

Biopsychosocial models in cancer care: Application of a counseling model of wellness

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Sylvestro, H. M., Mobley, K. A., & Wester, K. L. (2021). Biopsychosocial models in cancer care: Application of a counseling model of wellness. *Journal of Counselor Leadership and Advocacy*, 8(2), 116-129. DOI: 10.1080/2326716X.2021.1946665

This is an Accepted Manuscript of an article published by Taylor & Francis in *Journal of Counselor Leadership and Advocacy* on 05 July 2021, available at:

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Abstract:

This correlational research study explored connections between multidisciplinary biopsychosocial assessment models, namely the Quality of Life model and the Indivisible Self model of wellness, and their utility in assessing psychosocial well-being in cancer survivorship. Both assessment models were found to account for statistically significant variance in depression scores and were found to have more shared variance than unique variance. Implications for utilizing a counseling model of wellness within a cancer context are discussed.

Keywords: wellness | cancer survivors | biopsychosocial | quality of life

Article:

Near the turn of the 21st century, counseling scholars touted the importance of the counseling profession to reaffirm and deepen its commitment to a holistic model of wellness (e.g., Myers, 1992; Witmer & Sweeney, 1992). Shifts in medical practice toward a more integrated, biopsychosocial model of health care (see Engel, 1981) appeared to provide a unique opportunity for counseling professionals to bring their rich history of preventative, wellness-based practice to the table (Myers, 1992). The ensuing decade of wellness-based research resulted in the development of the first counseling-based wellness model, the Wheel of Wellness (Myers et al., 2000; Witmer & Sweeney, 1992), and the holistic Indivisible Self (Myers & Sweeney, 2004). Despite considerable gains in wellness-based assessment research, the leaders of this movement understood the real success of these models would depend on the counseling profession embracing a wellness paradigm as core to its identity, and its ability to practice wellness-based counseling in a variety of care settings. In her 1992 article *Wellness, Prevention, Development: The Cornerstone of the Profession*, Myers concluded: “it will be difficult for the profession to embrace an identity based on developmental, wellness, preventative approaches unless we can prove the value of our services to ourselves as well as to others” (p. 139).

Nearly three decades later, the charge for counseling professionals to practice and advocate for a wellness-oriented paradigm within the larger healthcare context remains vital. Though still in their nascency, models of integrated care have emerged as a means to better address the holistic health needs of individuals and populations (World Health Organization [WHO], 2015). Integrated care approaches prioritize the systematic coordination of behavioral and mental healthcare providers with primary and specialized medical care providers to address patient health needs (Miller, 2014; Ross & Greenberg, 2020). Although a multitude of definitions and structural models of integrated care exist, such models are rooted in values of evidenced-based practice, professional and patient collaboration, and the promotion of a holistic biopsychosocial conceptualization of health (WHO, 2015; Zonneveld et al., 2018). The increased prevalence of integrated care models has accorded mental health professionals greater opportunities to apply their clinical and research expertise to the goal of improving holistic biopsychosocial care (Glueck, 2015; Goldsmith & Kurpius, 2015; Kelly & Coons, 2012). Few examples illustrate this growing trend as effectively as the field of oncology.

More than just a complex disease requiring medical treatments, cancer is now considered an often-traumatic life event that has been linked to significant psychosocial impacts across nearly all facets of well-being (e.g., Costa et al., 2016; Lai et al., 2012). Cancer survivors may experience a plethora of cancer-related psychosocial effects, including but not limited to depression, anxiety, PTSD, ongoing fears of cancer recurrence, changes to sexuality and fertility, difficulty maintaining or finding employment, altered body image, survivor's guilt, posttraumatic growth, and physical impairment related to cancer treatment side effects and related stressors (National Cancer Institute, 2020; Syrjala & Yi, 2016). Projections indicate that up to 50% of cancer survivors will experience impairment from mental health disorders and related symptomatology, with depression being the most common mental health disorder among this group (Brandenburg et al., 2019; Niedzwiedz et al., 2019). With an estimated 16.9 million American cancer survivors alive as of January 2019 (American Cancer Society, 2020), and estimates of 20 million survivors projected to be alive by 2030 (Miller et al., 2019), cancer survivors represent a significant population that could benefit from the care and expertise of counseling professionals.

Oncological professionals (e.g., medical doctors, surgeons, radiologists, nursing professionals, etc.; American Cancer Society, 2019) have spent the last 20 years attempting to close gaps in the psychosocial care of cancer survivors, and have identified the use of biopsychosocial assessment tools as valuable means of improving coordination of integrated treatment efforts between medical and mental healthcare providers (Grassi et al., 2015). Biopsychosocial assessment tools aim to identify significant leverage points in treatment planning for biological, social, and psychological determinants of health (Alonso, 2004; Hatala, 2012). Biopsychosocial models are particularly appropriate for cancer survivors, as the closely intertwined biomedical and psychosocial impacts of cancer may not be appropriately understood if singularly assessed (Cella & Stone, 2015; Shapiro et al., 2001). Measures of quality of life (QoL) remain the most widely used biopsychosocial assessment tools in cancer care (Cella & Stone, 2015). Theoretically, QoL is a concept closely associated with well-being and wellness (Cook et al., 2016; Miller & Foster, 2010), and is intended to be a holistic and subjective construct (Carr et al., 2003).

However, biopsychosocial models generated within a medical context – such as QoL – have been criticized for overly emphasizing bio-medical functioning and may fail to appropriately assess psychosocial factors relevant to holistic treatment planning (Alonso, 2004; Connell et al., 2014). While theoretically holistic in scope, current research and application of the QoL model is more closely tied to the medical model which often focuses on physical and mental decline and impaired functioning (Carr et al., 2003). Furthermore, some have implied biopsychosocial models utilized in medical care continue to promote an artificial distinction between biological and psychological health (Tavakoli, 2009). A shift toward a more holistic approach, one that assumes equality and interconnectedness between biological and psychological factors, may improve the utility of the biopsychosocial model in health research and practice (Borrell-Carrió et al., 2004; Hatala, 2012).

As previously addressed, wellness has been considered the foundational paradigm of health within the counseling profession (Myers & Sweeney, 2008). Myers et al. (2000) defines wellness as:

a way of life oriented toward optimal health and well-being in which body, mind, and spirit are integrated by the individual to live more fully within the human and natural community. Ideally it is the optimum state of health and well-being that each individual is capable of achieving. (Myers et al., 2000, p. 252)

The Wheel of Wellness (WoW) was the first major conceptual model of wellness in the counseling field, founded upon Alfred Adler's concept of holism in addition to multi-disciplinary correlates of health and quality of life (Sweeney & Witmer, 1991; Witmer & Sweeney, 1992). In the decades since its inception, examination of the structural model of the WoW led to the creation of the evidence-based Indivisible Self (Hattie et al., 2004; Myers & Sweeney, 2004) and its corresponding instrument: the Five-Factor Wellness Inventory (the FFWEL, also known as the 5-FWel; Myers & Sweeney, 2005b). Organized around a higher-order factor of wellness, the model includes five second-order factors including the Creative Self (attributes related to how we find a unique place within social interactions and interpret the world), the Coping Self (how people respond to life events, including negative experiences), the Social Self (social support through connection with friends and intimate relationships), the Essential Self (spirituality, self-care, gender identity, and cultural identity), and the Physical Self (exercise and nutrition) (Hattie et al., 2004; Myers & Sweeney, 2004). Intended as a model for assessment and treatment planning, the Indivisible Self and FFWEL have been applied in multiple studies. A recent meta-analysis of the FFWEL by Shannonhouse et al. (2020) has been used with a wide variety of populations, including children and adolescents, young, middle, and older adults; LBGT-Q populations; various racial and ethnic groups; and clinical populations seeking mental health or other health services. Results from the meta-analysis indicate that the FFWEL is psychometrically sound and demonstrates strong utility for developing wellness goals in clinical settings (Shannonhouse et al., 2020). More research on clinical populations has been recommended, in addition to more outcome studies (Myers & Sweeney, 2008; Shannonhouse et al., 2020).

Toward such ends, counselors must actively engage in oncological integrated care research and practice, using the field's philosophical wellness beliefs to bridge the gaps between the medical

and mental health professions. Myers's (1992) charge to the counseling profession to "prove the value of our services to ourselves as well as others" remains relevant (p. 139). A counseling biopsychosocial model of health, namely the Indivisible Self model of wellness (see Myers & Sweeney, 2004), may provide unique contributions to improving oncological biopsychosocial care and assessment for multiple reasons. First, the philosophy of counseling has been particularly influential in guiding its models of assessment. Historically based on wellness and humanistic practices, the counseling profession has resisted embracing areas of practice that over-rely on a biomedical or disease model of health (Myers, 1992; Ohrt et al., 2018). A case could be made the counseling field emphasizes aspects of health often ignored in the greater healthcare community (e.g., personal strengths, multicultural contexts, social justice, spirituality) due, at least in part, to the profession's disinclination to adhere to the medical model. The holistically based Indivisible Self reflects counseling's core values (Myers & Sweeney, 2004) and provides a model for both the assessment and intervention of personal wellness (Ohrt et al., 2018).

In addition to its own unique strengths, a counseling model of wellness is theoretically congruent with a QoL model. QoL and wellness represent two prominent conceptualizations of well-being that emerged in health literature and share many overlapping features (Cook et al., 2016). Similar to counseling models of wellness, QoL includes a broad host of constructs, most commonly physical, psychological, spiritual, and social well-being, that influence and comprise one's overall well-being (Lavdaniti & Tsitsis, 2015; Sirgy, 2012), albeit from more of a medical-model perspective. While the QoL is more commonly used in medical research, including oncology, recent work across multiple fields indicates the need for improved sensitivity of QoL assessment in capturing mental health factors (Connell et al., 2014) and other subjective factors relevant to holistic well-being (Moons et al., 2006). A counseling model of wellness may actually be more sensitive than QoL in assessing mental health and holistic well-being. Given the plethora of psychosocial effects survivors experience, the use of a counseling model of wellness could enhance assessment, research, and psychosocial care of this population.

The purpose of this cross-sectional, correlational research study is to explore connections between multidisciplinary frameworks of biopsychosocial well-being, namely a cancer-specific QoL model and a general counseling model of wellness, and their ability to assess significant psychosocial factors that impact holistic well-being among cancer survivors. In particular, this study first explores the extent to which both models account for relevant psychosocial factors related to depressive symptomatology, as depressive symptoms are considered to be among the most common cancer-related psychosocial effects throughout every stage of the cancer journey. The researchers also explore which model (i.e., wellness or QoL) is a stronger individual predictor of depression among cancer survivors, as well as the combined predictive power of the well-being models. Additionally, the researchers conduct a commonality analysis of the overall QoL and wellness models in order to determine their unique and shared variance. Finally, the researchers highlight whether a counseling model of wellness provides any unique contributions to biopsychosocial assessment within a cancer context.

Method

Participants

Permission from the Institutional Review Board at the researchers' university was obtained prior to reaching out to participants. For participants to be included in the study, they were required to meet the following criteria: (1) must have recently entered into (full or partial) remission of cancer, (2) were within five years of their cancer diagnosis, (3) underwent surgery, radiation, and/or chemotherapy treatment, and (4) were 18 years or older. For the purposes of this study, it was critical that participants were within a few years of their diagnosis as they were asked to reflect upon past and current psychosocial needs during their pre- and post-cancer treatment experiences. Similarly, as cancer types and treatments vary widely, individuals who have experienced a diagnosis severe enough to require surgery, chemotherapy, and/or radiation are likely to experience more significant impacts on general well-being due to the severe side effects often associated with these treatments (Faguy, 2013; Houldin, 2000).

The final sample consisted of 147 cancer survivors. The majority of participants were female ($n = 107$, 72.8%), with the remainder being male ($n = 40$, 27.2%). Age at the time of study completion ranged from 18 to 91 ($M = 49.25$ years, $SD = 14.9$; median = 50.5 years; mode = 43 years). The majority of the sample identified as White (81%, $n = 119$), 6.8% identified as Black ($n = 10$), 6.8% identified as Hispanic ($n = 10$), 2.7% identified as Asian/Pacific Islander ($n = 4$), 1.4% identified as American Indian/Alaskan Native ($n = 2$), 0.7% identified as "other" ($n = 1$), and one participant endorsed the option "Prefer not to answer."

Participants reported various cancer types, remission statuses, stages, and treatment categories. Six participants did not disclose their type of cancer (but provided additional details of their cancer experience such as treatments, and date of diagnosis); thus, of the participants who disclosed their cancer type ($n = 141$), 17 cancer types were indicated within the participant sample. The most common diagnoses reported include cancers of the breast ($n = 44$, 29.9%), lung ($n = 17$, 11.6%), and prostate ($n = 13$, 8.8%). The majority of participants reported being in full remission ($n = 106$, 72.1%), with the remainder reporting partial remission ($n = 41$, 27.9%). In cancer staging, 56 participants reported a cancer diagnosis at Stage I (38.1%), 46 participants reported a cancer diagnosis at Stage II (31.3%), 30 participants reported a cancer diagnosis at Stage III (20.4), 14 participants reported a cancer diagnosis at Stage V (9.5%), and one participant chose not to disclose their cancer staging (.7%). Reported cancer treatments received varied among participants; 116 participants reported receiving surgical treatment (78.9%), 73 participants report receiving chemotherapy (49.6%), 116 participants reported receiving radiation (63.3%), and 17 participants reported receiving additional adjuvant therapies (11.6%). It is important to note that many participants endorsed receiving multiple types of treatments.

Procedures

To obtain a broad sample of participants, two convenience-sampling procedures were used. The first method was recruitment of participants through public and closed Facebook cancer survivor support groups (approximately 15 groups total), which included those geared toward general and specific cancer-type populations. In closed groups, the researcher contacted the group administrator of a specific group, briefly explained the purpose of the study through a standardized message, and upon obtaining permission posted a short recruitment statement and

the link to the online survey. Participants recruited online could select a cancer-related charitable foundation of their choice, to which 2 USD would be donated by the researcher. Seventeen participants were obtained through the initial recruitment strategy.

The secondary recruitment strategy included paid sampling through a panel provided by the online survey organization, Qualtrics. Qualtrics accessed participants through participant panels within their network. The participants were recruited and remunerated by Qualtrics according to a standard fee for online panels (less than 20 USD). All data were screened and cleaned as it was collected, with suspicious or incomplete data being replaced by data from new panelists. A total of 130 participants were recruited through Qualtrics panel, in addition to 17 participants recruited and incentivized through the aforementioned Facebook pages.

Instruments

Demographic Questionnaire

Participants were asked to report their gender, age, date of diagnosis, diagnosis type and stage, treatment category, remission status, length of time in remission, race, relationship status, housemates, and current employment status.

Quality of Life (QoL)

The Functional Assessment of Cancer Therapy Scale, version 4 (FACT-G; Cella et al., 1993) is a 27-item assessment measuring QoL specific to cancer patients. The current version contains four subscales and a total QoL score. The four subscales of the FACT-G include Physical Well-Being (PWB, 7 items), Emotional Well-Being (EWB, 6 items), Social Well-Being (SWB, 7-items), and Functional Well-Being (FWB, 7 items; Cella et al., 1993). Participants respond to items using a five-point Likert scale (0 = Not at all to 4 = Very much), with a lower score indicating lower QoL. The subscales have been found to have adequate reliability with Cronbach alpha coefficients ranging between .69 and .82, with an overall alpha of .89 (Cella et al., 1993). The FACT-G is prevalent in its use in cancer care across the globe (Cella & Stone, 2015; Cella et al., 1993). Internal consistency of items on the FACT-G subscales for the current sample ranged from .86 (FWB) to .91 (PWB). The FACT-G has been shown to have concurrent, convergent, and discriminant validity with similar quality of life and related measures, such as the Functional Living Index-Cancer and the Brief Poms (Cella et al., 1993; Iravani et al., 2018; Overcash et al., 2001). The FACT-G has been shown to be sufficiently valid and reliable in measuring QoL in various populations that include rural communities, the elderly, and cancer patients across the globe (Costet et al., 2005; Overcash et al., 2001; Winstead-Fry & Schultz, 1997).

Wellness

The Five-Factor Wellness Inventory, Adult (FFWEL-A; previously titled the 5 F-WEL), is a 91-item questionnaire designed to assess holistic and component-specific wellness from a counseling perspective (Myers & Sweeney, 2005b). The FFWEL-A has a single higher order factor of wellness that describes one's general well-being or holistic wellness, with five second-order factors including: Physical Self (10 items), Social Self (8 items), Coping Self (19 items),

Essential Self (16 items), and Creative Self (21 items). Participants respond on a 4-point Likert-type scale from “strongly agree” to “strongly disagree,” with higher scores indicating higher levels of wellness (Myers & Sweeney, 2005b). In this study, the second-order factors are referred to as subscales for the purpose of comparison with the FACT-G. The FFWEL-A has evidence of reliability for total wellness (Cronbach $\alpha = .94$) and internal consistency for the five second-order factors ranging from .89 to .96 (Myers & Sweeney, 2005b). In the current study, the FFWEL-A internal consistency of items ranged from .83 (Essential Self) to .91 (Creative Self), supporting the reliability of this measure for use within this sample. Validity tests for the FFWEL-A have demonstrated concurrent validity with similar constructs (Hattie et al., 2004), as well strong evidence of convergent and discriminant validity (Myers & Sweeney, 2004).

Depression

The Center for Epidemiologic Studies Short Depression Scale (CES- D-10) is a ten-item self-report questionnaire designed to assess depression in the general adult population (Andersen et al., 1994). Responses are rated on a 4-point Likert scale from 0 (less than one day) to 4 (5–7 days). The CES- D-10 has a score range of 0 to 30, with scores of 10 or higher indicating the presence of significant depressive symptomatology (Andersen et al., 1994). The CES-D-10 is not designed as a tool for clinical diagnosis of depression, as the scales are based upon general symptoms of depression and are not sensitive to levels of severity of depressive symptomatology (Andersen et al., 1994; Radloff, 1977). The CES-D-10 has good internal reliability (Cronbach’s $\alpha = 0.89$), test re-test stability, construct validity (Andersen et al., 1994; Radloff, 1977), and concurrent validity with related measures such as the Patient Health Questionnaire and the WHO Disability Assessment Schedule (Baron et al., 2017). In the current study, the CES-D-10 was found to be highly reliable ($\alpha = 0.86$).

Data Analysis

A series of three multiple linear regression models were used to explore the relationships and the variance in depression explained by QoL and FFWEL-A. A commonality analysis (Nimon, 2010) was conducted to explore the unique and shared variance of QoL and FFWEL-A. According to G*Power (Version 3.1.9.2; Faul et al., 2009), to obtain a moderate effect size and power of .80, with alpha of .05, an estimated sample size of at least 114 participants was needed. Thus, the final sample size of 147 was sufficient to conduct all analyses. Prior to conducting the multiple regressions, the relevant assumptions of this statistical analysis were tested. All tolerance and VIF statistics fell within the normal range (tolerance $< .20$, VIF < 5), which indicates that the model does not have significant multicollinearity. Overall, 57.1% of participants met the cutoff of a score of 10 or higher on the CES-D-10, which resulted in a positive skew and indicates the presence of significant depressive symptomatology within the sample for the CES-D-10 scores. In evaluating for kurtosis, three well-being subscales of the FFWEL-A demonstrated a leptokurtic distribution, with scores concentrated around the mean: Coping Self, Creative Self, and Social Self. Although the distribution of data in several cases showed slight violations of normality, the deviation was not severe (Curran et al., 1996), and thus, did not require transformation for analysis. Additionally, research suggests that such violations are only problematic when testing norm-population references (Brown, 1997). In the

case of these data, scores that indicated below-average well-being and above-average rates of depression were consistent with researcher findings on cancer survivors.

Results

Two initial multiple-regression analyses were conducted to answer the first research question, one to explore the QoL predictors of depression, and the second to explore the FFWEL-A second-order subscale predictors of depression. In the first regression, the QoL subscales were regressed onto depression scores; the model was significant ($F(4, 142) = 69.007, p < .001$), explaining 66% of the variance in depression scores. All QoL predictors in the model were significant and showed small to moderate negative relationships ($\beta = -.17$ to $-.32$) with depression (see Table 1 for both standardized and unstandardized beta weights).

Table 1. Regression analysis for QoL (FACT-G second-order subscales) and wellness (FFWEL-A second-order subscales) on depression

	<i>B</i>	<i>SE</i>	β	<i>t</i>
Regression Model 1: QoL regressed on depression				
FACT-G PWB	-.300	.071	-.323	-4.205**
FACT-G SWB	-.305	.060	-.303	-5.102**
FACT-G EWB	-.282	.091	-.244	-3.080**
FACT-G FWB	-.179	.071	-.168	-2.537*
Regression Model 2: Wellness regressed on depression				
FFWEL-A SOC	-.105	.039	-.244	-2.668**
FFWEL-A CRTV	-.023	.076	-.038	-.303
FFWEL-A ESS	-.008	.051	-.014	-.167
FFWEL-A PHY	.032	.036	.075	.896
FFWEL-A COP	-.349	.062	-.551	-5.637**

* $p < .05$; ** $p < .01$; PWB = Physical Well-being; SWB = Social Well-being; EWB = Emotional Well-being; FWB = Functional Well-being; SOC = Social Self; CRTV = Creative Self; ESS = Essential Self; PHY = Physical Self; COP = Coping Self.

In the second regression, FFWEL-A second-order subscales were regressed onto depression scores. This model was also found to be significant ($F(5, 141) = 25.994, p < .000$), explaining 48% of variance in depression scores. However, results showed that only two predictors, Social Self ($\beta = -.22$) and Coping Self ($\beta = -.55$) had significant negative effects on depression scores. The Creative Self, Essential Self, and Physical Self were not statistically significant in relation to depression (see Table 1 for both standardized and unstandardized beta weights).

Finally, in a third regression model all QoL and FFWEL-A subscales were entered simultaneously in order to explore the combined impact of the QoL and wellness subscales. The full model was significant ($F(9, 137) = 40.543, p < .000$), indicating that together, QoL and wellness scales accounted for 73% of variance in depression scores ($R^2 = .727$; see Table 2). While the full model was significant, only three of the predictors entered emerged as significant: Physical Well-Being (FACT-PWB), Emotional Well-Being (FACT-EWB), and Coping Self (FFWEL-A COP). Overall, FACT-PWB ($\beta = -.32$) was a slightly stronger predictor, with a small to moderate negative relationship with depression scores. FACT-EWB ($\beta = -.24$) and the

Coping Self ($\beta = -.23$) from the FFWEL was also a negative relationship with depression. The FFWEL Coping Self was of similar strength, albeit slightly smaller, as FACT-EWB.

Table 2. Multiple regression analysis of combined QoL and wellness on depression

	<i>B</i>	<i>SE</i>	β	<i>t</i>
FACT-G PWB	-.295	.066	-.318	-4.49*
FACT-G SWB	-.122	.075	-.122	-1.62
FACT-G EWB	-.279	.088	-.242	-3.18*
FACT-G FWB	-.029	.071	-.027	-.41
FFWEL-A COP	-.150	.050	-.236	-2.98*
FFWEL-A CRTV	-.072	.058	-.117	-1.24
FFWEL-A ESS	-.015	.037	-.025	-.41
FFWEL-A PHY	.005	.027	.012	.19
FFWEL-A SOC	-.029	.036	-.062	-.81

PWB = Physical Well-being; SWB = Social Well-being; EWB = Emotional Well-being; FWB = Functional Well-being; COP = Coping Self; CRTV = Creative Self; ESS = Essential Self; PHY = Physical Self; *p <.01.

To calculate the unique versus shared variance of each well-being model, the researchers conducted a commonality analysis (Nimon, 2010). Figure 1 depicts the relationship between each model in explaining variance in depression scores, as well as the shared and unique contribution of each model. Results suggest that when combined, the FACT-G and FFWEL-A explain 73% of the variance in depression. Approximately 41% of the variance in the combined model is shared variance; whereas, the QoL (FACT-G) uniquely explains 24% of the variance in depression, and the wellness (FFWEL-A) uniquely explains 6% of the variance in depression in the combined model. Resultantly, the QoL assessment model (specifically, the FACT-G) accounted for more variance in depression scores than the wellness assessment model (the FFWEL-A); however, QoL and wellness have more shared variance than unique variance in explaining depression scores.

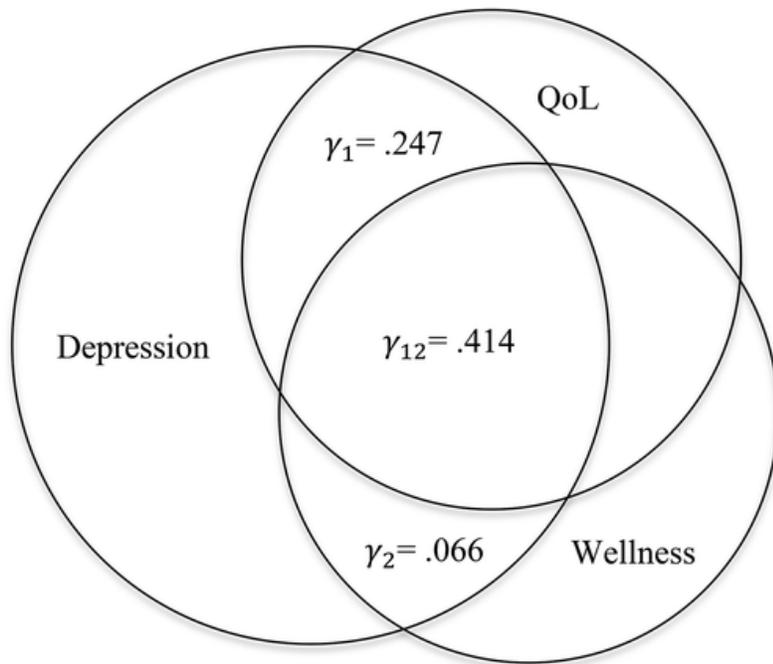


Figure 1. Commonality analysis of well-being models and depression. Total $R^2 = R_{12}^2 = .727$ FACTG $R^2 = R_1^2 = .661$ FWEL $R^2 = R_2^2 = .480$ Unique Variance of FACTG = $R_{12}^2 - R_2^2 = (.727) - (.480) = .247 (= \gamma_1)$ Unique Variance of FWEL = $R_{12}^2 - R_1^2 = (.727) - (.661) = .066 (= \gamma_2)$ Common Effect of FACT and FWEL = $R_1^2 + R_2^2 - R_{12}^2 = (.661) + (.480) - (.727) = 0.414 (= \gamma_{12})$

Discussion

The purpose of this study was to explore the utility of a counseling wellness model, in contrast to a cancer-specific QoL model, in capturing the psychosocial needs of cancer survivors. Biopsychosocial models of assessment have been identified as critical tools for improving well-being among cancer survivors (Grassi et al., 2015), yet a counseling model had not previously been tested. Furthermore, this study sought to affirm that a counseling biopsychosocial model, the Indivisible Self model of wellness, is congruent with health-related biopsychosocial models, e.g., QoL, commonly used with cancer survivors. Finally, this study sought to examine whether a counseling wellness model could provide a unique contribution in enhancing biopsychosocial assessment among cancer survivors.

In this study, both the QoL and counseling wellness models significantly accounted for depression scores among cancer survivors. The results indicated that over half of the participants ($n = 57\%$) were experiencing significant levels of depressive symptoms. These high rates demonstrate both the salience of mental health symptoms within cancer survivorship, as well as the utility of depression as a construct for measuring the fitness of well-being models for psychosocial assessment among cancer survivors. Examined in isolation, the QoL model (the FACT-G) explained 66% of variance in depression scores among cancer survivors, which is substantial. Conversely, the Indivisible Self (the FFWEL-A) explained 48% of variance in depression scores among the same group. Although the FFWEL-A accounted for a significant and sizable amount of variance in depression scores, the QoL model outperformed it in this

sample of cancer survivors. The oncological community has not been wrong in relying on QoL models – particularly the FACT-G – as a tool for guiding psychosocial treatment for cancer survivors. Nevertheless, both models contribute to overall variance explained, and also account for unique variance in depression scores; one should not be discounted over the other.

While QoL and wellness are both considered prominent models of well-being, little research has tested the relationships between these models (Cook et al., 2016). The results of this study demonstrate evidence of congruence between cancer-specific QoL and the Indivisible Self. First, when the QoL and FFWEL-A were examined in a combined model, they collectively accounted for 73% of variance in depression scores. Second, the models have far more shared variance (41%) than unique variance (24% for QoL, 6% for wellness), suggesting these models are, in fact, related. These results suggest a few notable implications. First, a counseling model of wellness is consistent with biopsychosocial assessment models commonly utilized in medical practice. As it is, FFWEL-A may be worthy of implementation for clinical intervention with cancer survivors. More importantly, when used in tandem, these models may provide a more robust assessment of cancer survivors' well-being and may account for a broader range of significant psychosocial issues relevant to clinical intervention.

Importantly, the FFWEL-A contributed unique variance to the model, thereby providing previously unaccounted for insight into depression symptoms among cancer survivors. The Coping Self subscale of the FFWEL-A provided unique variance to the combined model and was negatively related to depression scores. As described by the authors, “the Coping Self ... is composed of elements that regulate our responses to life events and provide a means for transcending their negative affects” (Myers & Sweeney, 2005b, p. 8). Coping styles, then, may be a powerful predictor of the mental well-being of cancer survivors, and a key intervention point for care providers. The importance of these findings was further highlighted by results in a larger sequential explanatory mixed-methods analysis (Sylvestro, 2018). Eight cancer survivors from the quantitative analysis participated in semi-structured qualitative interviews to further explore factors impacting their biopsychosocial well-being. Psychosocial coping strategies emerged as one of seven domains in the analysis and included three general categories (problem-focused coping, meaning-focused coping, & emotion-focused coping; Sylvestro, 2018). Given the importance of coping strategies and their link to psychosocial outcomes in the cancer experience has been well documented (e.g., Dev et al., 2019; Kim et al., 2010; Zucca et al., 2010), biopsychosocial well-being models utilized with cancer survivor populations would benefit from the inclusion of coping-related items.

Implications

The findings of this study, considered in context of current movements in health research and practice, offer several pointed implications for the counseling profession. Given projections of 20 million cancer survivors in the United States by 2030 (Miller et al., 2019), and the high incidence of mental health needs associated with cancer survivorship (e.g., Brandenbarg et al., 2019; Niedzwiedz et al., 2019), the counseling community would do well to bolster its efforts to provide services to this particular population.

Further refinement of wellness assessment and intervention models for cancer survivors are but one element of this process. The results of the current study indicate that the Indivisible Self model of wellness, though statistically significant, may have less utility in capturing the physical well-being needs of cancer survivors than more disease-specific models of QoL, such as the FACT-G. On one hand, the wellness model was found to provide a uniquely significant construct (coping styles) for predicting well-being that is closely aligned with the realm of counseling and psychology. However, the model lacks a specific biophysical context and does not fully capture the unique health experiences of cancer survivors. Similarly, the impact of physical health effects on holistic well-being is drastically underrepresented in counseling literature. Though the authors of the WoW and Indivisible Self models of wellness intentionally included multidisciplinary health concepts (Myers & Sweeney, 2004; Sweeney & Witmer, 1991; Witmer & Sweeney, 1992), subsequent integration of biomedical constructs and utilization of literature from a variety of health-related fields such as oncology, epidemiology, and public health can prove meaningful to the continued evolution of counseling wellness models.

Additionally, little is known about how the Indivisible Self model performs cross-culturally among cancer survivors. Validation of culturally responsive biopsychosocial models in cancer care is crucial, as disparities in care of racial and ethnic minority cancer survivors has been well documented (American Cancer Society, 2020). Finally, it is worth noting that neither model explored in this study included items specific to either the financial burden of cancer, or post-traumatic growth. The financial burden of cancer has been noted as a significant factor in the wellbeing of cancer survivors, particularly among lower-income populations (American Cancer Society, 2020; National Cancer Institute, 2020; Niedzwiedz et al., 2019). Similarly, the inclusion of positive health outcomes such as posttraumatic growth is often ignored in cancer-related assessment, despite continued evidence of its salience to the cancer experience (Costa et al., 2016; Syrjala & Yi, 2016). As noted by Cook et al. (2016) assessment models of biopsychosocial well-being, including QoL and wellness, often fail to emphasize factors relevant to well-being of specific populations, and should not be used as a proverbial magic bullet in determining wellness needs of clinical populations. Regardless, refining wellness assessments for cancer survivors in these ways is essential to improving care and identifying appropriate counseling interventions.

Along with efforts to refine wellness models for use with cancer survivors, it is also critical counselors examine opportunities and challenges for the profession within an integrated care context. Multiple counselor researchers have begun to explore the fitness of counseling within the developing world of integrated care. A 2018 meta-analysis on the effectiveness of mental health and behavioral providers in integrated care settings found that, overall, the inclusion of mental health and behavioral health services within primary care settings is more effective in improving patient wellbeing than traditional primary care strategies of medication and referral (Lenz, et al.). While less is known about the role of counselors in cancer-specific integrated care settings, others have noted the fitness of the wellness-oriented counseling approaches in accomplishing the goals of integrated cancer care (Wood et al., 2020). Limited evidence also suggests the utility of counseling wellness and assessment models for guiding group interventions of cancer survivors in integrated care settings (Shannonhouse et al., 2014). While counselors working in integrated settings often face a steep learning curve in adapting to medical concepts and medical culture, they are also thought to strengthen the success of integrated

approaches through mental health advocacy and their commitment to a holistic biopsychosocial approach (Glueck, 2015; Goldsmith & Kurpius, 2015).

Nevertheless, all practicing mental health counselors should expect to work with numerous cancer survivors in their lifetime and should be prepared to assess and intervene with this population. The findings in this study support the use of the Indivisible Self model of wellness as a starting point in this endeavor. As previously mentioned, cancer survivors may experience a broad range of psychosocial effects to their wellbeing, including but not limited to common mental health disorders, fears of cancer recurrence, changes to social and family structures, physical impairment, and posttraumatic growth (National Cancer Institute, 2020; Syrjala & Yi, 2016). A counseling wellness paradigm provides a robust framework for conceptualizing and navigating client's wellness goals (Ohrt et al., 2018), and may be particularly beneficial for cancer survivors as they navigate a myriad of cancer-related effects to their wellbeing.

Traditional counseling may also provide added benefit to cancer survivors, as the majority of mental health providers in integrated care settings are expected to provide brief interventions that prioritize the goals of physical and functional wellness (Glueck, 2015; Goldsmith & Kurpius, 2015; Kelly & Coons, 2012). Individuals living with cancer are routinely prompted to search for new existential meaning, and may benefit from the ongoing support and meaning-making approaches that a traditional counseling context can provide (Boerger-Knowles & Ridley, 2014). Cancer survivors may also prefer individual counseling to more traditional medication management for mental health disorders (Wu et al., 2014). Further research is needed to clarify the benefit of traditional counseling approaches with this population.

This study also adds to the growing conversation on the need for increased counselor training on chronic illness and physical health issues as they relate to holistic wellbeing. As highlighted by Barden et al. (2015), "Few counselor training programs offer wellness courses or training on how to ethically and competently integrate physical and mental health issues when working with clients" (p. 152). Counselors working in integrated care settings have also noted the need for increased training on behavioral lifestyle issues and chronic disease management (Glueck, 2015; Goldsmith & Kurpius, 2015). Despite the historical emphasis on wellness and holistic care within the counseling profession (Ohrt et al., 2018), and a growing need for mental health providers to participate in the development and implementation of integrated care (Miller, 2014), counselor training programs have lagged in their commitment to a robust biopsychosocial wellness paradigm. In order to prepare counselors to work with cancer survivors, as well as other health populations, counselor education programs must prioritize the inclusion of competencies that address intersections of biological and psychosocial wellness (see Barden et al., 2015). Additionally, counselor training must also extend to competencies related to working in integrated care. In the recently revised *AMHCA Standards for the Practice of Clinical Mental Health Counseling*, the American Mental Health Counselors Association (2020) has identified Integrated Behavioral Health Counseling (standard V.F) as a necessary competency area for mental health counselors. Counselor educators are tasked with being advocates and ambassadors in the emerging era of integrated care and are encouraged to utilize these standards (see American Mental Health Counselors Association, 2020) for the benefit of all client populations, including cancer survivors.

Limitations

As with all studies, the current study had several limitations. The study was focused on understanding significant psychosocial factors that impact holistic well-being of cancer survivors. Studies examining well-being or quality of life, and related multi-factor concepts of health that include subjective and objective dimensions, are known to be intrinsically limited in terms of generalizability, as these constructs are considered static traits and known to vary greatly by individual (Moons et al., 2006; Sirgy, 2012). Nevertheless, refinement of biopsychosocial assessment models to capture psychosocial needs within oncological care remains a top research priority (Adler et al., 2008; Grassi et al., 2015). Generalizability of the study findings may be limited according to the cultural representation of the sample, as 81% of participants identified as White. Findings from the current study may not adequately translate to the well-being experiences of minority cancer survivors.

Quantitative results in this study may also be limited by the chosen assessment measures. The Indivisible Self, as measured by the FFWEL-A, has not been extensively utilized in health populations, and prior to this study, has only been utilized in one other study on cancer survivorship (see Shannonhouse et al., 2014). The FACT-G is considered among the most valid QoL measures utilized in oncology research, and while it is commonly used in studies of cancer survivors (e.g., Ashing-giwa et al., 2008; O'leary et al., 2007), it was designed for use among active-status cancer patients and may be less valid for measuring QoL among cancer survivors in remission. Furthermore, the disciplinary lens and structures of the chosen assessments may have impacted the quantitative findings, whereas the FFWEL-A was created from a counseling perspective and includes a high number of items, the FACT-G and the CES-D-10 were both created from a medical perspective and were intended as brief assessment measures. Similarities between the structures of the FACT-G and the CES-D-10 may have contributed to higher rates of shared variance between the respective measures.

Conclusion

Myers et al. (2000) defined wellness as “a way of life oriented toward optimal health and well-being in which body, mind, and spirit are integrated by the individual to live life more fully within the human and natural community” (p. 252), a concept that has far-reaching implications for assessment, research, and clinical practice. Holistic wellness models offer a means of structured assessment and potential intervention to enhance the holistic well-being of persons experiencing disabling medical conditions (Myers & Sweeney, 2005a, 2008), including cancer (cf. Shannonhouse et al., 2014). The well-being and mental health needs of cancer survivors is critical and growing research priority (Niedziedz et al., 2019), and provides counselors, counseling researchers, and counselor educators a prime opportunity to demonstrate the value of a wellness paradigm.

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