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Resilience, Mindfulness, Anxiety, and Depression Within a Dual-Continua Model of Mental Health Approach

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Mental health research is often focused on alleviating psychological distress rather than increasing well-being. This study approached mental health from a dual-continua model (DCM) framework, which allows for distress and well-being to co-occur. The aims of the present study were to expand upon DCM literature by examining differences in psychological well-being indicators among a broad adult sample with varying levels of depression and/or anxiety symptoms. Our sample was comprised of adults in the United States (n = 1,170) who reported different levels of anxiety, depression, mindfulness, resilience, and satisfaction with life. Participants who reported high anxiety symptoms, high depression symptoms, both anxiety and depression symptoms, or neither were grouped by their level of reported life satisfaction (high or low). We predicted that groups with higher life satisfaction would report higher levels of resilience and trait mindfulness than groups with lower life satisfaction, irrespective of higher levels of anxiety and/or depression, consistent with a DCM of mental health. Our results indicated that higher life satisfaction was associated with higher levels of resilience in all groups except for the high depression with low anxiety group. Higher levels of life satisfaction were also associated with higher trait mindfulness in all but the high anxiety with low depression group. Implications for mental health treatment and prevention are discussed.

Keywords: Dual-continua model (DCM) of mental health, anxiety, depression, well-being, resilience, life satisfaction, mindfulness

For over two decades, there has been increased interest in expanding the unidimensional model of mental health (Arslan & Allen, 2020; Diener, 2000; Greenspoon & Saklofske, 2001), which proposes that well-being and psychological distress exist on opposite ends of a single continuum (Keyes, 2005). In response to a need for a more holistic and expanded view of mental health that allows for psychological well-being to co-occur with psychological distress, the dual-continua model (DCM) of mental health was created (Greenspoon & Saklofske, 2001). The DCM proposes that psychological distress and psychological well-being are separate, but correlated, dimensions (Kirby et al., 2022). According to the DCM, focusing on psychological distress without consideration of co-occurring psychological well-being fails to capture a representative view of mental health and poses limitations clinically (Elkins, 2007).

In their initial study, Greenspoon and Saklofske (2001) analyzed survey data from a sample of 407 children in third through sixth grade and demonstrated that children could report low or elevated levels of well-being, and low or high levels of psychological distress simultaneously, supporting the DCM. The DCM has since expanded from children to other age groups such as adolescents (e.g., Suldo & Schaffer, 2008), and college students (e.g., Renshaw & Cohen, 2014). More recently, the DCM framework has been examined among adults reporting higher levels of anxiety or depression symptoms (e.g., Carver et al., 2021; Xiao et al., 2021), including clinical diagnoses involving these symptoms (Franken et al., 2018).

Carver and colleagues (2021) examined the DCM within a sample of highly anxious college students in the United States (U.S.) who also reported low levels of anhedonic depression and were grouped based on high or low levels of life satisfaction. They found that students who reported high levels of anxiety and high life satisfaction also reported higher levels of hope, grit, gratitude, self-focused positive rumination, and savoring of positive emotions when compared to students who reported high levels of anxiety and low levels of life satisfaction. Xiao and colleagues (2021) applied the DCM with a sample of Chinese college students who reported varying levels of depression and life satisfaction. They found that students who reported higher levels of depression along with high life satisfaction also reported higher levels of flourishing (e.g., competence, engagement, meaning and purpose, optimism, self-acceptance, supportive relationships) than students who reported high levels of depression and low life satisfaction. It should be noted that Xiao and colleagues (2021) reasoned that flourishing had been incorporated into evaluations of subjective psychological well-being and positive mental health but had not been applied to mental health assessments prior to their study.

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To fully conceptualize the DCM, understanding psychological distress and psychological well-being, and more specifically, the specific indicators of each used for this study is important. Broadly, psychological distress can be conceptualized as a multidimensional experience of subjective uncomfortable or unpleasant feelings, often in response to external stressors (Carrozzino et al., 2022). Psychological distress may occur in the form of anxiety and depression symptoms, and anxiety and depression symptoms are relatively common in adults (Sass et al., 2019). In addition, increases in anxiety and depression symptoms occurred in adults during the COVID-19 pandemic (Twenge & Joiner, 2020). Anxiety symptoms can be described using two dimensions: anxious apprehension, characterized by worry, and anxious arousal, characterized by somatic symptoms such as sweaty palms and increased heart rate (e.g., Sass et al., 2010). Key Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM–5; American Psychiatric Association, 2013) depression symptoms include sad mood and/or a lack of pleasure (anhedonia) from activities that are usually enjoyed. Anxiety and depression symptoms can occur in isolation of one another ("pure" anxiety and "pure" depression) but do often co-occur (comorbid anxiety and depression; Kaiser et al., 2021). Relationships between anxiety, depression, and well-being are under-studied and accounting for whether anxiety and depression symptoms occur in isolation or are co-occurring is not always reported in DCM studies (Carver et al., 2021; Xiao et al., 2021).

Psychological well-being is a complex, multidimensional construct that includes physical health, life satisfaction, social and occupational functioning, experiences of life challenges, and affect (Dodge et al., 2012). There is some debate about which dimensions are associated with psychological well-being in existing literature. Variance in findings across different samples suggests the different dimensions of psychological well-being could share a common latent factor but also represent distinct constructs, with more research being needed in this area (Trudel-Fitzgerald et al., 2021). Psychological well-being has been associated with numerous subjective and physiological indicators (e.g., positive affect, optimism, life satisfaction), with some of these dimensions being more stable over time (i.e., life satisfaction) and some more transient (i.e., state positive affect; Warr, 2012).

Two indicators of psychological well-being that appear to be understudied in DCM literature are resilience and mindfulness, both of which are included in the present study. In brief, resilience has been defined as the ability to adapt to difficult or changing circumstances (Arslan & Wong, 2024; Jovanović et al., 2020). Resilience has been identified as an indicator of psychological well-being and is associated with positive mental health outcomes, particularly during times of adversity (Davydov et al., 2010; Wang & Zhang, 2012). Having an in-depth understanding of how resilience functions within the DCM framework seems particularly important for times in which adversity is paramount. Mindfulness has been described as nonjudgmental awareness of one's experience in the present moment (e.g., Bishop et al., 2004; Kabat-Zinn, 2003). Trait mindfulness specifically, has been described as the stable tendency to notice and maintain attention on experiences in the present moment while having an open and nonjudgmental attitude (Brown & Ryan, 2003). Though there is some debate as to whether mindfulness is considered an indicator of psychological well-being, studies have associated mindfulness with other domains of psychological well-being, such as higher levels of positive affect, life satisfaction, vitality, and emotion regulation (Keng et al., 2011).

Present Study

The present study built on previous DCM findings by applying the DCM framework to a broad sample of adults and carefully accounting for the presence or absence of anxiety and/or depression symptoms as indicators of psychological distress (e.g., Carver et al., 2021; Xiao et al., 2021). We used life satisfaction, resilience, and mindfulness as indicators of psychological well-being. As noted previously, resilience and mindfulness were specifically chosen as they appeared to be understudied in DCM studies. Our aim was to expand on previous findings (Carver et al., 2021; Xiao et al., 2021) in a sample of U.S. adults grouped into four self-reported symptom categories: high levels of anxiety with low co-occurring depression ("pure" anxiety), high levels of depression with low co-occurring anxiety ("pure" depression), combined high levels of anxiety and depression symptoms (comorbid anxiety and depression), and combined low levels of anxiety and depression symptoms. A grouping strategy in which anxiety and depression symptoms are carefully controlled and examined separately and together has not yet been explored in DCM literature to our knowledge. This is important as these symptoms can occur together and in isolation and may have different relationships with well-being indicators (e.g., Kaiser et al., 2021). We then categorized each of the four symptom groups further into high or low life satisfaction levels (see Table 1 for a visual representation of these groups with averages and standard deviations) following previous dual-continua studies (e.g., Carver et al., 2021). We hypothesized that individuals who reported higher levels of life satisfaction, irrespective of the presence or absence of anxiety and/or depression symptoms, would also report higher levels of resilience and trait mindfulness, consistent with the DCM.

Method

Participants and Procedure

The data collection protocol was approved by the University of Texas at Tyler's Institutional Review Board (IRB-FY2020-83). Participants were recruited through social media outlets (e.g., research assistants sharing approved recruitment links and QR codes to the survey via Twitter and Facebook). After providing informed consent, N = 1,388 participants who were 18 years of age or older, said they resided in the United States, and could read and understand the English language began the survey via Qualtrics (Qualtrics, 2005) between June 22 and July 16, 2020. It is important to note that data for this study was collected during the initial months of the COVID-19 pandemic (in June and July of 2020), when anxiety and depression levels were generally higher than pre-pandemic levels (e.g., Lakhan et al., 2020). Approximately 15.7% (n = 218) of the participants did not complete the entire survey. Approximately 12.8% (n = 177) stopped participating while answering a series of items related to COVID-19 experiences. Up to an additional 3.0% (n = 41) stopped participating during one or more of the self-report measures. Overall, total response for each self-report measure ranged from n = 1,170–1,207. We included participants who completed all the measures and grouped them by their respective

Patient Health Questionnaire-4 (PHQ-4; Kroenke et al., 2009) and Satisfaction with Life Survey (SWLS; Diener et al., 1985) responses, yielding a final sample of n = 1,170. Participants were predominantly female (*n* = 718, 61.4%), White (*n* = 678, 57.9%), and between the ages of 18–83 years old (*M* = 30.1, *SD* = 10.3). Most participants either reported being married (*n* = 598, 51.1%) or never married (*n* = 479, 40.9%). They also reported a range of highest education, with the majority reporting some college education (*n* = 431, 36.9%) or a college degree (*n* = 350, 29.9%).

Measures

The online Qualtrics survey included basic demographic questions as well as questions about experiences related to the COVID-19 pandemic such as if someone had to quarantine due to the pandemic (*n* = 298, 25.5% responded yes), if someone was tested for COVID-19 (*n* = 473, 40.4%), had contracted COVID-19 (*n* = 36, 3.1%), and their degree of adherence to safety precautions (e.g., social distancing, wearing a mask). Though not the focus of this project, the survey also included measures of COVID-related stress (Taylor et al., 2020), perceived discrimination (Williams et al., 1997), and coping (Carver, 1997). These additional measures were included in the survey for a separate study and are not discussed further in this paper.

The Patient Health Questionnaire-4 (PHQ-4). The PHQ-4 (Kroenke et al., 2009) is a 4-item self-report scale that assesses core symptoms of anxiety and depression that have occurred within the past 2 weeks. Two items each screen for depression and anxiety. Items are rated on a 4-point Likert scale ranging from 0 (not at all) to 3 (nearly every day). Anxiety and depression symptoms can be examined together with a total score of all items or can be assessed separately by examining the anxiety and depression subscales. Kroenke et al. (2009) suggested that the following combined scores indicate symptom elevation: mild (3-5), moderate (6-8), and severe (9-12). When examining anxiety and depression separately from each other, the authors suggested that scores ≥ 3 within each of the anxiety and depression symptom subscales serve as appropriate cut-points to indicate clinical significance. For example, a score of ≥ 3 on the depression subscale has demonstrated an 83% sensitivity and 90% specificity for major depressive disorder and a score of ≥ 3 on the anxiety subscale has demonstrated an 88% sensitivity and 83% specificity for generalized anxiety disorder (Kroenke et al., 2007). The PHQ-4 has demonstrated good reliability in the past (Löwe et al., 2010) and in the present study (α = 0.80).

Brief Resilient Coping Scale (BRCS). The BRCS (Sinclair & Wallston, 2004) is a 4-item scale that measures how individuals cope with stress and difficulties. The participants responded to four items using a 5-point Likert scale ranging from 1 (does not describe me at all) to 5 (describes me very well). Item responses were summed and compared to normative cut-offs: 4-13 (low resilient copers), 14-16 (medium resilient copers), 17-20 (high resilient copers). The BRCS has demonstrated acceptable internal consistency with Cronbach's alpha between 0.76 to 0.78 in previous research (Kocalevent et al., 2017; Sinclair & Wallston, 2004), and fair reliability in the present study (α = .69). See Table 1 for descriptive statistics for the BRCS for each group.

Satisfaction with Life Survey (SWLS). The SWLS (Diener et al., 1985) is a 5-item scale designed to assess an individual's overall satisfaction with life. Each item is rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The scores were summed up and compared to normative cut-offs (Pavot & Diener, 2008): extremely dissatisfied (5-9), dissatisfied (10-14), slightly dissatisfied (15-19), neutral (20), slightly satisfied (21-25), satisfied (26-30), extremely satisfied (31-35). The total sample size for the SWLS, after exclusion of cases was N = 1,170. The SWLS has demonstrated good reliability and validity in previous studies (Pavot et al., 1991; Yun et al., 2019) and demonstrated good reliability in the present study (α = .86).

The Cognitive and Affective Mindfulness Scale-Revised (CAMS-R). The CAMS-R (Feldman et al., 2007) is a 12-item measure designed to capture trait mindfulness. Participants rate each item on a Likert scale from 1 (rarely/not at all) to 4 (almost always). After appropriate reverse-scoring, participant scores were summed. Higher values reflect greater mindful qualities. The CAMS-R has demonstrated acceptable reliability in previous studies (Feldman et al., 2007) and acceptable reliability in this study (α = .74). See Table 1 for descriptive statistics for the CAMS-R for each group.

Grouping and Analysis Strategy

All analyses were performed using IBM SPSS Statistics (Version 24) software. Consistent with the methodology of previous dual continua studies (e.g., Carver et al., 2021; Eklund et al., 2011; Lyons et al., 2012; Renshaw & Cohen, 2014), categorical grouping variables were created using scores from the PHQ-4 and SWLS to create groups based on anxiety, depression, and life satisfaction levels. Eight total groups were created using scores reported on the PHQ-4 and SWLS using the recommended cut-off scores indicated above. Groups were identified as high pure depression (i.e., PHQ-4 depression subscale score of ≥ 3 and anxiety subscale score of < 3), high pure anxiety (i.e., PHQ-4 anxiety subscale score of ≥ 3 and depression subscale score of < 3), high on both anxiety and depression (comorbid; PHQ-4 score of ≥ 3 on both anxiety and depression subscales), or low on both anxiety and depression ("healthy;" PHQ-4 score of < 3 on both anxiety and depression subscales). These four groups were crossed with high or low life satisfaction (i.e., SWLS score of ≥ 20 or < 20, respectively). See Table 1 for sample sizes of each group. This grouping strategy is in line with the DCM framework and other studies that have applied this grouping strategy to an adult sample experiencing varying levels of psychological distress and life satisfaction (e.g., Carver et al., 2021; Wang et al., 2011).

Following the prediction that groups with higher levels of life satisfaction would report higher levels of psychological well-being irrespective of psychological distress levels, a Group multivariate analysis of variance (MANOVA) was planned with well-being indicators (BRCS and CAMS-R) as dependent variables (DVs) to assess for Group differences. Prior to performing the MANOVA, we performed a series of bivariate Pearson correlations between all dependent variables. Dependent variables were moderately correlated with each other, as is desirable for MANOVA (Meyers et al., 2006; see Table 2). If results of the MANOVA supported our hypothesis, our analysis plan included conducting four univariate ANOVAs to examine mindfulness and resilience as dependent variables separately.

Table 1. Means and standard deviations by group

	High Anxiety Low Depression				High Depression Low Anxiety				High Depression High Anxiety (Comorbid)				Low Depression Low Anxiety			
	High SWLS *n* = 74		Low SWLS *n* = 98		High SWLS *n* = 65		Low SWLS *n* = 68		High SWLS *n* = 218		Low SWLS *n* = 209		High SWLS *n* = 320		Low SWLS *n* = 118	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
BRCS	14.16	2.59	12.43	2.31	13.00	1.98	12.56	2.57	13.21	2.22	12.53	1.88	14.76	2.74	12.40	3.16
CAMS-R	31.01	4.59	29.52	3.32	31.54	4.24	29.56	3.07	30.23	3.34	29.11	3.59	33.68	5.33	30.02	3.78

Note. SWLS is an abbreviation for *Satisfaction with Life Survey*, BRCS is an abbreviation for *Brief Resilient Coping Scale*, and CAMS-R is an abbreviation for *The Cognitive and Affective Mindfulness Scale-Revised.*

We elected to use a Bonferroni-adjusted alpha to reduce the risk of a type I error.

Results

As predicted, an omnibus Group effect was evident from the MANOVA, Pillai's Trace = 0.21, $F(14, 2324) = 19.28$, $p < .001$, partial $\eta^2 = 0.10$. Following the significant MANOVA results, four univariate ANOVAs followed up the Group effect for resilience and mindfulness, separately, with the *p*-values reported below to reduce the risk of type I error.

Table 2. Pearson's correlations by measure

	1	2	3	4
1. PHQ-4	–			
2. SWLS	-.38**	–		
3. BRCS	-.17**	.43**	–	
4. CAMS-R	-.41**	.45**	. 43**	–

Note. **Indicates correlation is significant at $p < .01$ level (2-tailed). PHQ-4 = Patient Health Questionnaire; SWLS = Satisfaction with Life Survey; BRCS = Brief Resilience Coping Scale; CAMS-R = Cognitive and Affective Mindfulness Scale-Revised.

Resilience

Following the hypothesis that higher life satisfaction would be associated with higher levels of resilience regardless of symptom level within each of the four symptom-defined groups, univariate ANOVAs for the BRCS showed that consistent with expectation, within the pure anxiety $F(1, 170) = 21.37$, $p < .001$, comorbid $F(1, 425) = 11.64$, $p = .001$, and healthy groups $F(1, 436) = 7.53$, $p < .001$, those who reported higher life satisfaction also reported higher levels of resilience. Inconsistent with expectation, within the high depression group, resilience levels did not differ as a function of life satisfaction, $F(1, 131) = 6.47$, $p = .271$.

Trait Mindfulness

Following the hypothesis that higher life satisfaction would be associated with higher levels of trait mindfulness regardless of symptom level within each of the four symptom-defined groups, univariate ANOVAs for the CAMS-R showed that consistent with expectation, within the pure depression $F(1, 131) = 9.59$, $p = .002$, comorbid $F(1, 425) = 11.13$, $p = .001$, and healthy groups $F(1, 436) = 47.10$, $p < .001$, those who reported higher life satisfaction reported higher levels of trait mindfulness. Trait mindfulness levels were not significantly different as a function of life satisfaction in the pure anxiety group, though there was a trend in the predicted direction, $F(1, 170) = 6.14$, $p = .014$ (see Tables 1 and 3).

Discussion

The present study used a DCM framework to examine the co-occurrence of anxiety, depression, resilience, and mindfulness, which expands upon previous DCM findings (Carver et al., 2021; Xiao et al., 2021). This contrasts with the unipolar model of mental health, which assumes high levels of anxiety and depression are associated with low levels of life satisfaction and resilience. Our primary aim was to explore whether adults reporting higher levels of life satisfaction would also report higher levels of resilience and trait mindfulness, irrespective of anxiety or depression symptom levels. This prediction was partially supported.

With respect to resilience, as predicted, individuals reporting high levels of life satisfaction and either high levels of pure anxiety, high levels of co-occurring anxiety and depression, or low levels of co-occurring anxiety and depression all reported higher levels of resilience than those reporting lower life satisfaction. However, high levels of pure depression were not associated with higher levels of resilience, consistent with a unipolar model of mental health. Previous studies have suggested that resilience can be lower among individuals with high levels of active depression symptoms (Pardeller et al., 2020). It has also been proposed that resilience mediates the association between childhood trauma and depression (Arslan, 2016; Watters et al., 2023). Future DCM studies should consider accounting for childhood trauma when interpreting results as it may play a role in the relationship between resilience and depression.

It is noteworthy that there are often methodological differences in grouping strategies when applying the DCM framework. To our knowledge, studies using the DCM framework with an adult sample have not yet examined depression in a way that accounted for the absence or presence of comorbid anxiety symptoms. For example, Xiao et al. (2021) reported that individuals with high or low depression could simultaneously experience high levels of psychological well-being indicators (e.g., flourishing), but did not appear to account for the presence or absence of co-occurring anxiety symptoms in their grouping methodology. Similarly, psychological well-being indicators such as flourishing and resilience may not uniformly be related to high levels of depression and life satisfaction, which is an area for further research exploration (Trudel-Fitzgerald et al., 2021). With respect to trait mindfulness, as predicted, within the pure depression, comorbid, and healthy groups, those who reported higher life satisfaction reported higher levels of trait mindfulness. These results are consistent with the DCM and suggest that individuals with high levels of depression alone or combined with high levels of anxiety can show higher levels of trait

Table 3. Univariate ANOVA results by group

Groups	*F*	df_1, df_2	*p*	Partial η^2
	Resilience (BRCS)			
Pure Anxiety	21.37	1, 170	< .001	.12
Pure Depression	6.47	1, 131	.271	.01
Comorbid	11.64	1, 425	.001	.03
Healthy	59.08	1, 436	< .001	.12
	Trait Mindfulness (CAMS-R)			
Pure Anxiety	6.14	1, 170	.014	.04
Pure Depression	9.59	1, 131	.002	.07
Comorbid	11.13	1, 425	.001	.03
Healthy	47.10	1, 436	< .001	.10

Note. Suggested norms for partial η^2 as a measure of effect size: small = 0.01, medium = 0.06, large = 0.14 (Field, 2005). A Bonferroni correction was applied to all *p*-values (an alpha of .05 divided by the 4 tests conducted required a 0.0125 to achieve statistical significance).

mindfulness as a function of higher life satisfaction. These results conceptually replicate and extend the findings of Xiao et al. (2021) in a broader adult sample and with a mindfulness rather than flourishing measure. In addition, the results from the pure depression group are in line with research that has supported the benefits of mindfulness with depression (e.g., Segal et al., 2013). Though it was a trend in the predicted direction that did not survive the Bonferroni alpha correction for multiple comparisons, trait mindfulness was not higher as a function of higher life satisfaction in the pure anxiety group. This result should be treated tentatively pending replication due to the use of a conservative Bonferroni-corrected p-value in this study.

It is notable that resilience and trait mindfulness were higher among those reporting higher levels of life satisfaction in the comorbid group. This finding is novel, being the first DCM study to our knowledge to include a carefully defined comorbid group (i.e., high levels of depression and high levels of anxiety). Other researchers have examined the DCM among individuals with pure anxiety (e.g., Carver et al., 2021), emotional symptoms in general (e.g., Eklund et al., 2011), or depression without considering comorbid anxiety symptoms (e.g., Xiao et al., 2021). It has been suggested that there are unique symptomology patterns associated with comorbid depression and anxiety when compared to isolated anxiety and isolated depression (Chen, 2022), which would indicate that it is important to consider how co-occurring anxiety and depression symptoms relate to psychological well-being indicators. Present findings suggest that both resilience and mindfulness are associated with life satisfaction among adults with co-occurring depression and anxiety. This highlights the importance of accounting for the experience of anxiety, depression, or combined symptoms when exploring psychological well-being indicators in a DCM framework, as different patterns of results can emerge in individuals with high levels of pure anxiety symptoms, pure depression symptoms, and co-occurring symptoms.

These results add to the growing body of DCM literature that has demonstrated the importance of assessing for both indicators of psychological distress and psychological well-being when examining mental health. Assessing for and understanding well-being indicators that may co-exist with psychological distress allows clinicians and researchers to formulate a well-rounded case conceptualization. This study suggests that resilience is important to consider in relation to life satisfaction for individuals who are experiencing anxiety and comorbid anxiety and depression, as higher levels of life satisfaction, and not anxiety and/or depression symptoms only, were associated with higher levels of mindfulness in most symptom groups and in the group with low symptoms.

Limitations

Self-report data were collected for this study which inherently has limitations (Lucas, 2018). Though the PHQ-4 has demonstrated reliability and validity in capturing anxiety and depression symptoms among different populations (e.g., Löwe et al., 2010), there are more comprehensive instruments that can be used in conjunction with or in lieu of the PHQ-4. Future studies should consider clinical interviews or more comprehensive measures such as the Patient Health Questionnaire- 9 item (PHQ-9; Kroenke et al., 2001), Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995), Beck Depression Inventory-II (BDI-II; Beck et al., 1996), or Beck Anxiety Inventory (BAI; Beck et al., 1988). Similarly, this study followed a cross-sectional design, meaning directional or causal relationships cannot be derived (Setia, 2016). Future studies may benefit from considering a longitudinal design. Additionally, the present sample was recruited entirely from social media outlets, which is not representative of the United States' population. Not all individuals use these social media platforms or have internet access. Though some researchers have proposed that the "digital divide" has narrowed over time, access to the internet and use of social media can be impacted by variables such as homelessness and socio-economic status (Guadagno et al., 2013). Finally, while this can be considered a strength and a limitation, present data were collected during the early months of the COVID-19 pandemic. Thus, while partially consistent with previous studies (e.g., Carver et al. 2021, Xiao et al. 2021), present findings may deviate from subsequent studies to the extent that psychological distress and well-being operated differently during the early phase of the COVID-19 pandemic.

Conclusions

Implications of these results include forming a better understanding of how anxiety and depression co-occur with well-being indicators. Expanding upon the DCM provides a more representative view of mental health by accounting for both psychological distress and psychological well-being. This study builds upon DCM literature, which can offer mental health professionals and researchers a more comprehensive insight into better supporting individuals presenting with anxiety and/or depressive symptoms.

Intervention implications of the present study include screening for well-being indicators in addition to screening for indicators of psychological distress. For example, a typical focus for anxiety treatment is reduction of anxiety symptoms (e.g., Bandelow et al., 2017), but it may be equally important to screen for psychological well-being indicators such as life satisfaction. Life satisfaction is correlated with other psychological well-being indicators of importance to mental health, such as resilience and trait mindfulness, investigated in the present study. With a more comprehensive view of each person, clinicians and researchers could then inform their approach by using interventions which focus on increasing life satisfaction and other well-being indicators rather than solely focusing on reducing psychological distress.

This study adds to DCM literature in several ways. First, the DCM was applied with a larger sample of U.S. adults with significant levels of self-reported depression and/or anxiety symptoms than has been done previously to our knowledge (e.g., Carver et al., 2021; Franken et al., 2018; Xiao et al., 2021). Second, these data were collected during a global pandemic, allowing for comparisons to be made between present results and subsequent studies that may be conducted outside of a pandemic. Third, present data suggest that depending on whether a person has high levels of anxiety, depression, or both, they have different relationships to psychological well-being indicators, suggesting that continuing to investigate these groups may be of clinical importance in expanding prevention and treatment targets beyond reducing distress to increasing well-being.

Compliance with Ethical Standards

Ethical Standards

All study procedures involving human participants followed institutional and/or national research committee ethical standards and the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This study was approved by The University of Texas at Tyler Institutional Review Board, number IRB-FY2020-83.

Declaration of Conflicting Interests

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Author Contributions

Bridget R. Kennedy was the primary researcher and contributed to all components of the study and manuscript including conceptualization, study design, analysis of results, and discussion of results. Sarah M. Sass oversaw and provided supervision for all components of the research project and manuscript. Jacob S. Avendano and Nicholas E. Sims-Rhodes lead the literature review and assisted with writing sections of the original manuscript. Kyle O'Brien, Joseph Mathew, and Carmen J. W. Chek reviewed and edited the original manuscript. All authors contributed to the final version of the manuscript and approved the final submitted version.

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