

Factorial Invariance of Scores on the Inner Wealth Inventory: A Nationwide Sample of Adults in the United States



The Professional Counselor™
Volume 14, Issue 2, Pages 198–211
<http://tpcjournal.nbcc.org>
© 2024 NBCC, Inc. and Affiliates
doi: 10.15241/mtk.14.2.198

Michael T. Kalkbrenner, Stephanie L. Zackery, Yuxuan Zhao

The Inner Wealth Inventory (IWI) is a screening tool for measuring inner wealth (IW), a wellness-based construct centered on empowering clients to inherently value themselves for being who they are. The initial IWI score validation study was conducted with samples of child welfare professionals. If the IWI's psychometric properties are confirmed with a normative sample of U.S. adults, it has potential to offer professional counselors a tool for measuring IW. The purpose of the present study was to test the factorial invariance and convergent validity evidence of scores on the IWI with a national sample ($N = 840$) of U.S. adults, stratified by the census data for gender, ethnoracial identity, geographic location, and age. The results of factorial invariance and convergent validity testing revealed strong support for the psychometric properties of a sample of U.S. adults' scores on the unidimensional IWI, including equivalence in the meaning of IW across gender, ethnoracial identity, help-seeking history, education, and income in our sample.

Keywords: Inner Wealth Inventory, professional counselors, U.S. adults, psychometric properties, equivalence

Promoting wellness with an emphasis on development and prevention is a core focus in the discipline of professional counseling (Long et al., 2022; Myers, 1992; Myers & Sweeney, 2014). Measuring and promoting wellness is an especially important issue when considering the ubiquitous and comorbid nature of mental and physical health issues among adults living in the United States (World Health Organization [WHO], n.d., 2021). Wellness-based screening tools with rigorously validated scores have a lot of utility in professional counseling settings for monitoring clients' health and wellness (Mason et al., 2023).

Consistent with the wellness orientation of the counseling profession, The Inner Wealth Inventory (IWI) is a wellness-based screening tool for measuring inner wealth, which is defined as:

A growing, accruing, and deepening sense of internal enrichment, which can be enhanced by external or internal self-narrated recognitions, that empowers a person to navigate the world in relation to one's unfolding of who they really are as a person who is meaningful, valued, and who has great things to contribute by being simply true to oneself. (Bennett et al., 2023, p. 123)

The initial IWI score validation study was conducted with two large samples of child welfare professionals (Bennett et al., 2023). The psychometric properties of screening tools can fluctuate over time or with different normative samples (American Educational Research Association [AERA] et al., 2014). Professional counselors have an ethical duty to make sure that screening tools have valid and reliable scores with untested samples to confirm that they are used properly (Lenz et al., 2022; National Board for Certified Counselors, 2023). Accordingly, the primary aim of the present investigation was to test the

Michael T. Kalkbrenner, PhD, NCC, is a full professor at New Mexico State University. Stephanie L. Zackery is a doctoral student at New Mexico State University. Yuxuan Zhao, MEd, is a doctoral candidate at New Mexico State University. Correspondence may be addressed to Michael T. Kalkbrenner, Department of Counseling and Educational Psychology, New Mexico State University, 1780 E. University Ave., Las Cruces, NM 88003, [mkalk001@nmsu.edu](mailto:mcalc001@nmsu.edu).

factorial invariance (equivalence in meaning) of IWI scores with a national sample of U.S. adults. Pending evidence of factorial validity, we will test the convergent validity of IWI scores with established measures.

The State of Mental and Physical Health Among U.S. Adults

The comorbid nature of mental and physical health issues among U.S. adults has increased in severity and complexity since the COVID-19 pandemic (Clarke et al., 2020). Anxiety and depression are two of the most prevalent mental health issues among U.S. adults (National Alliance on Mental Illness [NAMI], 2022). Anxiety and depressive disorders tend to co-occur with a number of physical health issues, including heart disease and pain disorders (Winkler et al., 2015). In fact, heart diseases were the number one killer of adults over 18 in the United States from 1999–2020, with intentional self-harm (including suicide), and essential hypertension also in the top 15 (Centers for Disease Control and Prevention [CDC], n.d.). The pervasive and concurrent nature of anxiety, depression, and non-communicable physical diseases is further exacerbated by sociodemographic factors.

Sociodemographic Factors

Past investigators documented a number of sociodemographic health disparities among adults in the United States by gender identity, ethnoracial identity, help-seeking history, income, and education (Kalkbrenner, 2022; Kobayashi et al., 2021; Patrick et al., 2020). Specifically, differences in power, privilege, and biological factors between females and males contribute to inequitable health outcomes (Pan American Health Organization & WHO, n.d.). Specifically, women reported higher rates of negative health outcomes and reduced health care access than men (Connor et al., 2020; Talevi et al., 2020). In terms of ethnoracial differences, U.S. adults who identified as racial minorities/non-White reported higher rates of both mental health concerns (i.e., any mental, behavioral, or emotional disorder) and physical concerns (e.g., heart disease, hypertension, asthma or emphysema) in comparison with their White counterparts (National Institute of Mental Health, 2023; Ramraj et al., 2016). Similarly, lower levels of education are a risk factor for poorer health conditions (van der Heide et al., 2013). In comparison to individuals with less than a high school degree, those with a degree higher than a high school degree reported better health conditions (Johnson-Lawrence et al., 2017). Moreover, individuals with college degrees reported better health in general in comparison to their counterparts with less education (Lawrence, 2017). Income is another sociodemographic factor that impacts wellness in a multifaceted manner (Beech et al., 2021). For instance, adults living under the poverty line are at risk for food insecurities and exposure to hazardous working environments (Laska et al., 2021; Mikati et al., 2018). Additionally, individuals living with a lower socioeconomic status are more at risk for COVID-19 and its aftermath (J. A. Patel et al., 2020).

Help-seeking history is a relatively new demographic variable in the extant literature that is related to attitudes about counseling and utilization of counseling services (Kalkbrenner, 2023; Cheng et al., 2018). In the context of a demographic variable, help-seeking history is not intended to quantify a latent trait representing a comprehensive representation of one's engagement in counseling. Rather in terms of a demographic variable, help-seeking history is quantified categorically as either 1 (attended at least one session of personal counseling) or 2 (never attended counseling; Cheng et al., 2018). A help-seeking history is a predictor of more positive attitudes about accessing mental health support services (Cheng et al., 2018). However, Kalkbrenner (2023) found that adults in the United States with a help-seeking history reported lower levels of mental and physical health than those without a help-seeking history. Accordingly, help-seeking history and other sociodemographic variables are important considerations when calibrating wellness-based screening tools (e.g., the IWI).

The initial IWI score validation study (Bennett et al., 2023) established the IWI's overall internal structure (exploratory factor analysis [EFA] and confirmatory factor analysis [CFA]) and validity based

on relations with other variables. Factorial invariance testing is an extension of CFA and a method for enhancing the precision of internal structure validity. Factorial invariance testing (psychometric equivalence across subgroups of the larger sample) is an especially important next step in this line of research, as findings in the extant literature (e.g., Kalkbrenner, 2022; Kobayashi et al., 2021; Patrick et al., 2020) have evidenced differences in wellness by sociodemographic variables.

Inner Wealth and the Inner Wealth Inventory

Inner wealth (IW) is a latent construct consisting of internal enrichment and empowerment (Bennett et al., 2023; Glasser & Lowenstein, 2016). This internal enrichment can be furthered by external factors such as meaningful social connections. This enrichment acts by empowering individuals to view themselves as a meaningful and valued person who contributes things to the world by being their true self (Bennett et al., 2023). The Nurtured Heart Approach (NHA) is a framework used to help individuals in growing their IW (Glasser & Lowenstein, 2016). The NHA and IW have been implemented for decades (Glasser & Easley, 1998); however, there is a dearth of empirical NHA studies in the extant literature, as a screening tool for measuring IW (the primary outcome variable in NHA) did not exist until recently. Bennett et al. (2023) developed and validated scores on the IWI with two large samples of child welfare professionals. Bennett et al. (2023) also found that IWI scores were significant negative predictors (with large effect size estimates) of lower levels of burnout and compassion fatigue as well as significantly higher levels of resilience. One of the next steps in this line of research is to test the generalizability of IWI scores with a national sample of U.S. adults, as professional counselors need wellness-based inventories with valid scores.

Purpose Statement and Research Questions

The purpose of the current study was to test the factorial invariance and convergent validity evidence of IWI scores with a national sample of adults in the United States. If scores are validated, the IWI has potential to contribute a wellness-based screening tool with utility for appraising IW in clinical and in research settings. The following research questions (RQs) guided the present study:

Research Question 1: Is the dimensionality of scores on the IWI confirmed with a national sample of adults in the United States?

Research Question 2: Are scores on the IWI from a national sample of adults in the United States invariant across extant sociodemographic variables?

Research Question 3: What is the convergence of scores on the IWI with established measures among a national sample of adults in the United States?

Method

A quantitative cross-sectional research design was employed to answer the research questions. Specifically, we used a psychometric design based on internal structure validity, convergent validity, and internal consistency reliability. This study is part of a larger grant-funded project with an aim to increase the generalizability of scores on wellness-based measures.

Participants and Procedures

Following IRB approval, grant funding was used to hire Qualtrics Sample Services (2023), an online research panel and sampling pool for survey research. Mike Kalkbrenner, the first author, entered the instrumentation into the Qualtrics secure online survey tool and sent the distribution link to the Qualtrics Research Services Account Executive. Working with a team of analysts, the Research Services

Account Executive launched a national sampling procedure (stratified by the U.S. Census Bureau [2022] data for gender, age, ethnoracial identity, and geographic location) among adults living in the United States. The present study included two eligibility criteria. First, prospective participants had to be 18 years old or older. Second, they had to be permanent residents of the United States at the time of data collection. The team of Qualtrics analysts completed a quality check on the data by identifying and removing random response patterns, speeders, and unrealistic answers.

A raw sample of $N = 850$ responses was collected. Seven cases were removed due to $> 20\%$ missing data. Little's Missing Completely at Random (MCAR) test revealed that the data could be treated as MCAR ($X^2 [428] = 454.736, p = .179$); expectation maximization was used to impute missing values. Skewness and kurtosis values were consistent with a normal distribution, standardized z-scores showed zero univariate outliers ($z \geq 3.29$), and Mahalanobis distances exhibited zero multivariate outliers, yielding a final sample of $N = 840$.

Participants ($N = 840$) ranged in age from 18 to 90 ($M = 48; SD = 18$). For gender identity, 52.0% ($n = 437$) self-identified as female, 46.7% ($n = 392$) male, 0.5% ($n = 4$) transgender, 0.4% ($n = 3$) non-binary, and 0.5% ($n = 4$) preferred not to answer. For ethnoracial identity, 1.0% ($n = 8$) self-identified as American Indian or Alaska Native; 10.0% ($n = 88$) Asian or Asian American; 11.5% ($n = 97$) Black or African American; 14.2% ($n = 119$) Hispanic, Latinx, or Spanish origin; 1.4% ($n = 12$) Multiethnic; 0.1% ($n = 1$) Native Hawaiian or Other Pacific Islander; 58.2% ($n = 489$) White or European American; 1.1% ($n = 9$) another race, ethnicity, or origin; 1.8% ($n = 15$) preferred not to answer; and 0.2% ($n = 2$) did not specify their ethnicity. For highest level of education, 37.5% ($n = 315$) reported high school degree, 16.8% ($n = 141$) associate degree, 27.3% ($n = 229$) bachelor's degree, 12.9% ($n = 108$) master's degree, 2.6% ($n = 22$) doctoral degree, 2.3% ($n = 19$) preferred not to answer, and 0.7% ($n = 6$) did not specify their level of education. For help-seeking history, 67.3% ($n = 565$) reported help-seeking history, 31.1% ($n = 267$) had no help-seeking history, and 1.7% ($n = 14$) did not specify their help-seeking history. For income, 27.7% ($n = 233$) self-identified as below the poverty line, 63.5% ($n = 533$) above the poverty line, and 8.8% ($n = 74$) did not specify their income.

Measures

Participants indicated their voluntary informed consent and confirmed that they met the inclusion criteria for participation, at least 18 years old and living in the United States. Next, respondents completed a demographic questionnaire, which included self-report items on age, gender identity, ethnoracial identity, help-seeking history, geographic location, income, and the number of people living in their household. Lastly, participants completed a battery of four screening tools.

Inner Wealth Inventory

The IWI is a screening tool for measuring IW,

a growing, accruing, and deepening sense of internal enrichment, which can be enhanced by external recognitions, that empowers a person to navigate the world in relation to one's unfolding of who they really are as a person who is meaningful, valued, and who has great things to contribute by being simply true to oneself. (Bennett et al., 2023, p. 123)

Participants respond to declarative statements on the following Likert scale: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Not Sure*, 4 = *Agree*, or 5 = *Strongly Agree*. Bennett et al. (2023) validated scores on both a unidimensional and a two-dimensional IWI model via internal structure validity (EFA and CFA) and convergent validity testing with two large samples of child welfare professionals.

The unidimensional version of the IWI is comprised of 13 items, which collectively measure general IW (example item: “I believe I have the power to make positive changes in my day to day life.”). The two-factor version of the IWI includes the 13 items from the unidimensional version plus seven additional items. The first subscale of the two-dimensional model, Internal IW, is comprised of 15 items that appraise intrapersonal elements of IW (example item: “I know how to calm myself down when I am upset.”). The second subscale, External IW, consists of five items, which measure interpersonal components of IW (example item: “I feel comfortable in social situations.”).

Bennett et al. (2023) found strong internal consistency reliability evidence for child welfare professionals’ IWI scores on the unidimensional version ($\alpha = .90$, $\omega = .90$) and the Internal IWI scale ($\alpha = .91$, $\omega = .91$) of the two-dimensional model. Questionable-to-acceptable internal consistency reliability evidence of scores emerged for the External IWI scale ($\alpha = .67$, $\omega = .65$). Consistent with the results of Bennett et al. (2023), we found strong internal consistency reliability evidence of scores with the current sample of adults in the United States on the unidimensional IWI version ($\alpha = .942$, 95% CI [.935, .948]; $\omega = .942$, 95% CI [.935, .949]) and the Inner IW subscale ($\alpha = .947$, 95% CI [.940, .953]; $\omega = .947$, 95% CI [.941, .953]) and questionable-to-acceptable internal consistency reliability evidence of scores on the External IWI subscale ($\alpha = .684$, 95% CI [.640, .722]; $\omega = .645$, 95% CI [.571, .701]).

Mental Health Inventory-5

The Mental Health Inventory-5 (MHI-5) is a screening tool for measuring general mental health in adults (Berwick et al., 1991). Participants respond to five different items concerning their mental health in the past month on the following scale: *none of the time, a little of the time, some of the time, a good bit of the time, most of the time, and all of the time* (Berwick et al., 1991). Past investigators found both internal structure (Rivera-Riquelme et al., 2019) and criterion validity evidence (Yamazaki et al., 2005) of MHI-5 scores. Multiple researchers also found satisfactory internal consistency reliability of MHI-5 scores including Rivera-Riquelme et al. (2019; $\alpha = .71$, $\omega = .78$) as well as Marques et al. (2011; $\alpha = .82$). In the present study, we found acceptable internal consistency reliability evidence of MHI-5 scores ($\alpha = .841$, 95% CI [.819, .860]; $\omega = .833$, 95% CI [.805, .856]).

Generalized Anxiety Disorder-7

The Generalized Anxiety Disorder-7 (GAD-7) is a self-report instrument used for measuring the severity of generalized anxiety disorder symptoms (Spitzer et al., 2006). Each of the seven items ask how often in the last two weeks were participants bothered by different symptoms of anxiety, for example, “feeling nervous, anxious, or on edge” and “being so restless that it is hard to sit still.” Participants respond to each item on a response scale ranging from 0 (*not at all*), 1 (*several days*), 2 (*more than half the days*), or 3 (*nearly every day*). A number of past investigators (e.g., Dhira et al., 2021; Omani-Samani et al., 2018) found construct validity evidence for GAD-7 scores. Scores on the GAD-7 displayed moderate to strong internal consistency reliability estimates, including $\alpha = .91$ (Seo & Park, 2015), $\alpha = .89$ (Dhira et al., 2021), and $\alpha = .85$ (Rutter & Brown, 2017). Among the sample of U.S. adults in the present study, strong internal consistency reliability estimates of GAD-7 scores emerged ($\alpha = .933$, 95% CI [.925, .941]; $\omega = .933$, 95% CI [.924, .940]).

Patient Health Questionnaire-9

The Patient Health Questionnaire-9 (PHQ-9) is a self-report instrument used to assess various depressive symptoms and their severity (Kroenke et al., 2001). Within the PHQ-9, individuals respond to the following prompt: “Over the last 2 weeks, how often have you been bothered by any of the following problems” with order responses ranging from 0 = *not at all*, 1 = *several days*, 2 = *more than half the days*, or 3 = *nearly every day* (Kroenke et al., 2001). The PHQ-9 consists of nine items (example item:

“Feeling down, depressed, or hopeless”; Kalkbrenner, 2022). Maroufizadeh et al. (2019) demonstrated convergent validity evidence of PHQ-9 scores through moderate to strong correlations with measures assessing similar constructs. Internal structure validity of PHQ-9 scores were found through factorial invariance testing by J. S. Patel et al. (2019). Scores on the PHQ-9 have demonstrated moderate to strong internal consistency reliability scores when investigated by a variety of researchers including $\alpha = .90$ (Dosovitsky et al., 2021), $\alpha = .85$ (Maroufizadeh et al., 2019), and $\alpha = .78$ (Dajpratham et al., 2020). Similarly, we found strong internal consistency reliability evidence of PHQ-9 scores with the present sample of U.S. adults ($\alpha = .926$, 95% CI [.917, .934]; $\omega = .927$, 95% CI [.917, .935]).

Data Analysis

Two single-order CFAs were computed to test the dimensionality of a national sample of U.S. adults' scores on the unidimensional and two-dimensional IWI models. We referred to Dimitrov (2012) and Schreiber et al. (2006) for cutoff scores to interpret model fit, including chi-square absolute fit index (CMIN, non-significant p -value or χ^2 to $df < 3$), the comparative fit index (CFI, .90 to .95 = acceptable fit and $> .95$ = strong fit), standardized root mean square residual (SRMR $< .08$ = acceptable fit and $< .06$ = strong fit), and root mean square error of approximation (RMSEA $< .08$ = acceptable fit and $< .06$ = strong fit;). Pending acceptable fit, one or both models will be tested for factorial invariance of scores. Based on our review of the extant literature, the following sociodemographic variables were tested for factorial invariance: gender, help-seeking history, ethnoracial identity, income, and education (Kalkbrenner, 2022; Kobayashi et al., 2021; Patrick et al., 2020).

Meade and Kroustalis (2006) recommended that comparison groups for multiple-group confirmatory factor analysis (MCFA) should be comprised of at least 200 participants. Accordingly, the levels of the gender and ethnoracial identity variables were coded into the following levels in order to meet the sample size requirements for MCFA: gender identity ($n = 437$ female or $n = 391$ male) and ethnoracial identity ($n = 489$ White or $n = 334$ non-White). The levels of the help-seeking history ($n = 565$ with a help-seeking history or $n = 261$, without a help-seeking history), education ($n = 315$ high school diploma or $n = 501$ undergraduate degree or beyond), and income ($n = 533$ above the poverty line or $n = 233$ below the poverty line) variables met the minimum sample size requirement for MCFA.

Pending at least acceptable internal structure validity evidence of IWI scores (RQs 1 and 2), we will test convergent validity evidence by computing Pearson product moment correlations (r) between the IWI and the following well-established screening tools: the PHQ-9, GAD-7, and MHI-5. Strong negative correlations between the IWI and both the GAD-7 and PHQ-9 would prove convergent validity evidence of scores. A strong positive correlation between the IWI and MHI-5 would support convergent validity. A threshold of $r \geq +/- .50$ was used to evidence convergent validity of scores (Drummond et al., 2016).

Results

The unidimensional and two-dimensional IWI models were entered into two separate CFAs to test the dimensionality of scores on each model with adults in the United States (RQ 1). Pending acceptable model fit, the IWI items will be entered into an MCFA for invariance testing (RQ 2). The CFAs and MCFA were computed in IBM SPSS Amos version 26 with a maximum likelihood estimation method.

Single-Order Confirmatory Factor Analysis

The unidimensional IWI items were entered into the first CFA, and all the incremental fit indices displayed an acceptable model fit: CFI = .94, NFI = .93, IFI = .94. For the absolute fit indices, the SRMR indicated a strong model fit (SRMR = .04); however, the CMIN ($\chi^2 [65] = 498.61$, $p < .001$, $X^2/df = 7.67$) and

RMSEA (.09, 90% CI [.08, .10]) displayed a questionable-to-poor fit. The CMIN tends to underestimate model fit with large samples (Dimitrov, 2012) and the RMSEA tends to underestimate model fit for shorter screening tools (Shi et al., 2019). Accordingly, the collective results of the CFI, NFI, IFI, and SRMR supported satisfactory fit for scores on the unidimensional model. Thus, we proceeded with the MCFA for the unidimensional model.

The two-dimensional IWI model items were entered into another CFA to test the fit of the baseline model. The CFA results revealed poor model fit: CMIN (χ^2 [169] = 876.11, $p < .001$, $X^2/df = 5.18$); CFI = .84; NFI = .81; IFI = .84; RMSEA = .11, 90% CI (.09, .11); and SRMR = .16. We decided not to proceed with factorial invariance testing for the two-dimensional IWI model due to both the poor internal structure validity evidence and questionable internal consistency reliability evidence of scores on the External IWI subscale ($\alpha = .684$, 95% CI [.640, .722]; $\omega = .645$, 95% CI [.571, .701]).

Factorial Invariance Testing: Multiple-Group Confirmatory Factor Analysis

The unidimensional IWI items were entered into an MCFA (RQ2). To establish invariance of scores, we used the following recommendations from Chen (2007): $< \Delta 0.015$ in the RMSEA, $< \Delta 0.030$ in the SRMR for metric invariance or $< \Delta 0.015$ in SRMR for scalar invariance, and $< \Delta 0.010$ in the CFI. Results revealed strong measurement invariance (metric and scalar) for all sociodemographic variables (see Table 1). In other words, the MCFA provided strong evidence that IW had the same meaning among adults in the United States across gender identity, ethnoracial identity, help-seeking history, income, and education.

Table 1

Multiple-Group Confirmatory Factor Analysis: Inner Wealth Inventory

Invariance Forms	CFI	ΔCFI	RMSEA	$\Delta RMSEA$	RMSEA CIs	SRMR	$\Delta SRMR$	Model Comparison
Gender Identity: Male vs. Female								
Configural	.930		.067		.061, .072	.042		
Metric	.928	.002	.065	.002	.060, .070	.046	.004	Configural
Scalar	.925	.003	.063	.002	.058, .068	.046	< .0001	Metric
Ethnoracial Identity: White vs. Non-White								
Configural	.930		.067		.061, .072	.043		
Metric	.929	.001	.064	.003	.059, .070	.043	< .0001	Configural
Scalar	.928	.001	.062	.002	.057, .067	.043	< .0001	Metric
Help-Seeking History vs. No Help-Seeking History								
Configural	.934		.064		.059, .070	.038		
Metric	.935	.001	.061	.003	.056, .067	.039	.001	Configural
Scalar	.932	.003	.060	.001	.055, .065	.039	< .0001	Metric
Income: Below the Poverty Line vs. Above the Poverty Line								
Configural	.922		.071		.066, .077	.041		
Metric	.922	< .0001	.068	.003	.063, .074	.044	.003	Configural
Scalar	.921	.001	.066	.002	.061, .071	.044	< .0001	Metric
Education: High School vs. Undergraduate and Beyond								
Configural	.928		.068		.062, .073	.045		
Metric	.928	< .0001	.065	.003	.060, .070	.046	.001	Configural
Scalar	.928	< .0001	.062	.003	.057, .067	.046	< .0001	Metric

Convergent Validity Testing

Scores of a national sample of U.S. adults on the IWI were correlated with the following established measures to investigate convergent validity of scores: the MHI-5, PHQ-9, and GAD-7. A threshold of $r \geq +/- .50$ was used to evidence convergent validity of scores (Drummond et al., 2016). The IWI displayed a strong correlation with scores on the MHI-5 ($r = .66, r^2 = .44, p < .001, 2$ -tailed). A strong correlation also emerged between scores on the IWI and PHQ-9 ($r = -.56, r^2 = .31, p < .001, 2$ -tailed). Finally, we found a strong correlation between the IWI and GAD-7 ($r = -.52, r^2 = .27, p < .001, 2$ -tailed).

Discussion

The primary aims of this study were to test the factorial invariance and convergent validity evidence of IWI scores with a national sample of adults in the United States. IW is a wellness-based construct that dovetails with the wellness orientation of the counseling profession (Bennett et al., 2023; Myers, 1992; Myers & Sweeney, 2014). Bennett et al. (2023) developed and validated IWI scores with samples of child welfare professionals; however, a score validation study was necessary to ensure that the measure was appropriately calibrated with a sample of U.S. adults. Collectively our results supported the psychometric properties of the unidimensional IWI model but not the two-dimensional model. The findings will be discussed accordingly.

Unidimensional IWI Model

The CFA and MCFA results were promising for the unidimensional IWI model. Unidimensional IWI scores demonstrated strong invariance (metric and scalar) for all sociodemographic variables, which is particularly noteworthy, as it is not uncommon for at least one fit index to evidence metric invariance only. These results supported the generalizability of a sample of U.S. adults' scores on the unidimensional IWI. Collectively, the MCFA results revealed that IW had the same meaning among U.S. adults between the following sociodemographic variables: income, gender, ethnoracial identity, help-seeking history, and education. These sociodemographic variables are associated with differences in terms of wellness (Kalkbrenner, 2022; Kobayashi et al., 2021; Patrick et al., 2020). This finding is encouraging, as professional counselors need wellness-based screening tools now more than ever considering the complex and comorbid nature of mental and physical health issues among U.S. adults (Clarke et al., 2020; NAMI, 2022). In particular, the IWI offers professional counselors a brief tool for measuring a wellness-based construct (IW) that is invariant among U.S. adults.

The results of convergent validity testing were also favorable, as the strength and direction of all correlations were in the expected directions. The effect size estimates (practical significance) for all correlations were in the strong range (Sink & Mvududu, 2010). The strength of the effect size estimate for the co-variance between IWI scores and MHI-5 scores was particularly noteworthy and evidenced 44% shared variance. Also as expected, IWI scores of a sample of U.S. adults demonstrated strong negative correlations with the GAD-7 (anxiety severity) and the PHQ-9 (depression severity). This finding is promising for a couple of reasons. First, it supports the convergent validity evidence of IWI scores, as wellness-based constructs tend to display negative correlations with both anxiety and depression severity (Kalkbrenner, 2022). In other words, the results of convergent validity testing supported that the IWI measured the intended construct of measurement. Second, these findings are promising when considering the prevalence of anxiety and depressive disorders among U.S. adults (Clarke et al., 2020; NAMI, 2022). Future outcome research is needed to establish causality between latent traits. However, the findings of the present study provide tentative evidence surrounding a notable proportion of co-variation between a sample of U.S. adults' IWI scores and lower anxiety and depression scores.

Two-Dimensional IWI Model

In the initial instrument development and score validation study, Bennett et al. (2023) found support for the internal structure validity of scores on both unidimensional and two-dimensional IWI models. However, in the present study, we found questionable internal consistency reliability and poor internal structure validity evidence of scores on the two-dimensional IWI model. Differences in the normative samples might account for the discrepant findings between Bennett et al. (2023) and the current study. The present study was comprised of a non-clinical sample of U.S. adults, and Bennett et al. (2023) sampled child welfare professionals, who were defined as mental health professionals who were working “directly and indirectly in public child welfare agencies to ensure the safety, protection, and well-being of children” (p. 122). Mental health professionals have training in providing mental (and sometimes physical) health care to clients in need of support services. Perhaps mental health professionals’ clinical training and work experience is what led to them understanding IW as a two-dimensional construct. In other words, mental health professionals’ training in interpersonal communication might have contributed to their recognizing both internal and external dimensions of IW (the two-dimensional model), whereas IW might have a unidimensional meaning among a non-clinical sample of adults living in the United States. Future research is needed to test this possible explanation for this finding.

Implications for Practice

The results of this study show strong psychometric support for the unidimensional IWI model with a sample of U.S. adults, which has a number of implications for counseling practitioners. The National Board for Certified Counselors (2023) encourages professional counselors to use screening tools with validated scores as one way to enhance clinical practice. In fact, professional counselors have an ethical duty to make sure that screening tools have valid and reliable scores with representative client samples to ensure their proper use (AERA et al., 2014; Lenz et al., 2022; National Board for Certified Counselors, 2023). CFA and MCFA are rigorous tests of construct validity and evidenced that the IWI accurately appraised the intended construct of measurement (IW). The results of the present study extend the generalizability of IWI scores from child welfare professionals (Bennett et al., 2023) to adults in the United States. Accordingly, as one implication for practice, professional counselors can use the IWI to measure their clients’ IW. This is a particularly salient implication for practice, as demonstrating measurable treatment outcomes is becoming increasingly important in professional counseling and related health care settings (de Ossorno Garcia et al., 2021). In particular, professional counselors are expected to provide evidence of measurable client goals and outcomes. The IWI has potential to help professional counselors demonstrate such goals and outcomes. Suppose, for example, that a professional counselor is working with a client who is struggling with IW, which can manifest in a number of ways, such as struggles with self-efficacy and/or one’s sense of self-worth being dependent on external validation from others (Bennett et al., 2023; Glasser & Lowenstein, 2016). The counselor can use the IWI to track their client’s IW throughout treatment. The client’s test scores might serve as one way to quantify their progress throughout therapy.

The NHA has been implemented for decades to help individuals grow their IW and reduce workplace stressors (e.g., burnout) as well as increase resilience (Bennett et al., 2023; Glasser & Lowenstein, 2016). However, to date, there is a dearth of empirical NHA studies in the extant literature, as a screening tool for measuring IW (the primary outcome variable in NHA) did not exist until recently. The results of the present study build on the initial score validation study by Bennett et al. (2023). Specifically, the MCFA in the present study took construct validity testing to another level by demonstrating that IWI scores have the same meaning across important demographic factors among a national sample of U.S. adults. Collectively, the results of CFA, MCFA, and convergent validity testing

suggest that the IWI is particularly well calibrated for measuring IWI among adults in the United States. Accordingly, professional counselors and professionals in related fields can use the IWI as one way to measure the utility of NHA interventions.

Practicality of the IWI and Consistency With the Counseling Profession

Practicality is a cornerstone of test-worthiness and involves the degree to which a screening tool is logistically feasible for use in clinical practice (Neukrug & Fawcett, 2019). Brief screening tools with validated scores enhance the practicality of screening tools, as they provide practitioners with a quick and feasible method for measuring their clients' scores on latent variables (Shields et al., 2021). The IWI has potential to be a highly practical screening tool in professional counseling settings, as it is comprised of reasonably few items (13 items in the unidimensional model), which has implications for reducing respondent fatigue. The IWI is also available in the public domain, free to use, and can be scored in minutes. Accordingly, the IWI has potential to be a practical screening tool that professional counselors can use in the intake process to establish baseline IW scores. The brevity and feasibility of the IWI makes it practical for professional counselors to administer the IWI to their clients as one way to monitor their progress in treatment.

Consistent with the underlying strengths-based principles of the counseling profession (Long et al., 2022; Myers, 1992), the IWI's construct of measurement, IW, is a strengths-based latent characteristic (Glasser & Lowenstein, 2016). Accordingly, professional counselors are encouraged to use strengths-based assessment tools to measure well-being and keep track of treatment effectiveness (Fullen, 2016; Young et al., 2015) rather than focusing solely on measures of symptomatic distress or psychopathology. NHA and IW emphasize empowerment, strength, and resilience. The IWI is a strengths-based screening tool for measuring a growing, accruing, and deepening sense of inner enrichment (Bennett et al., 2023). Considering the promising psychometric support for the unidimensional IWI model in the present study, practitioners can use the IWI to measure IW when working with adults in the United States. In addition, the current results revealed strong correlations between IWI and MHI-5, which further supports that IW is a form of mental wellness.

Inner Wealth, Anxiety, and Depression

Anxiety and depression are the two most common mental health conditions among adults living in the United States (NAMI, 2022). The PHQ-9 and GAD-7 are screening tools with rigorously validated scores for measuring depression and anxiety severity with normative samples of adults in the United States (e.g., J. S. Patel et al., 2019). Accordingly, the results of convergent validity testing between the IWI and the GAD-7 and PHQ-9 in the present study support the IWI's psychometric properties and have implications for counselors who are working with U.S. adults living with anxiety or depression. Specifically, the IWI's strong correlations with the PHQ-9 and GAD-7 suggest that the IWI might have utility for tracking treatment outcomes related to potential protective factors against depression and anxiety. Future research is needed; however, the results of the present study tentatively suggest that higher levels of IW might have utility for predicting lower levels of anxiety and depression among U.S. adults. To this end, it might be helpful for professional counselors to include the IWI in assessment batteries for clients who are living with anxiety and depression. Treatment plan goals can reflect both aiming to reduce negative symptoms (anxiety or depression) and increase wellness-based symptoms (e.g., IW). In addition, counselors and their clients can refer to the content of IWI items as semi-structured discussion prompts. Suppose, for example, that a client scores high on the following IWI item: "When I receive a compliment, I think it is likely untrue." The client and counselor can use this information to discuss how and in what ways the client can work on giving themselves credit when they receive a compliment.

Two-Dimensional IWI Model

At this stage of development, we recommend that clinicians and researchers use the two-dimensional IWI tentatively, if at all, to measure IW among U.S. adults due to the questionable-to-poor validity evidence of scores that we found for this model. Future researchers or practitioners who are seeking to use the two-dimensional model with adults in the United States should test for reliability and validity evidence of IWI scores with their sample before interpreting the meaning of scores.

Limitations and Future Research

The findings of this study present limitations and implications for future research. We hired a data collection contracting company to employ a rigorous data collection procedure to recruit a national sample of U.S. adults stratified by the census data (U.S. Census Bureau, 2022). However, the statistical aggregation procedure that we used to dummy code variables into subsamples that were substantial enough for invariance testing may have limited the external validity of the findings. In particular, the results might not have detected differences in the meaning of IW among U.S. adults with (a) gender identities besides female or male, (b) ethnoracial identities beyond White or non-White, and/or (c) levels of education that were more specific than having a college degree or not. To these ends, we recommend that future investigators examine the factorial invariance of IWI scores with more ethnoracially, educationally, and gender-diverse samples. In addition, future researchers can extend the existing line of research on the IWI by testing for temporal internal structure validity via a time series factor analysis. Results might reveal insights into the time series psychometric properties of the IWI.

The results of convergent validity testing revealed strong co-variation (i.e., both statistical and practical significance) between IWI scores of a sample of U.S. adults and their depression and anxiety severity scores. However, causal directionality between variables cannot be inferred from the results of any cross-sectional study. Accordingly, future outcome research on the potential utility of IW in a possible treatment for anxiety and depressive disorders is recommended. For example, future researchers can test for changes in anxiety and depression severity before and after the NHA training (Glasser & Lowenstein, 2016), which is geared toward increasing IW. In addition, the results of the present study are based on a non-clinical sample of adults in the United States. There might be utility in future researchers testing the psychometric properties of the IWI with samples of participants who are living with mental and/or physical health conditions.

Summary and Conclusion

Consistent with the wellness orientation of the counseling profession, IW is a strengths-based construct that emphasizes internal enrichment and empowerment (Glasser & Lowenstein, 2016). The IWI is a screening tool for appraising IW, which was normed with two large samples of child welfare professionals (Bennett et al., 2023). The purpose of the present study was to extend the generalizability of IWI scores to a normative national sample of U.S. adults (stratified by the U.S. Census Bureau [2022] data for gender identity, age, ethnoracial identity, and geographic location). We found support for the psychometric properties of the unidimensional IWI model but not the two-dimensional IWI model with U.S. adults. Specifically, the results of factorial invariance (MCFA) and convergent validity testing evidenced strong support for the psychometric equivalence in the meaning of IW across gender, ethnoracial identity, help-seeking history, education, and income for U.S. adults' scores on the unidimensional IWI model. When working with adults in the United States, professional counselors can use the unidimensional IWI as one way to measure and track their clients' IW throughout treatment. The IWI offers a number of practical advantages to professional counselors, including brevity, simple scoring instructions, and free availability in the public domain.

Conflict of Interest, Funding Disclosure, and Author Note

The authors reported no conflict of interest in the development of this manuscript. This research was supported by an Institutional Development Award (IDeA) from the National Institute of General Medical Sciences of the National Institutes of Health under grant number P20GM103451. The authors would like to thank Dr. Howard Glasser for developing the Nurtured Heart Approach and Inner Wealth. This research would not have been possible without Dr. Glasser's innovations.

References

- American Educational Research Association, American Psychological Association, National Council on Measurement in Education, & Joint Committee on Standards for Educational and Psychological Testing (U.S.). (2014). *The standards for educational and psychological testing*. <https://www.apa.org/science/programs/testing/standards>
- Beech, B. M., Ford, C., Thorpe, R. J., Jr., Bruce, M. A., & Norris, K. C. (2021). Poverty, racism, and the public health crisis in America. *Frontiers in Public Health*, 9(1), 699049. <https://doi.org/10.3389/fpubh.2021.699049>
- Bennett, E. D., Kalkbrenner, M. T., Glasser, H. H., Tafoya, B., Nuño, V. L., & Bingham, L. (2023). Development and initial validation of scores on the Inner Wealth Inventory: Implications for human service management and practice. *Human Services Organizations: Management, Leadership, and Governance*, 47(2), 122–136. <https://doi.org/10.1080/23303131.2022.2158977>
- Berwick, D. M., Murphy, J. M., Goldman, P. A., Ware, J. E., Jr., Barsky, A. J., & Weinstein, M. C. (1991). Performance of a five-item mental health screening test. *Medical Care*, 29(2), 169–176. <https://doi.org/10.1097/00005650-199102000-00008>
- Centers for Disease Control and Prevention. (n.d.). *Underlying cause of death, 1999–2020 results, deaths occurring through 2020*. U.S. Department of Health & Human Services. <https://wonder.cdc.gov/ucd-icd10.html>
- Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling*, 14(3), 464–504. <https://doi.org/10.1080/10705510701301834>
- Cheng, H.-L., Wang, C., McDermott, R. C., Kridel, M., & Rislin, J. L. (2018). Self-stigma, mental health literacy, and attitudes toward seeking psychological help. *Journal of Counseling & Development*, 96(1), 64–74. <https://doi.org/10.1002/jcad.12178>
- Clarke, T. C., Schiller, J. S., & Boersma, P. (2020). *Early release of selected estimates based on data from the 2019 National Health Interview Survey*. National Center for Health Statistics. <https://www.cdc.gov/nchs/data/nhis/earlyrelease/EarlyRelease202009-508.pdf>
- Connor, J., Madhavan, S., Mokashi, M., Amanuel, H., Johnson, N. R., Pace, L. E., & Bartz, D. (2020). Health risks and outcomes that disproportionately affect women during the Covid-19 pandemic: A review. *Social Science & Medicine*, 266, 113364. <https://doi.org/10.1016/j.socscimed.2020.113364>
- Dajpratham, P., Pukrittayakamee, P., Atsariyasing, W., Wannarit, K., Boonhong, J., & Pongpirul, K. (2020). The validity and reliability of the PHQ-9 in screening for post-stroke depression. *BMC Psychiatry*, 20. <https://doi.org/10.1186/s12888-020-02699-6>
- de Ossorno Garcia, S., Salhi, L., Sefi, A., & Hanley, T. (2021). The Session Wants and Need Outcome Measure: The development of a brief outcome measure for single-sessions of web-based support. *Frontiers in Psychology*, 12(1), 748145. <https://doi.org/10.3389/fpsyg.2021.748145>
- Dhira, T. A., Rahman, M. A., Sarker, A. R., & Mehareen, J. (2021). Validity and reliability of the Generalized Anxiety Disorder-7 (GAD-7) among university students of Bangladesh. *PLoS ONE*, 16(12), e0261590. <https://doi.org/10.1371/journal.pone.0261590>
- Dimitrov, D. M. (2012). *Statistical methods for validation of assessment scale data in counseling and related fields*. American Counseling Association.
- Dosovitsky, G., Kim, E., & Bunge, E. L. (2021). Psychometric properties of a chatbot version of the PHQ-9 with adults and older adults. *Frontiers in Digital Health*, 3(1), 645805. <https://doi.org/10.3389/fdgth.2021.645805>
- Drummond, R. J., Sheperis, C. J., & Jones, K. D. (2016). *Assessment procedures for counselors and helping professionals* (8th ed.). Pearson.
- Fullen, M. C. (2016). Counseling for wellness with older adults. *Adultspan Journal*, 15(2), 109–123. <https://doi.org/10.1002/adsp.12025>

- Glasser, H., & Easley, J. (1998). *Transforming the difficult child: The Nurtured Heart Approach*. Nurtured Heart Publications.
- Glasser, H., & Lowenstein, M. (2016). *The transforming the intense child workbook: An experiential guide for learning and implementing The Nurtured Heart Approach*. Nurtured Heart Publications.
- Johnson-Lawrence, V., Zajacova, A., & Sneed, R. (2017). Education, race/ethnicity, and multimorbidity among adults aged 30–64 in the National Health Interview Survey. *SSM-Population Health*, 3(1), 366–372. <https://doi.org/10.1016/j.ssmph.2017.03.007>
- Kalkbrenner, M. T. (2022). Global wellness: Predicting lower levels of anxiety and depression severity. *Journal of Counseling & Development*, 100(1), 84–95. <https://doi.org/10.1002/jcad.12405>
- Kalkbrenner, M. T. (2023). Examining global wellness, anxiety severity, and depression severity among Black and Latinx adults: Implications for counseling. *Journal of Mental Health Counseling*, 45(1), 34–52. <https://doi.org/10.17744/mehc.45.1.03>
- Kobayashi, L. C., O’Shea, B. Q., Kler, J. S., Nishimura, R., Palavicino-Maggio, C. B., Eastman, M. R., Vinson, Y. R., & Finlay, J. M. (2021). Cohort profile: The COVID-19 Coping Study, a longitudinal mixed-methods study of middle-aged and older adults’ mental health and well-being during the COVID-19 pandemic in the USA. *BMJ Open*, 11(2), e044965. <https://doi.org/10.1136/bmjopen-2020-044965>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Laska, M. N., Lenk, K., Lust, K., McGuire, C. M., Porta, C. M., & Stebleton, M. (2021). Sociodemographic and health disparities among students screening positive for food insecurity: Findings from a large college health surveillance system. *Preventive Medicine Reports*, 21(1), 101297. <https://doi.org/10.1016/j.pmedr.2020.101297>
- Lawrence, E. M. (2017). Why do college graduates behave more healthfully than those who are less educated? *Journal of Health and Social Behavior*, 58(3), 291–306. <https://doi.org/10.1177/0022146517715671>
- Lenz, A. S., Ault, H., Balkin, R. S., Barrio Minton, C., Erford, B. T., Hays, D. G., Kim, B. S. K., & Li, C. (2022). Responsibilities of users of standardized tests (RUST-4E): Prepared for the Association for Assessment and Research in Counseling. *Measurement and Evaluation in Counseling and Development*, 55(4), 227–235. <https://doi.org/10.1080/07481756.2022.2052321>
- Long, S. M., Clark, M., Reed, L., & Raghavan, E. (2022). Wellness integration in professional counseling: A grounded theory. *Journal of Counseling & Development*, 100(4), 442–453. <https://doi.org/10.1002/jcad.12431>
- Maroufizadeh, S., Omani-Samani, R., Almasi-Hashiani, A., Amini, P., & Sepidarkish, M. (2019). The reliability and validity of the Patient Health Questionnaire-9 (PHQ-9) and PHQ-2 in patients with infertility. *Reproductive Health*, 16(1), 137. <https://doi.org/10.1186/s12978-019-0802-x>
- Marques, S. C., Pais-Ribeiro, J. L., & Lopez, S. J. (2011). Use of the “Mental Health Inventory – 5” with Portuguese 10-15 years old. *The Spanish Journal of Psychology*, 14(1), 478–485. https://doi.org/10.5209/rev_sjop.2011.v14.n1.43
- Mason, S., Ragan, M., Gilbert, S. H., & Lenz, A. S. (2023). Social determinants of mental health: Implications for measurement, research, and evaluation. *Journal of Counseling & Development*, 101(4), 440–448. <https://doi.org/10.1002/jcad.12490>
- Meade, A. W., & Kroustalis, C. M. (2006). Problems with item parceling for confirmatory factor analytic tests of measurement invariance. *Organizational Research Methods*, 9(3), 369–403. <https://doi.org/10.1177/1094428105283384>
- Mikati, I., Benson, A. F., Luben, T. J., Sacks, J. D., & Richmond-Bryant, J. (2018). Disparities in distribution of particulate matter emission sources by race and poverty status. *American Journal of Public Health*, 108(4), 480–485. <https://doi.org/10.2105/AJPH.2017.304297>
- Myers, J. E. (1992). Wellness, prevention, development: The cornerstone of the profession. *Journal of Counseling & Development*, 71(2), 136–139. <https://doi.org/10.1002/j.1556-6676.1992.tb02188.x>
- Myers, J. E., & Sweeney, T. J. (2014). *The Five Factor Wellness Inventory, Adult (5F-Wel-A)*. Mind Garden.
- National Alliance on Mental Illness. (2022, February). *Mental health by the numbers*. <https://www.nami.org/mhstats>
- National Board for Certified Counselors. (2023). *NBCC code of ethics*. <https://nbcc.org/Assets/Ethics/NBCCCodeofEthics.pdf>
- National Institute of Mental Health. (2023, March). *Mental illness*. NIMH Information Resource Center. <https://www.nimh.nih.gov/health/statistics/mental-illness>
- Neukrug, E. S., & Fawcett, R. C. (2019). *Essentials of testing and assessment: A practical guide for counselors, social workers, and psychologists* (Enhanced 3rd ed.). Cengage.
- Omani-Samani, R., Maroufizadeh, S., Ghaheri, A., & Navid, B. (2018). Generalized Anxiety Disorder-7 (GAD-7) in people with infertility: A reliability and validity study. *Middle East Fertility Society Journal*, 23(4), 446–449. <https://doi.org/10.1016/j.mefs.2018.01.013>

- Pan American Health Organization & World Health Organization (n.d.). *Gender equality in health*. <https://www.paho.org/en/topics/gender-equality-health>
- Patel, J. A., Nielsen, F. B. H., Badiani, A. A., Assi, S., Unadkat, V. A., Patel, B., Ravindrane, R., & Wardle, H. (2020). Poverty, inequality and COVID-19: The forgotten vulnerable. *Public Health, 183*(1), 110–111. <https://doi.org/10.1016/j.puhe.2020.05.006>
- Patel, J. S., Oh, Y., Rand, K. L., Wu, W., Cyders, M. A., Kroenke, K., & Stewart, J. C. (2019). Measurement invariance of the Patient Health Questionnaire-9 (PHQ-9) depression screener in U.S. adults across sex, race/ethnicity, and education level: NHANES 2005–2016. *Depression & Anxiety, 36*, 813–823. <https://doi.org/10.1002/da.22940>
- Patrick, S. W., Henkhaus, L. E., Zickafoose, J. S., Lovell, K., Halvorson, A., Loch, S., Letterie, M., & Davis, M. M. (2020). Well-being of parents and children during the COVID-19 pandemic: A national survey. *Pediatrics, 146*(4), e2020016824. <https://doi.org/10.1542/peds.2020-016824>
- Qualtrics Sample Services [Online sampling service]. (2023). <https://www.qualtrics.com/research-services/online-sample>
- Ramraj, C., Shahidi, F. V., Darity, W., Jr., Kawachi, I., Zuberi, D., & Siddiqi, A. (2016). Equally inequitable? A cross-national comparative study of racial health inequalities in the United States and Canada. *Social Science & Medicine, 161*(1), 19–26. <https://doi.org/10.1016/j.socscimed.2016.05.028>
- Rivera-Riquelme, M., Piqueras, J. A., & Cuijpers, P. (2019). The Revised Mental Health Inventory-5 (MHI-5) as an ultra-brief screening measure of bidimensional mental health in children and adolescents. *Psychiatry Research, 274*(1), 247–253. <https://doi.org/10.1016/j.psychres.2019.02.045>
- Rutter, L. A., & Brown, T. A. (2017). Psychometric properties of the Generalized Anxiety Disorder Scale-7 (GAD-7) in outpatients with anxiety and mood disorders. *Journal of Psychopathology and Behavioral Assessment, 39*(1), 140–146. <https://doi.org/10.1007/s10862-016-9571-9>
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*(6), 323–338. <https://doi.org/10.3200/JOER.99.6.323-338>
- Seo, J.-G., & Park, S.-P. (2015). Validation of the Generalized Anxiety Disorder-7 (GAD-7) and GAD-2 in patients with migraine. *The Journal of Headache and Pain, 16*(1), 97. <https://doi.org/10.1186/s10194-015-0583-8>
- Shi, D., Lee, T., & Maydeu-Olivares, A. (2019). Understanding the model size effect on SEM fit indices. *Educational and Psychological Measurement, 79*(2), 310–334. <https://doi.org/10.1177/0013164418783530>
- Shields, R. E., Korol, S., Carleton, R. N., McElheran, M., Stelnicki, A. M., Groll, D., & Anderson, G. S. (2021). Brief mental health disorder screening questionnaires and use with public safety personnel: A review. *International Journal of Environmental Research and Public Health, 18*(7), 3743. <https://doi.org/10.3390/ijerph18073743>
- Sink, C. A., & Mvududu, N. H. (2010). Statistical power, sampling, and effect sizes: Three keys to research relevancy. *Counseling Outcome Research and Evaluation, 1*(2), 1–18. <https://doi.org/10.1177/2150137810373613>
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: The GAD-7. *Archives of Internal Medicine, 166*(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>
- Talevi, D., Socci, V., Carai, M., Carnaghi, G., Faleri, S., Trebbi, E., Di Bernardo, A., Capelli, F., & Pacitti, F. (2020). Mental health outcomes of the CoViD-19 pandemic. *Rivista Di Psichiatria, 55*(3), 137–144. <https://doi.org/10.1708/3382.33569>
- U.S. Census Bureau. (2022). *Quickfacts: United States*. <https://www.census.gov/quickfacts/fact/table/US/PST045222>
- van der Heide, I., Wang, J., Droomers, M., Spreeuwenberg, P., Rademakers, J., & Uiters, E. (2013). The relationship between health, education, and health literacy: Results from the Dutch Adult Literacy and Life Skills Survey. *Journal of Health Communication, 18*(1), 172–184. <https://doi.org/10.1080/10810730.2013.825668>
- Winkler, P., Horáček, J., Weisssová, A., Šustr, M., & Brunovský, M. (2015). Physical comorbidities in depression co-occurring with anxiety: A cross sectional study in the Czech primary care system. *International Journal of Environmental Research and Public Health, 12*(12), 15728–15738. <https://doi.org/10.3390/ijerph121215015>
- World Health Organization. (n.d.). *Cardiovascular diseases*. https://www.who.int/health-topics/cardiovascular-diseases#tab=tab_1
- World Health Organization. (2021). *Depressive disorder (depression)*. <https://www.who.int/news-room/fact-sheets/detail/depression>
- Yamazaki, S., Fukuhara, S., & Green, J. (2005). Usefulness of five-item and three-item Mental Health Inventories to screen for depressive symptoms in the general population of Japan. *Health and Quality of Life Outcomes, 3*(1), 48. <https://doi.org/10.1186/1477-7525-3-48>
- Young, K. C., Kashdan, T. B., & Macatee, R. (2015). Strength balance and implicit strength measurement: New considerations for research on strengths of character. *The Journal of Positive Psychology, 10*(1), 17–24. <https://doi.org/10.1080/17439760.2014.920406>