction term (friends/family social constraints x relationship status) in the final level. Continuous variables defining products

were centered around the mean. Regression analyses and probing of significant interactions were conducted in accordance with procedures and principles outlined by Aiken and West.<sup>25</sup>

## Results

### Descriptive Statistics

Sociodemographic characteristics are summarized in Table 1. Chi-square and unpaired *t*-tests were utilized to examine group differences between single and partnered participants. On average, single and partnered individuals reported similar levels of friends/family social constraints [ $t(160) = .83, p = .41$ ]. Similarly, there was no significant difference in reported cancer-related QOL among partnered individuals and single survivors [ $t(154) = -1.51, p = .13$ ]. Bivariate correlations are reported in Table 2 and indicated education and income were significantly associated with QOL.

### Regression Analyses

Regression analyses are displayed in Table 3. Higher levels of friends/family social constraints ( $\beta = -.60, p < .001$ ) were significantly related to lower cancer-related QOL when controlling for the identified covariates. Conversely, no significant relationships were identified between relationship status ( $\beta = -.27, p = .13$ ) and cancer-related QOL.

As predicted, the friends/family social constraints x relationship status interaction term was significant ( $\beta = .44, p = .02$ ) and explained an additional 2.4% of the variance in cancer-related QOL. Simple slopes analyses showed that friends/family social constraints were more strongly related to lower cancer-related QOL for single individuals ( $b = -.05, p < .001$ ) than for partnered survivors ( $b = -.02, p = .01$ ). These relationships are depicted in Figure 1.

## Discussion

With the preponderance of the existing literature focusing on spousal-related social constraints, our study addresses the gap in the understanding of social constraints for young adult survivors reliant on a network of friends and family for cancer-related support. The findings highlight how relationship context matters to the association between social constraints and cancer-related QOL in young adult survivors.

Familial relationships and friendships have a central role in cancer-related disclosure in young adulthood. As shown, friends and family constraints are more strongly related to cancer-related QOL for single survivors compared to partnered survivors. In this case, relationship status may either support or hinder young adult survivors' ability to navigate the impact of social constraints. The interpersonal context around relationship status should be considered. When partnered individuals experience constraints with their partner/spouse, they encounter barriers to disclosure at arguably their primary source of support, thus thwarting their efforts to cope and deal with their cancer-related thoughts and concerns. However, the availability of additional support from friends and family may serve as a safety net or additional set of interpersonal sources that provide opportunities for disclosure. Such

a two-tiered support system might help to explain main effect differences in cancer-related QOL.

Although single survivors may experience similar barriers to disclosure, their primary dependence on a vast network of friends and family might constitute both challenges and opportunities. On the one hand, it might require reliance and trust across a variety of contexts, relationship types, and physical environments. Moreover, young adult survivors report more conflict in familial relationships than other relationship types, interactions with friends are more strongly correlated with distress than other relationships, are reluctant to disclose their diagnosis in professional relationships, and they underuse services designed to promote social connection with peers.<sup>19,26,27</sup> On the other hand, according to the Social Cognitive Processing perspective, access to a large support network could provide ample opportunities for disclosure.<sup>28</sup>

The potential influence of social norms on the experience of social constraints particularly among young adult men is also noteworthy. Socially constructed ideals of masculinity dictates that men are expected to be self-reliant and suppress expressions of emotion.<sup>29,30</sup> Young adult men may be reluctant to appear vulnerable or emotionally-expressive after the acute treatment phase and so might subscribe more strongly to these traditional gender norms. As such, cancer-related disclosure may prove challenging and unfeasible when compounded with the experience of social constraints on the rare occasions they choose to disclose.<sup>31</sup> Moreover, young adult peers of survivors describe withdrawing effort toward providing support because they don't know how to give it.<sup>32</sup> Thus, similar gender role norms might prevent peers from participating or initiative support exchanges in an effort toward protective buffering or preservation of their own masculine self-image.

### Study Limitations

A number of study limitations must be considered in the interpretation of our findings. First, our study utilized a sample of young adult testicular cancer survivors and our results require replication in other groups to be generalized across other survivor groups. Further, the Social Cognitive Processing Model suggests the influence of social constraints vary within-person over time.<sup>6,15</sup> The present study relied on cross-sectional data and so insight into temporal or longitudinal relationships is limited. Our study utilized a well-established measure of social constraints that groups family and friend relationships; however, in future studies it may be valuable to examine social constraints experienced with family separately from that experienced with friends or to focus on specific relationship types (e.g., a “best” friend). Specific to the context of emerging adulthood, friend and familial relationships likely hold different functions and young cancer survivors likely maintain different sets of expectations and support needs from these relationships. Expectations of support from a family member may differ from expectations of support from friends, colleagues, or other peers.

We also note that young adulthood is a life-stage in which relationships are frequently in flux.<sup>9</sup> Such instability could not be well captured in the current study design. For instance, twenty-nine participants indicated they were in a relationship but did not live with their partner. The stability of these relationships is undeterminable and these individuals were coded as single. Notably, the majority of these cases (n=22) were currently living with their

parents. Future studies will benefit from more nuanced measurement of length and quality of relationships to better understand avenues of disclosure with partners and friends/family.

### **Clinical Implications**

Our focus on social constraints sheds light on the value of an interpersonal environment that is open to cancer-related emotional expression and free of perceptions of discomfort or criticism when survivors share their experiences. Yet few interventions have been designed to focus on friendships or social networks. In fact, in our own research,<sup>13</sup> young adults describe wanting additional or different types of support from their friends or roommates and so over-rely on humor to address cancer-related topics with peers. Training to help family and peers provide adequate support and for young adults to request needed support might prove useful in mitigating the impact of social constraints.

Relationship status may also help prioritize which members of the patient's network should be included in post-cancer supportive care. As such, clinicians can strategically position members of the survivors' social network to succeed in providing the support patients need. With the full understanding of a patient's relationship context, clinicians can encourage open communication between the patient and their support network to prevent experiences of social constraints and further strengthen the benefits of a supportive network.

Research in psychosocial oncology should be more inclusive in the focus on single young adult survivors. Reliance on the belief that a romantic partner relationship is the most influential to adjustment for the totality of cancer survivors has negative clinical consequences for this group.

Support communication with a partner, particularly when in the same household, are more likely face-to-face exchanges whereas interactions with friends and family may often occur via phone calls, text messages, or other electronic media. Recent work suggests communication mode moderates the relationship between disclosure and well-being such that those engaging in technology-related communication demonstrated greater benefit compared to those engaged in face to face conversation.<sup>33</sup> Approaches that are able to capitalize on the use of technology-based interventions that reinforce the benefits of talking to disclosing thoughts, information, and feelings may prove beneficial.

### **Conclusions**

While the influence of partner/spouse social constraints on cancer survivors' adjustment is well-established, little attention has been afforded to other sources of social constraints. Our study highlights the possibility that single survivors might be particularly vulnerable to the detrimental influence of social constraints, specifically those experienced among friends and family. While further investigation is needed, the results of this study indicate the potential of improving quality of social support provided to young adult cancer survivors in the context of their closest relationships.



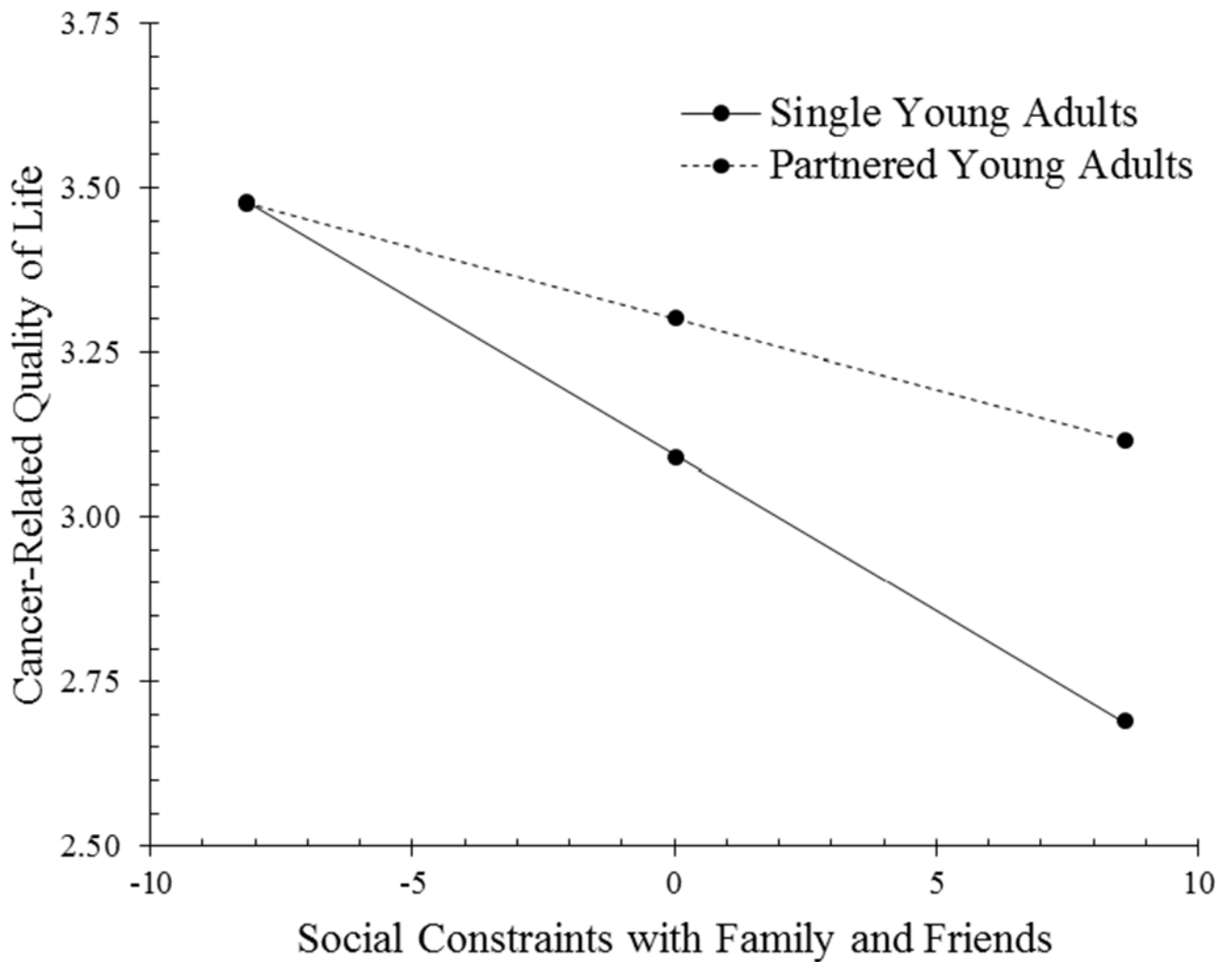
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**Figure 1.**  
Interaction of Social Constraints and Relationship Status  
Figure displays interaction effect for cancer-related quality of life. Analyses controlled for age, time since diagnosis, education, and income.

**Table 1.**

## Demographic Characteristics

Variable	Single (n = 111) n (%)	Partnered (n = 51) n (%)	Test Statistic <i>t</i> or $\chi^2$	Significance <i>p</i>
Age [M ( <i>SD</i> )]	24.4 (3.4)	27.1 (2.3)	-5.97	<.001
Race/Ethnicity			8.81	.18
Non-Hispanic White	43 (38.7)	31 (60.8)		
Hispanic/Latino	40 (36.0)	15 (29.4)		
African American	1 (0.9)	0 (0)		
Asian	8 (7.2)	1 (2.0)		
Native American/Alaskan	1 (0.9)	0 (0)		
Other/mixed	18 (16.2)	4 (7.8)		
Education			6.03	.42
Grade school/Some high school	3 (2.7)	3 (5.9)		
High school/GED	20 (18.0)	5 (9.8)		
Some college/post-HS training	37 (33.3)	16 (31.4)		
2-year college degree	12 (10.8)	5 (9.8)		
4-year college degree	26 (23.4)	10 (19.6)		
Graduate degree/post-bacc training	13 (11.7)	12 (23.5)		
Annual Income			7.65	.27
\$15,000	28 (25.2)	8 (15.7)		
\$15,001-\$45,000	36 (32.4)	17 (33.3)		
\$45,001-\$75,000	25 (22.5)	19 (37.3)		
\$75,001-\$100,000	13 (11.7)	3 (5.9)		
\$100,000	9 (8.1)	4 (7.8)		
Employment Status			15.95	.01
Full-time employment	37 (33.3)	32 (62.7)		
Part-time employment	31 (27.9)	5 (9.8)		
Student	15 (13.5)	4 (7.8)		
Medical leave/disability	5 (4.5)	4 (7.9)		
Unemployed	23 (20.7)	6 (11.8)		
Living Situation			209.39	<.001
Living alone	9 (8.1)	0		
With spouse/partner	0 (0)	51 (100)		
With parents	71 (64.0)	8 (17.8)		
With other relatives	22 (19.8)	4 (8.9)		
With roommate(s)	25 (22.5)	3 (6.7)		
Other	2 (1.8)	1 (2.2)		
Relationship Status			82.89	<.001
Married/Remarried	0	26 (51.0)		
Divorced/Legally Separated	1 (0.9)	0		
Committed Relationship	29 (26.1) <sup>†</sup>	19 (37.3)		

Variable	Single (n = 111)	Partnered (n = 51)	Test Statistic <i>t</i> or $\chi^2$	Significance <i>p</i>
	<i>n</i> (%)	<i>n</i> (%)		
Single, never married	81 (73.0) <sup>§</sup>	6 (11.8)		
Months since diagnosis [M ( <i>SD</i> )]	33.7 (21.9)	29.4 (12.8)	1.32	.19
Social Constraints (friends/family)	23.6 (8.2)	22.4 (9.3)	0.83	.41
Cancer-Related Quality of Life	3.1 (0.7)	3.3 (0.6)	-1.51	.13

*Note.* Some totals do not add to 100% due to rounding and multiple response

<sup>†</sup> Respondents in a relationship but not living with partner were coded as single

<sup>§</sup> Individuals reporting single, never married status but live with a partner were coded as partnered

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**Table 2.**

Bivariate Correlations

	1	2	3	4	5	6	7	8
1. Cancer-related QOL	-							
2. Time Since Diagnosis (Months)	.02	-						
3. Friends/Family SC	-.54***	.04	-					
4. Relationship Status	.12	-.10	-.07	-				
5. Age	-.03	-.02	-.07	.38**	-			
6. Race/Ethnicity	-.01	.04	.09	-.19*	-.18*	-		
7. Education	.30***	-.07	-.24**	.11	.31***	-.07	-	
8. Income	.28***	-.02	-.23**	.04	-.05	.06	.38***	-
9. Ethnic Minority	-.09	-.01	.08	-.21**	-.24**	.64**	-.22**	-.04

Note. QOL = Quality of Life; SC = Social Constraints

\*  $p < .05$ ,

\*\*

$p < .01$

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

**Table 3.**

Cancer-related quality of life regressed on friends/family social constraints and relationship status

Variable	$R^2$	B	SE	$\beta$	$p$
Block 1	.13**				
Time Since Diagnosis		.002	.002	.06	.34
Ethnic Minority <sup>†</sup>		-.01	.09	-.017	.93
Education		.08	.03	.19	.01
Income		.03	.03	.09	.21
Age		-.04	.02	-.17	.02
Block 2	.23**				
SC – FF		-.05	.01	-.60	<.001
Relationship Status <sup>§</sup>		-.39	.26	-.27	.13
Block 3	.02*				
SC- FF x Relationship Status		.03	.01	.44	.02
$F(8, 153) = 11.89, R^2 = .38, p < .001$					

Note. Regression coefficients reflect values at the end of block 3, with all variables entered into the model

<sup>†</sup>0 = Ethnic Minority, 1 = Non-ethnic Minority

<sup>§</sup>0 = Single, 1 = Partnered

QOL = Quality of Life; SC-FF = Social Constraints – Friends/Family