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Health-Seeking Behaviors and Sexuality in Rectal Cancer Survivors in Taiwan: Associations With Spirituality and Resourcefulness

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Rectal cancer survival in Taiwan has greatly increased from a 51% five-year survival rate in 1997 to a 56% in 2011 (Taiwan Department of Health, 2011) because of screening and early detection, as well as innovation in treatment. However, adverse effects on sexuality for rectal cancer survivors remain an important issue (Au, Zauszniewski, & King, 2011). Living with a chronic illness and experiencing sexual dysfunction can produce overwhelming stress and further compromise an individual's physical and psychological health and well-being. Literature has shown that patients with cancer are more likely to abandon sexual activity than their healthy partners because they are emotionally and psychologically unprepared (Andersen & van der Does, 1994). For patients with cancer, sexuality may have special significance of life and vitality, and experiencing cancer and its treatment may cause them to reassess their meaning of living (Rice, 2000).

Spirituality is perceived as an important dimension in helping people reach their sexual potential (Helminiak, 1998), and resourcefulness is a learned collection of cognitive-behavioral skills that are important to assist individuals in coping with stressful situations, which may have an impact on their well-being (Zauszniewski, 2006). Spirituality and resourcefulness can be defined as an individual's health-seeking behaviors (HSBs) for coping with stressful situations. Little is known about the effect of HSBs, such as spirituality and resourcefulness, and sexuality on patients with rectal cancer undergoing treatment. The goal of this analysis was to examine the relationships between those two HSBs and indicators of sexuality in this patient group (see Figure 1).

Background

Rectal cancer survivors' sexuality often is overlooked or neglected in terms of quality of life (Au, Zauszniewski, Daly, Gary, & Deimling, 2010). Prior research in

Purpose/Objectives: To examine the relationships between two health-seeking behaviors (HSBs), spirituality and resourcefulness, as well as demographics, cancer-related factors, and sexuality indicators, within the context of Schlotfeldt's health-seeking model in rectal cancer survivors.

Design: Secondary analysis, correlational, and cross-sectional.

Setting: A teaching hospital in southern Taiwan.

Sample: 120 adults with rectal cancer.

Methods: Data were collected during face-to-face interviews using the Body-Mind-Spirit Well-Being Inventory–Spirituality scale; Resourcefulness Scale; Sexual Self-Schema Scale (male and female versions); Evaluating and Nurturing Relationship Issues, Communication, Happiness (ENRICH) Couple Scale–Communication; ENRICH Sexual Relationship Scale; International Index of Erectile Function; and the Female Sexual Function Index. Correlational analysis, one-way analyses of variance, and independent sample t tests were used to analyze data.

Main Research Variables: Spirituality, resourcefulness, HSBs, and sexuality.

Findings: Spirituality and resourcefulness were associated with sexual self-concept and sexual satisfaction in men and women. Spirituality was correlated with resourcefulness. Greater resourcefulness was found in women, as well as in men and women who had higher education and fewer comorbid conditions. Spirituality was not associated with gender, education, or number of comorbid conditions. Neither spirituality nor resourcefulness was associated with age, religion, stage of disease, time since surgery, type of cancer treatment, or sexual function.

Conclusions: Resourcefulness and spirituality were associated with the sexuality indicators of satisfaction and self-concept, which may have an impact on the physical and psychological health of adults with rectal cancer.

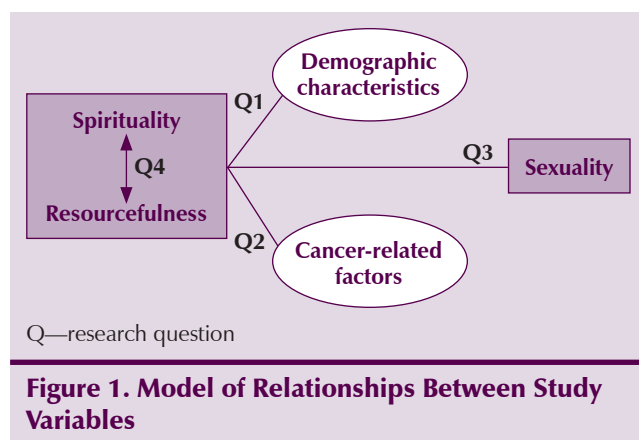
Implications for Nursing: The findings suggest a need to focus on strengthening HSBs through teaching resourcefulness and encouraging spirituality to enhance sexual self-concept and improve sexual satisfaction in this patient group.

patients with colorectal or rectal cancer worldwide has focused mainly on incidence and physiologic problems rather than on a holistic perspective of survivors' sexuality (Hendren et al., 2005; Mou, 2002). Sexuality is an integral part of the multidimensional perspective, which encompasses not only physiologic but also psychosocial aspects. Other factors, including myths concerning cancer and sexuality in Chinese culture (Khoo, 2009; Mou, 2002), lack of knowledge and general discomfort in addressing sexuality (Ho & Fernández, 2006; Magnan & Reynolds, 2006), and inconsistent assessment of sexual function for patients with rectal cancer (Bloemen, Visschers, Truin, Beets, & Konsten, 2009; Davies et al., 2008; Hendren et al., 2005; Schmidt, Bestmann, Kuchler, Longo, & Kremer, 2005) may contribute to general ignorance and misconceptions about this population (Au et al., 2011).

According to Schlotfeldt's health-seeking model (Schlotfeldt, 1975), the individual is viewed in terms of health assets, which are composed of HSBs acquired to pursue the attainment of the goal of health. Spirituality and resourcefulness may be conceptualized as HSBs that are acquired and developed over time (Glazer & Pressler, 1989). The health outcome addressed in this analysis was the attainment of sexual health in terms of sexuality in the study sample.

The importance of spirituality or religious faith has been recognized in Western and Eastern cultures as an intrinsic resource for coping with life-threatening and chronic illness (Chiu, 2001; McCormick, Holder, Wetsel, & Cawthon, 2001). Spirituality and religious faith have been considered coping strategies in dealing with the emotional impact for adults with various types of cancer, including colorectal cancer (Clay, Talley, & Young, 2010; Laubmeier, Zakowski, & Bair, 2004).

Evidence has shown that demographic characteristics such as age, gender, and years of education are predictors of spirituality in patients with advanced cancer (Clay et al., 2010; Mystakidou et al., 2008). Spiritual faith has influenced psychological adjustment in male African Americans who received an early diagnosis of cancer (Maliski, Connor, Williams, & Litwin, 2010), as well as terminally ill patients with cancer (both genders and various races) (Mystakidou et al., 2008). Cancer treatment such as radiotherapy in patients with advanced cancer has been associated with spirituality (Mystakidou et al., 2008). No research studies have examined the relationship of spirituality with time since surgery for patients with rectal cancer; in fact, the phenomenon of spirituality has not, to date, been studied specifically in a rectal cancer population. Among these studies, the concepts of religious faith and spirituality have been used interchangeably, which may cause confusion in differentiating between them. Therefore, religious faith and spirituality were consid-



ered separately in this study. Spirituality was defined as a manifestation of power or strength of life through an individual's harmonious relationships and a sense of the meaning or purpose of life or suffering developed through connections with self, others, environment, nature, or a higher being that enables people to go beyond themselves and to live life fully (Dossey & Guzzetta, 2000; Emblen, 1992; Reed, 1992). Religious faith, on the other hand, is a belief in the doctrines of religion.

The role of resourcefulness in coping with stressful situations has been examined in Western and Eastern cultures for chronically ill adults (Zauszniewski, 2006) and patients with cancer (Huang et al., 2010). Gender and educational differences have been reported on the measure of resourcefulness in African American women with chronic illness (Zauszniewski, Picot, Roberts, Debanne, & Wykle, 2005). Resourcefulness has been associated with a number of complications in patients with chronic illnesses (Huang et al., 2007). Research also has shown that resourcefulness (personal and social), and personal resourcefulness (e.g., self-help) in particular, plays an important role in improving physical and psychological health, life satisfaction, and quality of life among healthy older adults (Zauszniewski, 1996) and adults with chronic illness (Huang et al., 2007; Zauszniewski, Chung, & Krafcik, 2001). No research, to date, has specifically addressed the role of resourcefulness in patients with cancer.

Sexuality is an essential component of an individual's health and life (Ho & Fernández, 2006; World Health Organization, 2000) that includes not only physiologic aspects, but psychosocial aspects as well (Woods, 1987). Studies have supported the association between spirituality and sexuality—specifically related to sexual thoughts, feelings, and behaviors—in healthy people and patients with cancer when the terms *spirituality* and *religious faith* were used interchangeably (McIlmurray et al., 2003; Molassiotis, Chan, Yam, & Chan, 2000). In the present study, sexuality was defined as the state of an individual's attitudes and behaviors, comprised of

roles, intimate relationships, communication, values, beliefs, culture, physical functions, and self-concept, and presented through sexuality indicators (e.g., sexual function, sexual self-concept, sexual satisfaction) (Bulter & Lewis, 1993; Woods, 1987). No known studies have reported the associations between sexuality and HSBs such as spirituality and resourcefulness in patients with rectal cancer in Western or Eastern cultures. The current analysis investigated associations between spirituality and resourcefulness and demographic characteristics, cancer-related factors, and sexuality indicators (e.g., sexual function, sexual self-concept, sexual satisfaction) in rectal cancer survivors undergoing treatment in Taiwan.

Using Schlotfeldt's health-seeking model as the guiding framework for this analysis, the following research questions were addressed.

- What are the relationships between the HSBs and demographic variables (e.g., age, gender, education, religion) in patients with rectal cancer?
- What are the relationships between the HSBs and cancer-related factors (e.g., stage of disease, type of treatment, time since surgery, comorbid conditions) in patients with rectal cancer?
- What are the relationships between the HSBs and indicators of sexuality (e.g., self-concept, satisfaction, function) in patients with rectal cancer?
- What is the relationship between the two HSBs in patients with rectal cancer?

Methods

Design and Sample

This is a secondary analysis using a cross-sectional design. Recruitment of a convenience sample of 159 patients with rectal cancer took place in a 1,500-bed hospital located in an urban area of southern Taiwan through referrals from the hospital's physicians from July 2008 through January 2009. Eligible participants were aged 20 years or older (legal age of adulthood in Taiwan), sexually active, classified as Dukes A–C (i.e., tumor-node-metastasis [TNM] system stage I–III), had either an abdominoperineal resection or lower anterior resection, may have been receiving adjuvant treatment, and were receiving regular follow-up. Participants reported that they did not have other cancers or sexual dysfunction during a face-to-face interview. After screening potential participants according to the criteria, 120 (76% of those recruited) participated in the study. That sample size was considered to be adequate for examining associations between HSBs and demographic characteristics, cancer-related factors, and sexuality indicators with a power of 0.8 at alpha 0.05, with a medium to large effect size of 0.4. The present study was part of a parent study approved by the institutional review boards of Kaohsiung Veterans

General Hospital in Taiwan and Case Western Reserve University in Cleveland, OH. After obtaining written informed consent, the participants were interviewed individually by a trained research assistant.

Of the 120 Taiwanese adult patients with rectal cancer who participated in the study, 32 were women and 88 were men, and 96% were married. Participant ages ranged from 29–85 years, with a mean of 60.81 years (SD = 9.98, median = 59 years). About 61% of participants completed high school or more. Ninety percent reported religious beliefs. Cancer-related variables were collected from medical charts. About 63% of study participants had been diagnosed with rectal cancer within one to three years; about 60% were in the Dukes A or B cancer stage (TNM system stage I or II), and 52% of them were treated with surgery only. Fifty-two percent reported having no comorbid conditions. Only 9% of participants used medicine or other substances (e.g., lubricant, erectile dysfunction drugs) to enhance sexual activity (Au et al., 2011). Sexual dysfunction was an exclusion criterion.

Measures

Six instruments (see Table 1) that were used to measure the variables of interest in this analysis were translated into Chinese for the parent study (Au et al., 2010) and tested in a small pilot group of five patients with rectal cancer to ensure that people representative of the target population comprehended the meaning and content of the items.

Resourcefulness was defined as a repertoire of the individual's learned behavioral skills, which include personal and social resourcefulness for coping with stressful events such as cancer and its treatment (Rosenbaum, 1990; Zauszniewski, 2006). Resourcefulness was measured with the 28-item **Resourcefulness Scale (RS)**, which included personal (e.g., self-help) and social (e.g., help-seeking) resourcefulness. The items were scored on a six-point Likert-type scale, with responses ranging from 0 (not at all like me) to 5 (very much like me). The RS yields a total score from 0–140, with higher scores reflecting greater resourcefulness. The Cronbach alpha for the Chinese version of the RS in this analysis was 0.88. Construct validity was demonstrated previously by factor analysis (Zauszniewski, Lai, & Tithip-hontumrong, 2006).

Spirituality was measured using the 13-item **Body-Mind-Spirit Well-Being Inventory–Spirituality (BMSWBI-Spirituality)** scale to assess a person's core values, philosophy, and meaning of life (Ng, Yau, Chan, Chan, & Ho, 2005). The instrument was tested in Hong Kong, and the concurrent validity was established by correlations with other theoretically related measures. Items are scored on a 11-point Likert-type scale with responses ranging from 0 (totally disagree) to 10 (totally agree). Scores range from 0–130, with higher total scores

indicating better spiritual health. The Cronbach alpha coefficient in the current analysis was 0.83.

Sexual self-concept was defined as a cognitive view about oneself to reflect sexual well-being (Andersen & Cyranowski, 1994). Men's sexual self-concept was evaluated by the 45-item **Sexual Self-Schema Scale–Male version (SSSS-M)** (Andersen, Cyranowski, & Espindle, 1999) to assess the positive versus negative valence of a man's self-image as a sexual person. The SSSS-M is comprised of three factors: passionate/loving, powerful/aggressive, and open-minded/liberal (Andersen & Cyranowski, 1994). Possible scores range from 72–143, with higher scores indicating greater self-image as a sexual person. The Cronbach alpha for the SSSS-M in this analysis was 0.69. Discriminant validity was shown with measures of potentially relevant personality domains, including self-esteem, extraversion, and neuroticism (Andersen et al., 1999).

Women's sexual self-concept was measured using the 50-item **Sexual Self-Schema Scale–Female version (SSSS-F)** (Anderson & Cyranowski, 1994) to assess the woman's tendency toward three factors: passionate/romantic, directness/openness, and embarrassment/conservatism. The possible scores ranged from –42 to 102, with higher scores indicating more positive representation. The Cronbach alpha for the total SSSS-F scale was 0.72 in this analysis. Discriminant validity was found with personality measures using the Rosenberg Self-Esteem Scale (Rosenberg, 1965) and the Big Five Measure (Goldberg, 1992).

Sexual satisfaction was defined as the extent of one's subjective perception, feelings and attitudes about sexual behaviors, intimate relationships, and role functions, as well as communication with one's partner (Moret, Glaser, Page, & Barger, 1998; Woods, 1987). Communication between partners was assessed with a 10-item **Evaluating and Nurturing Relationship Issues, Communication, Happiness (ENRICH) Couple Scale–Communication**. Items focus on the level of comfort felt by the participant in sharing and receiving emotional and cognitive information (Fowers & Olson, 1989). The Cronbach alpha was 0.86 in this analysis.

Sexual relationship was measured using the 10-item **ENRICH Sexual Relationship Scale (ENRICH-SRS)** to examine the participant's feelings related to his or her affection and sexual relationship (Fowers & Olson, 1989). The Cronbach alpha coefficient for the ENRICH-SRS was 0.81 in this analysis. Discriminant validity was established by distinguishing the satisfied couples from

Table 1. Mean, Median, and Range of Scores for Study Instruments

Instrument Measure	n	\bar{X}	SD	Median	Possible Range	Actual Range
Spirituality	120	85.56	12.64	89	0–130	51–100
Resourcefulness	120	97.51	20.73	97.5	0–140	39–138
Sexual function						
Male	88	46.03	22.25	57.5	5–75	5–72
Female	32	18.99	10.42	23.35	2–36	2–32.3
Sexual self-concept						
Male	88	102.48	13.65	101.5	18–144	72–143
Female	32	54.34	12.86	54.5	–42–102	31–77
Communication	120	35.37	8.24	36	10–50	11–48
Sexual relationship	120	38.29	7.09	38	10–50	24–50

N = 120

the dissatisfied couples, with 85%–95% of considerable accuracy (Fowers & Olson, 1989) using either individual scores or couples' scores.

Two instruments, the **International Index of Erectile Function (IIEF)** (Rosen et al., 1997) and the **Female Sexual Function Index (FSFI)** (Rosen et al., 2000), were applied to evaluate sexual function by sex. Both measurements have good internal reliability and established discriminant validity for men and women (Rosen et al., 1997). In this analysis, the Cronbach alpha for the IIEF and FSFI were 0.82 and 0.93, respectively (Au et al., 2011).

Data analyses were conducted using SPSS®, version 19.0. Pearson's product moment correlations, Spearman's rho correlation, one-way analyses of variance, and the independent samples t test were used to detect the associations between the HSBs of spirituality and resourcefulness, intervening factors (e.g., demographic and cancer-related), and indicators of sexuality (e.g., function, self-concept, satisfaction).

Results

Age was not correlated with spirituality or resourcefulness. Gender differences for resourcefulness ($t_{1,118} = 2.87$, $p = 0.005$) were noted, with women ($\bar{X} = 106.25$, $SD = 18.61$) having greater resourcefulness than men ($\bar{X} = 94.33$, $SD = 20.64$). No differences by gender or educational level ($F_{4,115} = 1.47$, $p = 0.22$) were found on measures of spirituality. A significant difference by educational level was found on resourcefulness ($F_{4,115} = 5.36$, $p = 0.001$). The findings indicated that highly educated patients with rectal cancer reported greater resourcefulness. No significant differences existed by religion on spirituality or resourcefulness.

No significant correlations were found between stage of disease and spirituality ($\rho = 0.07$, $p = 0.47$) or resourcefulness ($\rho = 0.09$, $p = 0.34$). No significant correlations existed between cancer treatment or time since surgery and spirituality or resourcefulness. Number of

comorbid conditions was negatively correlated with resourcefulness ($r = -0.19, p = 0.04$), indicating that study participants who had a greater number of comorbid conditions had lower resourcefulness. No significant correlations were found between the number of comorbid conditions and spirituality in men or women.

The findings indicated that spirituality was positively and significantly correlated with better communication ($r = 0.47, p < 0.001$), sexual relationship ($r = 0.48, p < 0.001$), male sexual self-concept ($r = 0.44, p = 0.000$), and female sexual self-concept ($r = 0.47, p = 0.007$), indicating that both men and women with a lower sexual self-concept, less communication, and a less satisfactory sexual relationship had low spirituality. Spirituality was not related to sexual function in men or women (see Table 2). Resourcefulness was significantly and positively associated with better communication ($r = 0.22, p = 0.017$), more satisfying sexual relationship ($r = 0.43, p = 0.001$), and more positive sexual self-concept in men ($r = 0.36, p = 0.001$) and women ($r = 0.5, p = 0.004$) in the study sample. The findings indicated that men and women who had greater resourcefulness had higher scores on measures of sexual satisfaction and sexual self-concept. Resourcefulness was not related to sexual function in either sex. The findings showed that spirituality was positively and significantly correlated with resourcefulness ($r = 0.32, p = 0.000$), indicating that the patients with rectal cancer who reported greater spirituality also had greater resourcefulness.

Discussion

The major finding of this analysis was that lower resourcefulness was associated with lower spirituality, sexual satisfaction, and sexual self-concept in both genders. The current study's research questions did not examine the relationships between sexual function and cancer-related factors in patients with rectal cancer. Lower resourcefulness also was associated with male gender, greater number of comorbid conditions, and lower education.

The mean score of 97.51 on the RS indicated that the study participants were somewhat resourceful, with about 68% (reflected by one standard deviation of the mean) of the sample having scores from 77–118 on a scale with a theoretical range of 0–140. One explanation of that finding may be related to the fact that the RS captures both personal and social resourcefulness skills; because the Taiwanese people are known to value self-reliance, they typically are more reluctant to seek help from others (Au et al., 2010). The total score on the RS may be lower because of the participants' responses on the social resourcefulness items, which comprise 43% (12 of 28) of the scale items. Additional research to determine specific resourcefulness skills that may be lacking in this population is warranted. Room for substantial improvement may exist in resourcefulness skills for these patients, which could have far-reaching health benefits for them in the future.

By contrast, the mean score on the BMSWBI-Spirituality was 85.56 and ranged from 51–100 (Au et al., 2010), indicating that the majority of the participants had a high level of spirituality. One explanation for this finding may be the length of time since their surgery. Perhaps the participants were better able to adopt a positive attitude over time in relation to their stressful situation while going through the adjustment process. Another explanation could be that the BMSWBI-Spirituality was developed in Hong Kong, and this analysis was the first time it was used in the Taiwanese population. Although the pilot test showed no problems with understanding the items, the items are scored on a 11-point scale with responses ranging from 0 (not at all) to 10 (very much). In addition, cultural differences in the interpretation of items on the scale may have played a role, as the scale was developed in Hong Kong and may not truly reflect the meaning of spirituality for Taiwanese people.

Age was not associated with resourcefulness in this analysis. That finding is consistent with a study by Zauszniewski et al. (2005), which found that age was not a significant predictor of resourcefulness in African American caregivers and noncaregivers. The

Table 2. Correlation Matrix of Study Variables

Measure	1	2	3	4	5	6	7	8
1. Spirituality	1							
2. Resourcefulness	0.32***	1						
3. Communication	0.47***	0.22*	1					
4. Sexual relationship	0.48***	0.43***	0.68***	1				
5. Male sexual self-concept	0.44***	0.36***	0.38***	0.44***	1			
6. Female sexual self-concept	0.47**	0.5**	0.48**	0.63***	–	1		
7. Male sexual function	0.13	0.02	0.15	0.17	0.17	–	1	
8. Female sexual function	0.02	0.08	0.27	0.19	–	0.14	–	1

N = 120

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

current findings indicated a gender difference in relation to resourcefulness, with women reporting greater resourcefulness than men. Zauszniewski and Chung (2001) found women to be more resourceful than men. However, Bekhet, Zauszniewski, and Wykle (2008) reported no gender difference on resourcefulness. The sample characteristics in Zauszniewski and Chung's (2001) study (women with diabetes) and Bekhet et al.'s (2008) study (older adults relocated to retirement communities) differed from those in the current study. In addition, both studies measured only personal resourcefulness, whereas the current analysis measured personal and social resourcefulness skills. A difference in educational level on resourcefulness also was found ($p = 0.001$). The findings of this analysis are consistent with previous studies, where people with higher educational levels were more highly resourceful than those with less education (Bekhet et al., 2008). However, in the current analysis, the sample was comprised of Taiwanese adult patients with rectal cancer (aged 29–85 years), whereas in Bekhet et al.'s (2008) study, participants were Americans aged 65–95 years, many of whom had chronic conditions and who recently relocated to retirement communities.

The finding that greater comorbidity was associated with lower resourcefulness is consistent with a study conducted by Tithiphontumrong (2005), which found that older adults with fewer chronic conditions had greater personal resourcefulness. The participants in the current analysis scored above average on the RS, particularly personal resourcefulness, but low-to-moderate levels on social resourcefulness, which indicated that the participants did not tend to seek help from others. One possible explanation for why a greater number of chronic conditions were associated with lower resourcefulness may be that the study participants did not seek help for treatment of illnesses, which then became chronic over time. That may be particularly true in this study, which involved a younger population, on average, than the study conducted by Tithiphontumrong (2005) that focused only on learned (i.e., personal) resourcefulness using the 36-item Self-Control Schedule (Rosenbaum, 1990).

The findings indicate that resourcefulness is positively and significantly associated with sexual satisfaction and sexual self-concept for men and women. No studies have examined resourcefulness and sexual satisfaction or sexual self-concept in patients with rectal cancer. However, the results from this analysis may be consistent with a study conducted by Pedro (2001) that showed an inverse correlation between learned resourcefulness and health-related quality of life in long-term cancer survivors, as well as a study by Lai (2005) that showed people with greater positive beliefs (included a positive view of oneself) have greater resourcefulness and better

adaptive functioning. A greater positive view of oneself can reflect self-concept, which is related to sexual self-concept, an indicator of sexuality. However, the studies by Pedro (2001) and Lai (2005) only measured personal resourcefulness skills, whereas the current analysis conceptualized resourcefulness as consisting of personal and social dimensions.

In this analysis, age also was not associated with spirituality. That contradicts Mystakidou et al.'s (2008) study, which found that not only age but gender, years of education, and cancer treatment contributed to the prediction of spiritual beliefs and attitudes as measured by the Spiritual Involvement and Beliefs Scale in patients with advanced cancer treated in a palliative care unit.

The findings from this analysis showed that spirituality was positively and significantly associated with sexual satisfaction (communication $r = 0.47$, $p = 0.000$; sexual relationship $r = 0.48$, $p = 0.000$) and sexual self-concept for men ($r = 0.44$, $p = 0.000$) and women ($r = 0.47$, $p = 0.007$) in the study sample, which indicated that the concepts of spirituality and sexuality are closely related. No other studies were found that specifically examined the relationship between spirituality and sexuality in patients with rectal cancer. McIlmurray et al. (2003) reported that 83% of patients with cancer who had religious faith in general were less reliant on health professionals, had less need for information, and had less need for help with their sexuality than those who said they had no religious faith (McIlmurray et al., 2003). However, the definition for spirituality in the present analysis reflected meaning in life; religious faith was differentiated in this study.

Although the current study's findings showed a significant relationship between spirituality and resourcefulness, the correlation was modest ($r = 0.32$, $p < 0.001$). That is not consistent with Potter and Zauszniewski's (2000) study, which found that spirituality and resourcefulness were negatively associated in people with rheumatoid arthritis ($r = 0.42$, $p < 0.05$). However, Potter and Zauszniewski (2000) measured only personal resourcefulness, whereas the present study also captured social resourcefulness. In addition, in Potter and Zauszniewski's (2000) study, spirituality was conceptualized as religiosity, which was not true for the current analysis. The samples in the two studies also differed—American versus Taiwanese.

Limitations

This analysis was limited by the use of convenience sampling and a cross-sectional design with a single measurement point and a single recruitment site. An inadequate smaller sample size of female participants limited the examination of comparisons with men on study variables. A low Cronbach alpha (0.69) for the Chinese version of the SSSS-M implies that the results

must be cautiously interpreted. That may indicate that the Chinese translated version is flawed or responses to the test are assumed to be from culture differences. Introduction of bias through the use of face-to-face interviews with the patients with rectal cancer was another potential limitation.

Implications for Nursing

Teaching resourcefulness skills—not only personal skills but, more importantly, social skills—is essential so that patients with rectal cancer in Taiwan may learn to rely on family or friends, exchange ideas with others, and seek professional or expert help when they encounter stressful situations. The relationship between spirituality and resourcefulness and sexuality indicators (sexual satisfaction and sexual self-concept) should be tested to determine the existence of a moderating or mediating effect of the intervening variables, which, in turn, may lead to the development of interventions that can enable patients with rectal cancer to effectively use spiritual interventions and help-seeking resourcefulness to regain sexual health.

The current study's findings will be important factors to incorporate into the establishment of an assessment tool for screening long-term survivors of rectal cancer at risk for low spirituality and resourcefulness, as well as low scores of indicators of sexual satisfaction, sexual self-concept, and sexual function. A clinical pathway for screening high-risk patients with rectal cancer and their partners should be established.

Establishing a nonjudgmental and positive attitude toward sexuality is crucial for healthcare professionals. Before dealing with sexual issues, healthcare professionals need to be aware of the uniqueness and the multidimensionality of sexuality for each individual. Healthcare professionals need to assess their own beliefs, attitudes, and values toward sexuality through self-reflection and self-awareness. A curriculum related to sexuality or sexual health should be developed within nursing programs, which could include seminars on sexual issues as well as in-service programs

for nurses in practice (Ho & Fernández, 2006; Khoo, 2009; Magnan & Reynolds, 2006; Mou, 2002).

The findings support Schlotfeldt's (1975) model that the HSBs (spirituality and resourcefulness) are recognized as such for enhancing rectal cancer survivors' healthy sexuality, which can be affected by gender, education levels, and comorbid conditions. However, Schlotfeldt's health-seeking model does not suggest a relationship between two HSBs, which is new and could be explored in the future.

In this study, the authors made an effort to illuminate the hidden side of rectal cancer survivors' sexuality—psychosocial aspects—which often has been ignored or overlooked but factors heavily in their psychological health and quality of life. The HSBs used in this study, spirituality and resourcefulness, play a significant role in the lives of these patients and their partners. Subsequent research with mixed-methods design incorporating qualitative and quantitative studies in a larger, more diverse population is needed to extend the investigation of the benefits of spirituality and resourcefulness and their effect on sexuality to develop culturally relevant interventions that will optimize patients' and their partners' health in terms of quality of life.

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References

- Andersen, B.L., & Cyranowski, J.M. (1994). Women's sexual self-schema. *Journal of Personality and Social Psychology*, 67, 1079–1100.
- Andersen, B.L., Cyranowski, J.M., & Espindle, D. (1999). Men's sexual self-schema. *Journal of Personality and Social Psychology*, 76, 645–661.
- Andersen, B.L., & van der Does, J. (1994). Sexual morbidity following gynecologic cancer: An international problem. *International Journal of Gynecologic Cancer*, 4, 225–240.
- Au, T.Y., Zauszniewski, J.A., Daly, B., Gary, F., & Deimling, G. (2010). *Perceived stress, spirituality, resourcefulness, and sexuality in patients with rectal cancer undergoing cancer treatment* (Unpublished doctoral dissertation). Case Western Reserve University, Cleveland, OH.
- Au, T.Y., Zauszniewski, J.A., & King, T.M. (2011). Demographics, cancer-related factors and sexual function in rectal cancer patients in Taiwan: Preliminary findings. *Cancer Nursing*. Advanced online publication.
- Bekhet, A.K., Zauszniewski, J.A., & Wykle, M.L. (2008). Milieu change and relocation adjustment in elders. *Western Journal of Nursing Research*, 31(1), 113–129. doi:10.1177/01939459073-09309
- Bloemen, J.G., Visschers, R.G., Truin, W., Beets, G.L., & Konsten, J.L. (2009). Long-term quality of life in patients with rectal cancer: Association with severe postoperative complications and presence of a stoma. *Diseases of the Colon and Rectum*, 52, 1251–1258.
- Bulter, R.N., & Lewis, M.I. (1993). *Love and sex after 60*. New York, NY: Ballantine Books.

- Chiu, L. (2001). Spiritual resources of Chinese immigrants with breast cancer in the USA. *International Journal of Nursing Studies*, 38, 175–184.
- Clay, K.S., Talley, C., & Young, K.B. (2010). Exploring spiritual well-being among survivors of colorectal and lung cancer. *Journal of Religion and Spirituality in Social Work*, 29, 14–32.
- Davies, R.J., O'Connor, B.I., Victor, C., MacRae, H.M., Cohen, Z., & McLeod, R.S. (2008). A prospective evaluation of sexual function and quality of life after ileal pouch-anal anastomosis. *Diseases of the Colon and Rectum*, 51, 1032–1035. doi:10.1007/s10350-008-9248-x
- Dossey, B.M., & Guzzetta, C.E. (2000). Holistic nursing practice. In B.M. Dossey, L. Keegan, & C.E. Guzzetta (Eds.), *Holistic nursing: A handbook for practice* (pp. 5–26). Rockville, MD: Aspen.
- Emblen, J.D. (1992). Religion and spirituality defined according to current use in nursing literature. *Journal of Professional Nursing*, 8(1), 41–47.
- Fowers, B.J., & Olson, D.H. (1989). ENRICH marital inventory: A discriminant validity and cross-validation assessment. *Journal of Marital and Family Therapy*, 15(1), 65–79.
- Glazer, G.L., & Pressler, J.L. (1989). Schlotfeldt's health-seeking nursing model. In J.J. Fitzpatrick & A.L. Whall (Eds.), *Conceptual models of nursing: Analysis and application* (p. 245). Norwalk, CT: Appleton and Lange.
- Goldberg, L.R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26–42.
- Helminiak, D.A. (1998). Sexuality and spirituality: A humanist account. *Pastoral Psychology*, 47, 119–125.
- Hendren, S.K., O'Connor, B.I., Liu, M., Asano, T., Cohen, Z., Swallow, C.J., . . . McLeod, R.S. (2005). Prevalence of male and female sexual dysfunction is high following surgery for rectal cancer. *Annals of Surgery*, 242, 212–223. doi:10.1097/01.sla.0000171299.43954.ce
- Ho, T.M., & Fernández, M. (2006). Patient's sexual health: Do we care enough? *Journal of Renal Care*, 32, 183–186.
- Huang, C.Y., Guo, S.E., Hung, C.M., Shih, S.L., Lee, L.C., Hung, G.C., & Huang, S.M. (2010). Learned resourcefulness, quality of life, and depressive symptoms for patients with breast cancer [Online exclusive]. *Oncology Nursing Forum*, 37, E280–E287. doi:10.1188/10.ONF.E280–E287
- Huang, C.Y., Sousa, V.D., Chen, H.F., Tu, S.Y., Chang, C.J., & Pan, I.J. (2007). Stressors, depressive symptoms, and learned resourcefulness among Taiwanese adults with diabetes mellitus. *Research and Theory for Nursing Practice*, 21(2), 83–97.
- Khoo, S.B. (2009). Impact of cancer on psychosexuality: Cultural perspectives of Asian women. *International Journal of Nursing Practice*, 15, 481–488. doi:10.1111/j.1440-172X.2009.01797.x
- Lai, C.Y. (2005). *Learned resourcefulness, cognitive processes, and adaptive functioning in depressed adults* (Unpublished doctoral dissertation). Case Western Reserve University, Cleveland, OH.
- Laubmeier, K.K., Zakowski, S.G., & Bair, J.P. (2004). The role of spirituality in the psychological adjustment to cancer: A test of the Transactional Model of Stress and Coping. *International Journal of Behavioral Medicine*, 11(1), 48–55. doi:10.1207/s15327558ijbm1101_6
- Magnan, M.A., & Reynolds, K. (2006). Barriers to addressing patient sexuality concerns across five areas of specialization. *Clinical Nurse Specialist*, 20, 285–292.
- Maliski, S.L., Connor, S.E., Williams, L., & Litwin, M.S. (2010). Faith among low-income, African American/black men treated for prostate cancer. *Cancer Nursing*, 33, 470–478.
- McCormick, D.P., Holder, B., Wetsel, M.A., & Cawthon, T.W. (2001). Spirituality and HIV disease: An integrated perspective. *Journal of the Association of Nurses in AIDS Care*, 12(3), 58–65.
- McIlmurray, M.B., Francis, B., Harman, J.C., Morris, S.M., Soothill, K., & Thomas, C. (2003). Psychosocial needs in cancer patients related to religious belief. *Palliative Medicine*, 17, 49–54.
- Molassiotis, A., Chan, C.W., Yam, B.M., & Chan, S.J. (2000). Quality of life in Chinese women with gynaecological cancers. *Supportive Care in Cancer*, 8, 414–422. doi:10.1007/s005200-000136
- Moret, L.B., Glaser, B.A., Page, R.C., & Barger, E.F. (1998). Intimacy and sexual satisfaction in unmarried couple relationships: A pilot study. *Family Journal: Counseling and Therapy for Couples and Families*, 6(1), 33–39.
- Mou, H.J. (2002). *The relationship between psychosocial adjustment and social support for the colorectal cancer patients* (Unpublished master's theses). National Yan-Ming University, Taipei, Taiwan.
- Mystakidou, K., Tsilika, E., Parpa, E., Hatzipli, I., Smyrnioti, M., Galanos, A., & Vlahos, L. (2008). Demographic and clinical predictors of spirituality in advanced cancer patients: A randomized control study. *Journal of Clinical Nursing*, 17, 1779–1785. doi:10.1111/j.1365-2702.2008.02327.x
- Ng, S.M., Yau, J.K., Chan, C.L., Chan, C.H., & Ho, D.Y. (2005). The measurement of body-mind-spirit well-being toward multidimensionality and transcultural applicability. *Social Work in Health Care*, 41(1), 33–52. doi:10.1300/J010-v41n01_03
- Pedro, L.W. (2001). Quality of life for long-term survivors of cancer: Influencing variables. *Cancer Nursing*, 24, 1–11.
- Potter, M.L., & Zauszniewski, J.A. (2000). Spirituality, resourcefulness, and arthritis impact on health perception of elders with rheumatoid arthritis. *Journal of Holistic Nursing*, 18, 311–331.
- Reed, P.G. (1992). An emerging paradigm for the investigation of spirituality in nursing. *Research in Nursing and Health*, 15, 349–357.
- Rice, A.M. (2000). Sexuality in cancer and palliative care 2: Exploring the issues. *International Journal of Palliative Nursing*, 6, 448–453.
- Rosen, R., Brown, C., Heiman, J., Leiblum, S., Meston, C., Shabsigh, R., . . . D'Agostino, R. (2000). The Female Sexual Function Index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex and Marital Therapy*, 26, 191–208. doi:10.1080/009262300278597
- Rosen, R.C., Riley, A., Wagner, G., Osterloh, I.H., Kirkpatrick, J., & Mishra, A. (1997). The international index of erectile function (IIEF): A multidimensional scale for assessment of erectile dysfunction. *Urology*, 49, 822–830.
- Rosenbaum, M. (1990). The role of learned resourcefulness in the self-control of health behavior. In M. Rosenbaum (Ed.), *Learned resourcefulness: On coping skills, self-control, and adaptive behavior* (pp. 3–30). New York, NY: Springer.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Schlotfeldt, R.M. (1975). The need for a conceptual framework. In P. Verhoning (Ed.), *Nursing research* (pp. 3–23). Boston, MA: Little, Brown.
- Schmidt, C.E., Bestmann, B., Küchler, T., Longo, W.E., & Kremer, B. (2005). Ten-year historic cohort of quality of life and sexuality in patients with rectal cancer. *Diseases of the Colon and Rectum*, 48, 483–492.
- Taiwan Department of Health. (2011). 2008 incidence and ranking of cancers in Taiwan. Retrieved from <http://www.bhp.doh.gov.tw/bhpnnet/portal/PressShow.aspx?No=201104120001>
- Tithiphontumrong, S. (2005). *Health-seeking resources and quality of life in chronically ill elders* (Unpublished doctoral dissertation). Case Western Reserve University, Cleveland, OH.
- Woods, N.F. (1987). Toward a holistic perspective of human sexuality: Alterations in sexual health and nursing diagnoses. *Holistic Nursing Practice*, 1, 1–11.
- World Health Organization. (2000). *Promotion of sexual health: Recommendations for action*. Retrieved from <http://new.paho.org/hq/dmdocuments/2008/PromotionSexualHealth.pdf>
- Zauszniewski, J.A. (1996). Self-help and help-seeking behavior patterns in healthy elders. *Journal of Holistic Nursing*, 14, 223–236.
- Zauszniewski, J.A. (2006). Resourcefulness: A new mid-range theory. In J. J. Fitzpatrick & M. Wallace (Eds.), *Encyclopedia of nursing research* (pp. 256–258). New York, NY: Springer.
- Zauszniewski, J.A., & Chung, C. (2001). Resourcefulness and health practices of diabetic women. *Research in Nursing and Health*, 24, 113–121.
- Zauszniewski, J.A., Chung, C., & Krafcik, K. (2001). Social cognitive factors predicting the health of elders. *Western Journal of Nursing Research*, 23, 490–503. doi:10.1177/0193-9450122045339
- Zauszniewski, J.A., Lai, C.Y., & Tithiphontumrong, S. (2006). Development and testing of the Resourcefulness Scale for older adults. *Journal of Nursing Measurement*, 14(1), 57–68.
- Zauszniewski, J.A., Picot, S.J., Roberts, B.L., Debanne, S.M., & Wykle, M.L. (2005). Predictors of resourcefulness in African American women. *Journal of Aging and Health*, 17, 609–633.