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Personal Growth Initiative and Mental Health: A Meta-Analysis

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Personal growth initiative (PGI) is an individual's active and intentional desire to grow in personally important areas. In the past 20 years, a body of literature has emerged examining PGI's relationship to mental health. We conducted the first meta-analyses to synthesize this literature. Two meta-analyses examined the relationship between PGI total scores and distress (k = 22) and wellness (k = 37). Both average effect sizes were significant. We also examined the potential impact of nine moderators. The type of outcome assessed was a significant moderator for PGI and distress, and the PGI measure used was a significant moderator for PGI and wellness, accounting for 61% and 15% of the overall variance, respectively. Meta-analyses examining the relationship between the four PGI subscales (Readiness for Change, Planfulness, Using Resources, and Intentional Behavior) and distress (k = 4) and wellness (k = 7) yielded similar results to the total score analyses.

Keywords: personal growth initiative, mental health, distress, wellness, meta-analysis

Both currently and historically, counseling has had a strong focus on mental health, including wellness (Fullen, 2019). Wellness is a life orientation toward optimal health and realizing one's maximum potential (Dunn, 1977; Myers et al., 2000). In many wellness models, this orientation includes moving along a continuum toward relatively higher levels of optimal functioning, meaning that individuals' motivation and personal sense of responsibility at least partially determines their wellness (Roscoe, 2009, p. 218). For example, the wheel of wellness (Myers et al., 2000) and indivisible self model of wellness (Myers & Sweeney, 2004) include self-direction, which involves "a sense of mindfulness and intentionality in meeting the major tasks of life" (Myers et al., 2000, p. 253).

Self-direction and personal responsibility can take different forms, including engagement in personal growth. People may experience personal growth despite resistance to change, or they may seek out growth opportunities. Personal growth initiative (PGI) defines the latter, which is the tendency to take part in the change process intentionally and with full awareness, especially within life domains of importance to the individual (Robitschek, 1998). PGI is conceptualized as a skill set consisting of both cognitive (e.g., considering and realizing what needs to change) and behavioral (e.g., being able to take the necessary steps to enact the changes) components related to active and intentional growth (Robitschek et al., 2012). One of the primary tenets of PGI theory is that intentionally engaging in growth leads to higher levels of optimal functioning (e.g., Robitschek, 1999; Robitschek et al., 2012). In this sense, PGI fits very well with the conceptualization of wellness as partially based on motivation and responsibility (Roscoe, 2009).

PGI also relates to the counseling process and tenets of change. For instance, counseling inherently facilitates an individual's engagement in personal growth (Robitschek et al., 2012), and a client's readiness for change and ability to be part of this process are fundamental factors of success in counseling (Prochaska & DiClemente, 2005). Additionally, PGI has been positively related to clients being in the action stage of change (Robitschek & Hershberger, 2005). PGI also has implications for change in nonclients (Robitschek et al., 2012). For example, the ability to engage in growth is a key quality of a healthy personality (Allport, 1955; see Robitschek et al., 2012). Because the processes for counseling-assisted and self-initiated growth are similar (see Prochaska & DiClemente, 1983), it is important to understand how PGI relates to aspects of mental health in order to facilitate its use (Robitschek et al., 2012).

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In the past 20 years, a body of research has developed examining PGI's relationship to mental health, especially distress and wellness outcomes. The current study is the first to conduct a series of meta-analyses to examine the relationship between PGI and mental health, including the influence of different study and participant characteristics.

PGI and Mental Health

PGI directly relates to mental health. Conceptually, PGI has been described as a protective factor because it prevents distress from occurring, decreases existing distress through growth efforts, or quickly allows one to return to baseline after experiencing distress (Ayub & Iqbal, 2012, p. 102; see Robitschek & Kashubeck, 1999). Additionally, it orients a person toward positive change (Robitschek, 1998). Empirically, PGI has been found to significantly and negatively relate to aspects of distress, such as depressive symptoms, social anxiety, negative affect, and functional impairment (e.g., Blackie et al., 2015; Hardin et al., 2007; Robitschek & Kashubeck, 1999), as well as significantly and positively relate to aspects of wellness, including positive affect, satisfaction with life, self-actualization, and posttraumatic growth (e.g., Giacalone et al., 2016; Hardin & Larsen, 2014; Shigemoto et al., 2017). However, most of this research is based on cross-sectional, correlational studies using nonclinical populations.

In the past few years, longitudinal studies on counseling clients have emerged, indicating that PGI affects functioning (Danitz et al., 2018; Robitschek et al., 2019; Weigold, Boyle, et al., 2018). For example, Danitz et al. (2018) examined whether PGI related to mental health in clients in a partial hospital setting. They assessed PGI, depressive symptoms, and general wellness at pretreatment and posttreatment. PGI and wellness significantly increased from pretest to posttest, whereas depressive symptoms significantly decreased. The increase in PGI significantly accounted for variance in the changes in depressive symptoms and wellness. Relatedly, Weigold, Boyle, et al. (2018) examined PGI and distress in adult clients at a community mental health training clinic. Clients completed measures of PGI and distress at intake and several sessions later. PGI significantly increased across time, and distress significantly decreased. Additionally, PGI at intake significantly and negatively predicted later distress after accounting for distress at intake. Together, these findings provide preliminary support for PGI's potential as a therapeutic intervention.

Despite the general findings in the literature, the relationships between PGI and mental health have not always been consistent. For example, PGI was negatively correlated with traumatic stress symptoms in female college students in the United States but not their male counterparts (Shigemoto et al., 2017). Additionally, PGI was positively related to problematic gambling in Taiwanese adults (Loo et al., 2014). Lasun and Odufowokan (2012) found that the correlation between PGI and wellness in Nigerian college staff was small, and Hardin and Larsen (2014) showed that ideal self-actualization was not significantly correlated with PGI in U.S. college students. These disparate findings indicate that there may be differences across studies that might moderate the relationship between PGI and mental health.

Potential Moderating Factors

On the basis of the literature on PGI and mental health, there are two potential categories of moderators. These categories are the constructs (i.e., outcome and the measure of PGI used) and samples (i.e., population, gender, race/ethnicity, age, and cultural variables) assessed.

Constructs

Regarding outcomes, distress generally relates negatively to PGI, whereas wellness relates positively (e.g., Danitz et al., 2018; Shigemoto et al., 2017). However, it is also possible that specific forms of distress and wellness relate differentially to PGI based on their characteristics. For example, acculturative stress and negative affect are primarily affective constructs, whereas depression has relatively stronger cognitive and behavioral aspects (see Sandhu & Asrabadi, 1994; Watson et al., 1988). Additionally, subjective well-being (including satisfaction with life and positive affect) and self-actualization may be distinct constructs that are unrelated (e.g., Vitterosø, 2004). Finally, certain outcomes, such as posttraumatic growth, have specific antecedents, such as crises (Tedeschi & Calhoun, 2004), that do not necessarily precede other outcomes.

Relatedly, the measure of PGI used in each study may also affect results. Most of the available research has used the original, unidimensional measure of PGI, the Personal Growth Initiative Scale (Robitschek, 1998). However, recent studies have begun using the revised measure, the Personal Growth Initiative Scale–II (Robitschek et al., 2012), which yields both a total score and four subscale scores. The subscales are Readiness for Change (understanding when it is time to make changes in oneself), Planfulness (engaging cognitively in the process of change), Using Resources (utilizing help when working toward growth), and Intentional Behavior (engaging behaviorally in the growth process). Robitschek et al. (2012) noted that the original measure of PGI likely had issues with content validity because it assessed aspects of life balance and purpose rather than personal growth. Consequently, it is possible that the two measures approach PGI somewhat differently, which may yield differential relationships with other variables.

Samples

In addition to construct differences, sample differences may account for variability in research findings. Regarding populations, many of the studies on PGI have involved college students (see Weigold, Weigold, et al., 2018). This has also been the case in

the general wellness counseling literature, with relatively few studies conducted using actual clients (Myers & Sweeney, 2008). Although college students are a specific, nonclinical subset of the general population, they nevertheless can serve as a basis for studying PGI and mental health. College students are increasingly experiencing mental health challenges, and their use of counseling center services has greatly risen in recent years (e.g., Brunner et al., 2014). There are also PGI studies involving nonclinical populations that are likely to experience varying levels of distress and wellness, such as genocide-affected individuals in Rwanda (Blackie et al., 2015) and late-deafened women in the United States (Kashubeck-West & Meyer, 2008). To date, research has not examined whether the relationship between PGI and mental health differs among populations, including counseling clients. Such differences would echo the need for additional studies on diverse samples.

Little is known about how demographic differences, such as gender, race/ethnicity, and age, might moderate the relationship between PGI and mental health. However, more is known about how demographic variables relate directly to PGI and mental health as separate constructs. For example, studies examining differences in PGI scores between men and women, as well as the relationship between PGI and age, have yielded inconsistent results (e.g., Blackie et al., 2015; Robitschek et al., 2012; Weigold et al., 2014). Additionally, European Americans have evidenced lower PGI mean scores compared with African Americans and Latin Americans (Shigemoto et al., 2015; Weigold, Weigold, et al., 2018). Similarities and differences across demographic groups in terms of distress and wellness have been well studied, such as higher levels of depression among women than among men (Salk et al., 2017), the inconclusive nature of gender differences in wellness (Batz & Tay, 2018), greater levels of subjective well-being in adolescents compared with adults in recent generations (Twenge et al., 2016), and differences in the prevalence and persistence of mental disorders based on race (McGuire & Miranda, 2008). Given these findings, such demographic characteristics may affect the relationship between PGI and mental health.

Finally, given that PGI and mental health have been examined in various countries (e.g., Blackie et al., 2015; Kashubeck-West & Meyer, 2008; Yang & Chang, 2014), cultural differences may account for the relationship between the two constructs (see Robitschek, 2003). One such difference may be individualism, or the emphasis countries place on individualistic versus collectivistic values. Because PGI is an intentional and personally focused construct (Robitschek, 1998), individualism may affect PGI's relationship to mental health.

The Current Study

Given previous research, it is necessary to consolidate the literature on PGI and mental health as a foundation for understanding PGI's use in both counseling-assisted and self-initiated growth. To date, there has been only one systematic review, which suggested that PGI relates negatively to distress and positively to wellness (Pinto Pizzaro de Freitas et al., 2016). However, this review did not indicate under which circumstances this relationship might change. To this end, we conducted 10 meta-analyses. The first two examined the average effect size for the relationship between PGI (as measured by a total score) and distress and wellness. The remaining eight examined the average effect size for the relationships between the four subscales from the revised PGI measure and distress and wellness. We expected the PGI total score and subscales to relate negatively to distress at an effect size of at least .20, which is practically meaningful (C. J. Ferguson, 2009). We anticipated the same results for the PGI total score and subscales with wellness, except with a positive direction.

In addition to the overall effect sizes, we examined the potential impact of nine moderators relating to study quality (year of publication and publication status, which are included in most meta-analyses to account for differences due to time and dissemination), the constructs examined (outcome assessed and PGI measure used), and the samples involved (type of population, percentage of women, percentage of racial/ethnic minorities, average age, and individualism rating of the participants' country) for the two PGI total score meta-analyses. We anticipated that there would be heterogeneity of variance across effect sizes for the two total score meta-analyses that one or more moderators would explain. Because there are few studies using the subscales, we did not conduct moderator analyses for the PGI subscale meta-analyses.

Method

Literature Search

We followed the guidelines specified by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses statement to determine our final list of studies (Moher et al., 2009); Figure 1 illustrates this process. First, we searched various databases for relevant published and unpublished studies available through December 2017: Academic Search Complete, Business Source Complete, ERIC, MEDLINE, PsycINFO, Psychology and Behavioral Sciences Collection, and SocINDEX, as well as Google Scholar and ProQuest Dissertations and Theses Global. The only search term used was *personal growth initiative*, and there were no limiters set. We also examined the reference list of Pinto Pizarro de Freitas et al.'s (2016) systematic review article for additional documents. Our search resulted in 1,660 initial hits. After we removed duplicates and screened titles and abstracts, this number dropped to 99 documents that examined mental health functioning (broadly defined).

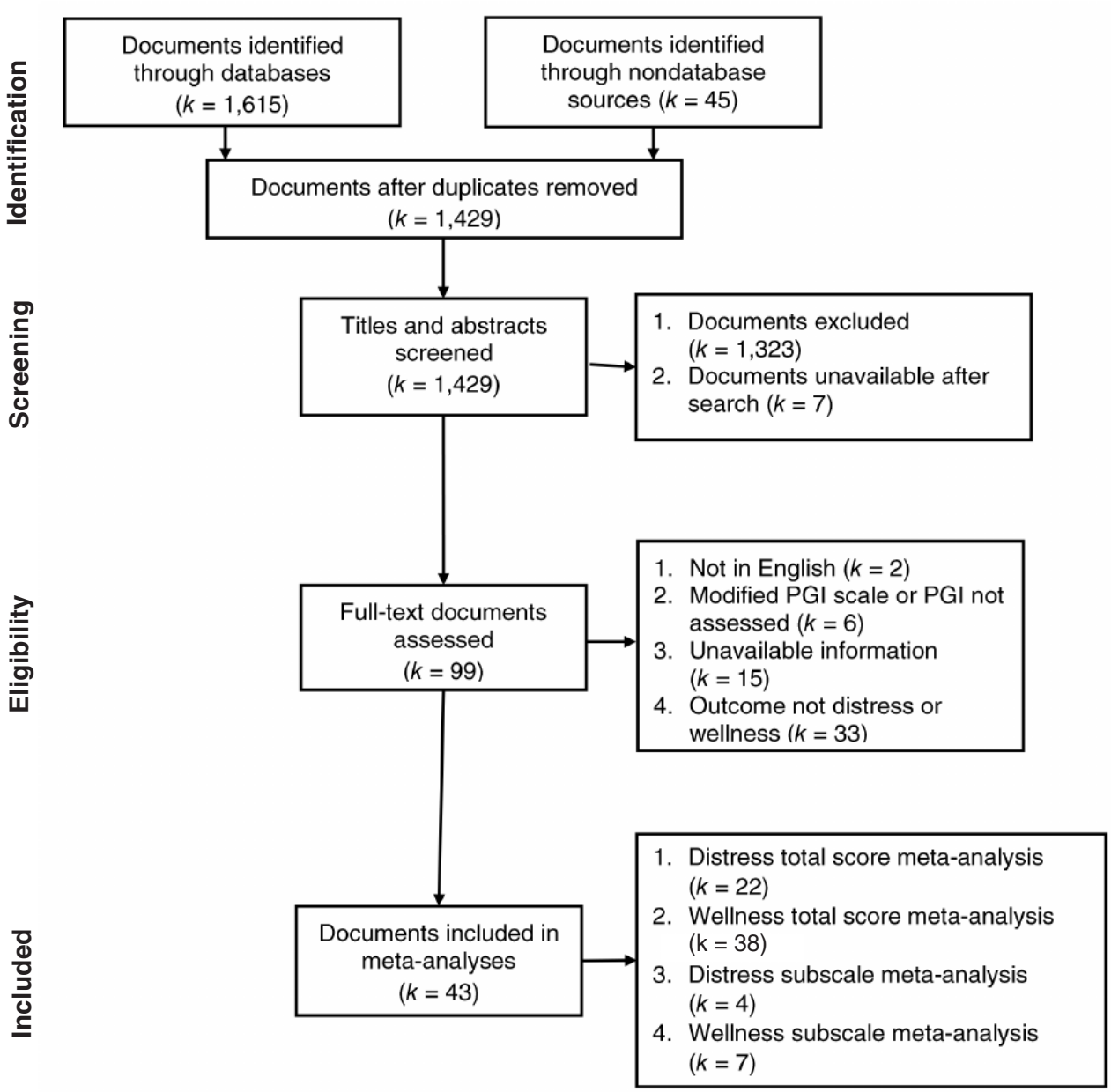

FIGURE 1
Preferred Reporting Items for Systematic Reviews and Meta-Analyses Flow Chart of Document Selection

Note. k = number of documents (except in the final box of the flow chart where k represents the number of independent effects sizes); distress total score meta-analysis = meta-analysis examining the relationship between the personal growth initiative (PGI) total score and distress; wellness total score meta-analysis = meta-analysis examining the relationship between the PGI total score and wellness; distress subscale meta-analysis = meta-analysis examining the relationship between the PGI subscales and distress; wellness subscale meta-analysis = meta-analysis examining the relationship between the PGI subscales and wellness.

Inclusion Criteria

There were four criteria for inclusion in the meta-analyses. First, documents needed to be available in English; this resulted in two exclusions. Second, they needed to clearly examine PGI; we again excluded two documents. All available documents that assessed PGI did so using either the Personal Growth Initiative Scale (Robitschek, 1998) or the Personal Growth Initiative Scale–II (Robitschek et al., 2012), and the

majority used the total scores recommended in the measures' development. We excluded the four studies that modified the PGI measure; this allowed us to examine the potential impact of the specific measure of PGI. Third, all documents needed to provide enough information to convert effect sizes to *r*. We excluded 15 documents for not providing adequate information; this included design choices not relevant for meta-analyses (i.e., case study). Finally, all studies needed to examine the relationship between PGI and distress and/or wellness outcomes; we excluded 33 studies. Prior to exclusion, and on the basis of related literature defining distress and wellness (Yoon et al., 2013), two of the authors (first and third authors) independently rated each mental health variable in the 97 documents written in English as to whether it was (a) an aspect of distress or wellness and (b) an outcome. Interrater reliability was $\kappa = 1.00$ for distress or wellness classification and $\kappa = .84$ for outcome classification. A third author (second author) reviewed the discrepant ratings (without discussing them with the other authors) and provided an additional rating. The authors then discussed the discrepant ratings and came to a consensus, which was consistent with the ratings of the third author in all cases.

Several studies provided data for more than one sample (i.e., men and women). Because these effect sizes are independent, we treated them as separate samples. Most studies also included more than one outcome measure. However, outcomes from the same study are not independent; therefore, we combined outcomes for each sample to provide one average effect size (Borenstein et al., 2009).

Our review resulted in 43 documents with 71 independent effect sizes that met all inclusion criteria. Many of these documents provided enough information for inclusion in more than one meta-analysis. Consequently, the final number of effect sizes in each meta-analysis was as follows: PGI total score–distress relationship ($k = 22$), PGI total score–wellness relationship ($k = 38$), PGI subscale–distress relationship ($k = 4$), and PGI subscale–wellness relationship ($k = 7$). (Hereinafter these meta-analyses are referred to as distress total score, wellness total score, distress subscale, and wellness subscale, respectively.) Power analyses for a mean effect size of .20, high heterogeneity of variance, and calculated average sample sizes (Ns = 293, 522, 266, and 486, respectively, after removing an extremely high sample size from both PGI total score analyses [$n = 2{,}721$]) yielded power estimates above .89 for the four average effect size meta-analyses.

Coding

Two authors (fourth and fifth authors) coded the documents based on criteria developed jointly among all authors. The first author trained the coders and was available to answer questions. The third author compared and reconciled the finished code sheets by making decisions on each discrepancy, marking them, and sending them to the first author for final approval. All categorical moderators consisted of at least two independent effect sizes from at least two different documents. We removed effect sizes that did not provide information about one or more moderators from the relevant moderation analysis.

Year. We assessed year of publication as a continuous variable. For both meta-analyses, the range was 1999 to 2017. There were no missing data for this moderator.

Publication status. We categorically assessed the publication status of each document by coding documents dichotomously as published or not published. There were no missing data.

PGI measure. We assessed the PGI measure used categorically by coding each study dichotomously as using the original measure (the Personal Growth Initiative Scale) or the revised measure (the Personal Growth Initiative Scale–II). There were no missing data.

Outcome. We coded outcome variables categorically. For studies with more than one outcome measure, we selected a single outcome effect size by random number generation to include in analyses directly examining this moderator. (All other analyses used the combined effect size of all outcomes for that study.) There were five categories for the distress total score meta-analysis (acculturative stress, depression, global distress, negative affect, and stress) and seven categories for the wellness total score meta-analysis (global mental health, positive affect, posttraumatic growth, presence of meaning, wellness, satisfaction with life, and self-actualization). Although there were no missing data, we did not include two effect sizes for the distress meta-analysis and three for the wellness meta-analysis in the analyses involving outcome because there were not enough effect sizes to make a category.

Population. We coded each study's population categorically. Because the studies in the distress and wellness meta-analyses examined somewhat different populations, the categories were not the same. The three categories for the distress meta-analysis were college students, counseling clients, and trauma survivors, whereas the three categories for the wellness meta-analysis were college students, community members, and graduate students. One document did not include enough information to determine the population, which accounted for one effect size in the distress meta-analysis and two effect sizes in the wellness meta-analysis.

Women. We measured the percentage of women in each sample continuously. The percentage ranged from 0 to 100 for both meta-analyses (given that several researchers split their sample by gender and conducted separate analyses for men and women). Two studies each in the distress and wellness meta-analyses did not provide a sample breakdown by gender; therefore, we did not include the corresponding effect sizes in the analyses involving the percentage of women.

Racial/ethnic minorities. We measured the percentage of racial/ethnic minorities in each sample continuously. The percentage ranged from 7 to 45 for both analyses. Many

studies in the distress (k = 13) and wellness (k = 22) meta-analyses did not provide this information about their samples; therefore, we did not include the corresponding effect sizes in related analyses.

Age. We assessed the average age of participants in each sample continuously. Age ranged from 19 to 34 years for the distress meta-analysis and 14 to 47 years for the wellness meta-analysis. Some studies in the distress (k = 6) and wellness (k = 13) total score meta-analyses did not provide their samples' age; therefore, we excluded these effect sizes in relevant analyses.

Individualism. We measured individualism ratings continuously using Hofstede's index (Hofstede et al., 2010), in which each country has a number from 0 to 100, with higher scores indicating a higher emphasis on individualistic values. The individualism ratings ranged from 14 (Pakistan) to 91 (United States) for the distress meta-analysis and from 18 (South Korea) to 91 (United States) for the wellness meta-analysis. We did not include studies that sampled participants from multiple countries in analyses involving this moderator for both the distress (k = 3) and wellness (k = 5) total score meta-analyses; in addition, one country sampled in the distress meta-analysis (Rwanda) is not currently part of Hofstede's index.

Analyses

We conducted all meta-analyses using Comprehensive Meta-Analysis (Version 3.0; Borenstein et al., 2014). This program is exclusively for conducting meta-analyses, including examining outliers and conducting advanced statistical analyses (e.g., metaregressions; Borenstein et al., 2014). Because we anticipated heterogeneity of variance across studies, we used random-effects models and weighted mean effect sizes. To calculate the average effect size r, we standardized all effect sizes using Fisher's r to z transformation, ran the analyses, and converted the average effect size back to r (Borenstein et al., 2009). Following the example of other meta-analyses (e.g., Yoon et al., 2013), prior to analysis, we removed measurement error from the effect sizes based on the alpha levels provided. We used aggregate alpha levels for studies with several samples that did not provide separate reliability analyses. For studies not reporting the alpha levels, we used those provided in the original development articles. Finally, we did not adjust the effect sizes for outcome measures with single items (k = 1 for both the distress and wellness total score meta-analyses) or author-combined scales (k = 1 for the wellness total score meta-analysis).

For the distress and wellness total score meta-analyses, we next assessed the suitability of testing for moderators by examining heterogeneity of variance across studies using the Q and I^2 statistics. A significant Q statistic indicates heterogeneity of variance. The I^2 statistic provides information about the percentage of heterogeneity of variance, with 25%, 50%, and 75% as proposed cutoffs for small, moderate, and large percentages, respectively (Higgins et al., 2003). Finally, we examined moderators for the distress and wellness total score meta-analyses using bivariate metaregressions. Bivariate metaregressions assess each moderator separately to determine whether it accounts for a significant amount of heterogeneity of variance across studies. We used the DerSimonian and Laird method (i.e., method of moments) to estimate the residual heterogeneity of variance in the metaregressions (see Viechtbauer et al., 2015).

Results

Distress Total Score Analyses

Preliminary analyses. We examined the data set for influential outliers (Viechtbauer & Cheung, 2010). Studentized residuals were all less than 1.96, suggesting that there were no outliers.

To assess whether sample sizes significantly affected the effect sizes, we conducted a cumulative meta-analysis (Borenstein et al., 2009). Heterogeneity of variance does not influence this method as strongly as other commonly used methods (Coburn & Vevea, 2015). Cumulative meta-analysis lists studies in order, starting with the largest sample size, and adds effect sizes one by one. If sample size bias is not present, the resulting forest plot should not strongly drift.

Sample sizes for the distress total score meta-analysis ranged from 32 to 2,721. The resulting forest plot did not show strong drift, indicating a lack of bias (see Figure 2).

Average effect size. We examined the average effect size using 22 independent effect sizes based on a total of 20,092 participants. The overall effect size was –.29, 95% confidence interval (CI) [–.37, –.21], z = –6.75, p < .001. This corresponds to a small, yet practically significant, effect (C. J. Ferguson, 2009). There was large heterogeneity of variance, $Q(21)$ = 300.40, p < .001, I^2 = 93.01, indicating the suitability for assessing moderators.

Bivariate metaregressions. We assessed the extent to which the nine moderators accounted for heterogeneity of variance across effect sizes (see Table 1). Only outcome accounted for significant variance, $Q(4)$ = 11.87, p = .018, I^2 = 80.00. This moderator consisted of five categories: acculturative stress, depression, global distress, negative affect, and stress. We selected depression as the reference category because it contained the largest number of studies (k = 8). Compared with the average correlation between PGI and depression (r = –.47), the correlations were significantly smaller for PGI and acculturative stress (k = 2, Δr = .30, p = .011) and PGI and negative affect (k = 4, Δr = .23, p = .014); additionally, the CIs did not overlap. The correlations between PGI and global distress (k = 4, Δr = .13, p = .185) and PGI and stress (k = 2, Δr = –.06, p = .659) did not differ significantly from the correlation between PGI and depression. Outcome explained almost two thirds of the variance (R^2 = .61).

Although other moderators were not significant, two more accounted for overall variance: percentage of women (k = 20,

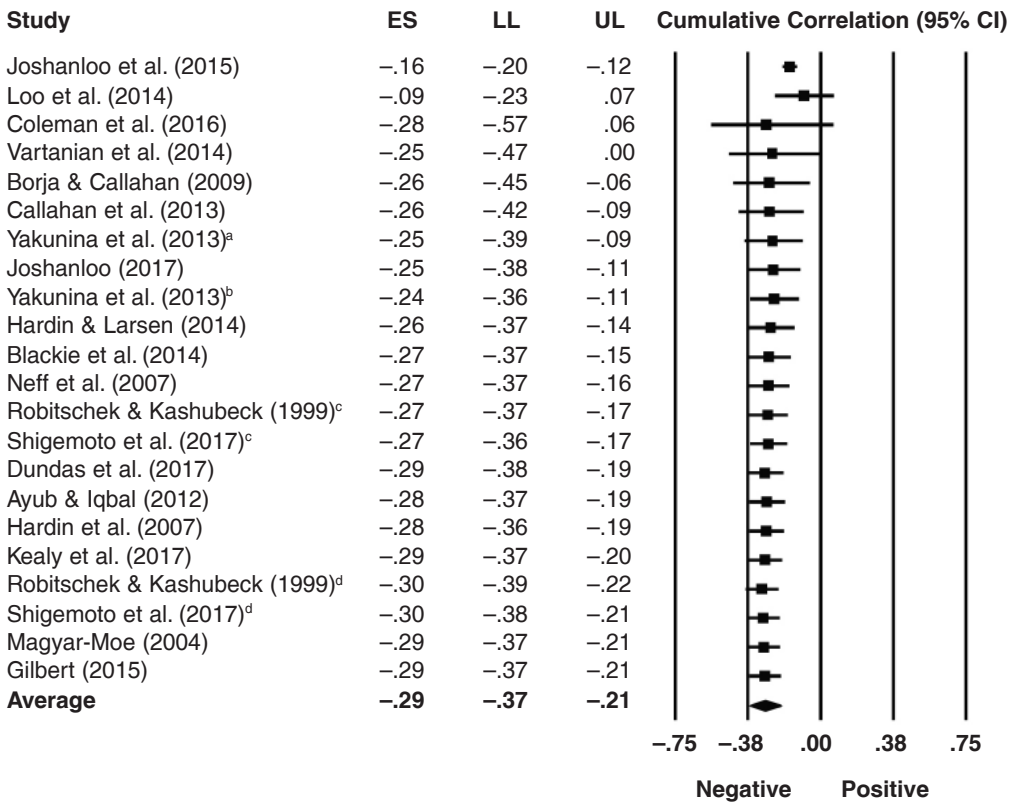

FIGURE 2
Cumulative Meta-Analysis Assessing Sample Size Bias for the Distress Total Score Meta-Analysis

Note. Studies are ordered from largest sample size to smallest. Cumulative effect sizes (ESs) are represented by squares with confidence intervals (CIs) represented by the intersecting lines. The overall effect size is represented by the diamond. Distress total score meta-analysis = meta-analysis examining the relationship between the personal growth initiative total score and distress; LL = lower limit; UL = upper limit. [a]Yakunina, Weigold, & Weigold (2013). [b]Yakunina, Weigold, Weigold, Hercegovac, & Elsayed (2013). [c]Sample 1. [d]Sample 2.

R^2 = .05) and individualism (k = 18, R^2 = .23). The other six moderators (year, publication status, PGI measure, population, percentage of racial/ethnic minorities, and age) each accounted for effectively 0% of the variance.

Wellness Total Score Analyses

Preliminary analyses. Two samples had absolute Studentized residuals above 1.96 (–2.37 and 5.10), indicating the presence of two outliers (see Viechtbauer & Cheung, 2010). However, only the latter outlier had a difference in fits statistic above 1.00, suggesting that it was influential. Consequently, we removed the influential outlier from further analyses.

We again examined sample size bias using cumulative meta-analysis (Coburn & Vevea, 2015). Sample sizes ranged from 32 to 2,721, and the forest plot did not indicate strong drift based on the addition of smaller samples (see Figure 3).

Average effect size. We assessed the overall effect size using 37 independent effect sizes based on 12,424 participants. The average effect size was .52, 95% CI [.47, .56], z = 19.10, p < .001, which corresponds to a medium effect (C. J. Ferguson, 2009). Heterogeneity of variance across studies was significant, $Q(36) = 356.07$, $p < .001$, $I^2 = 89.89$.

Bivariate metaregressions. We examined the extent to which the moderators accounted for variance across studies (see Table 2). Of the nine moderators, only the PGI measure (original or revised) accounted for significant variance, $Q(1) = 6.90$, $p = .009$, $I^2 = 88.11$. Compared with the original measure (k = 27, r = .62), correlations involving the revised measure were significantly smaller (k = 10, Δr = –.17), although the CIs overlapped. The PGI measure used accounted for 15% of the overall variance.

The outcome assessed approached significance, $Q(6) = 11.97$, $p = .063$, $I^2 = 87.28$, and accounted for 17% of the heterogeneity of variance across studies. Although the other bivariate metaregressions were also not significant, four additional moderators accounted for variance across studies: population (k = 26, R^2 = .12), percentage of women (k = 35, R^2 = .05), percentage of racial/ethnic minorities (k = 15, R^2 = .13), and individualism (k = 32, R^2 = .07). Year,

TABLE 1

Bivariate Metaregressions for the Distress Total Score Meta-Analysis

Moderator	k	r	95% CI	z	p	Q	p	R^2
Year	**22**	.006[a]				**0.56**	**.454**	**.00**
Publication status	**22**					**0.80**	**.370**	**.00**
Yes[b]	20	–.31	[–.39, –.22]	–6.75	<.001			
No	2	–.14	[–.50, .22]	–0.75	.453			
PGI measure	**22**					**2.38**	**.123**	**.00**
Original[b]	16	–.34	[–.44, –.24]	–6.47	<.001			
Revised[b]	6	–.18	[–.35, –.01]	–2.06	.039			
Outcome[b]	**20**					**11.87**	**.018**	**.61**
Acculturative stress	2	–.18	[–.38, .02]	–1.75	.081			
Depression[b]	8	–.47	[–.58, –.37]	–8.56	<.001			
Global distress[b]	4	–.35	[–.50, –.19]	–4.44	<.001			
Negative affect[b]	4	–.25	[–.39, –.10]	–3.34	.001			
Stress[b]	2	–.53	[–.76, –.30]	–4.48	<.001			
Population	**18**					**0.00**	**.998**	**.00**
College students[b]	13	–.33	[–.46, –.21]	–5.27	<.001			
Counseling clients	2	–.33	[–.67, .01]	–1.88	.060			
Trauma survivors[b]	3	–.32	[–.58, –.07]	–2.54	.011			
% women	**20**	–.001[a]				**0.10**	**.754**	**.05**
% racial/ethnic minorities	**9**	–.005[a]				**0.32**	**.570**	**.00**
Age	**16**	.001[a]				**0.01**	**.933**	**.00**
Individualism	**18**	–.003[a]				**2.57**	**.109**	**.23**

Note. Model test statistics are bolded. Significant model tests indicate a significant difference between at least two categories (or a significant slope for continuous variables). Significant categories indicate a significant overall effect size for that specific category. Distress total score meta-analysis = meta-analysis examining the relationship between the personal growth initiative (PGI) total score and distress (for PGI measure, original = Personal Growth Initiative Scale; revised = Personal Growth Initiative Scale–II); k = number of independent effect sizes; CI = confidence interval.

[a]For continuous variables, the r column contains the slope (b). [b]Significant at $p \leq .05$.

publication status, and age each accounted for effectively 0% of the variance.

PGI Subscale Analyses

In addition to the total score analyses, we examined the average correlations between the four subscales of the Personal Growth Initiative Scale–II and distress and wellness. Because distress and wellness had only four and seven independent effect sizes, respectively, we did not conduct preliminary analyses or bivariate metaregressions.

The average correlations between the four subscales and distress were all negative and significant: Readiness for Change, $r = –.23$, 95% CI [–.35, –.11], $z = –3.57$, $p < .001$; Planfulness, $r = –.31$, 95% CI [–.40, –.22], $z = –6.34$, $p < .001$; Using Resources, $r = –.14$, 95% CI [–.28, –.01], $z = –2.06$, $p = .040$; and Intentional Behavior, $r = –.24$, 95% CI [–.34, –.12], $z = –4.07$, $p < .001$. Except for Using Resources, all average effect sizes were above .20.

The overall effect sizes for the four subscales correlated with wellness were all positive and significant: Readiness for Change, $r = .31$, 95% CI [.22, .38], $z = 7.01$, $p < .001$; Planfulness, $r = .41$, 95% CI [.34, .48], $z = 10.01$, $p < .001$; Using Resources, $r = .28$, 95% CI [.16, .39], $z = 4.34$, $p < .001$; and Intentional Behavior, $r = .36$, 95% CI [.31, .40], $z = 14.08$, $p < .001$. All average effect sizes were above .20.

Discussion

Support for Hypotheses

The goal of the current study was to provide the first meta-analytic synthesis of the 20 years of research on PGI's relationship with distress and wellness. To this end, we conducted a series of 10 meta-analyses, two using the PGI total score and eight involving the PGI subscales. The results generally supported our hypotheses.

First, the average effect sizes were significant and in the expected directions (i.e., negative for distress and positive for wellness) for both the total score and subscale analyses. This finding is consistent with the assertions made in Pinto Pizarro de Freitas et al.'s (2016) systematic review of PGI. The average effect sizes were all small for distress (except for Using Resources, which was below the cutoff for a small effect size) and small to moderate for wellness, indicating that PGI has a stronger relationship to wellness. This finding fits

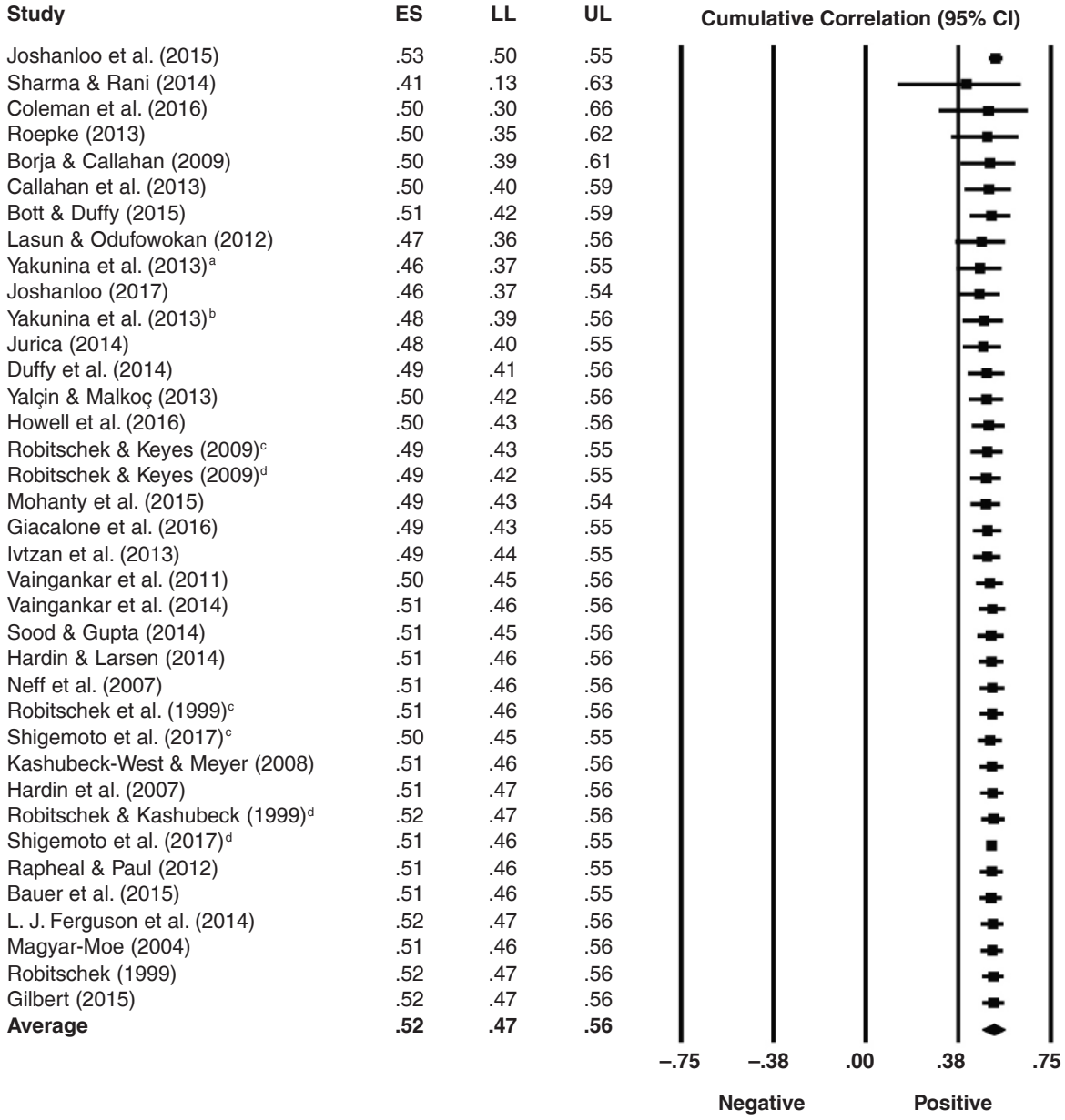

FIGURE 3

Cumulative Meta-Analysis Assessing Sample Size Bias for the Wellness Total Score Meta-Analysis

Note. Studies are ordered from largest sample size to smallest. Cumulative effect sizes (ESs) are represented by squares with confidence intervals (CIs) represented by the intersecting lines. The overall effect size is represented by the diamond. Wellness total score meta-analysis = meta-analysis examining the relationship between the personal growth initiative total score and wellness. LL = lower limit; UL = upper limit. [a]Yakunina, Weigold, & Weigold (2013). [b]Yakunina, Weigold, Weigold, Hercegovac, & Elsayed (2013). [c]Sample 1. [d]Sample 2.

with the conceptualization of PGI as an aspect of personal responsibility that partially underlies wellness (Robitschek, 1999; Roscoe, 2009) and speaks to the potential role PGI may have as a basis for wellness interventions.

Second, both total score meta-analyses indicated significant moderators of the relationship between PGI and mental health. For distress, we found that the specific outcome assessed affected this relationship. This moderator also accounted for nearly two thirds of the overall variance, indicating the relative importance of outcome in the relationship between PGI and distress. PGI's correlation with depression was significantly stronger than with both acculturative stress and negative affect. There are several potential reasons for this finding. First, PGI is composed of cognitive and behavioral components (Robitschek et al., 2012), which may be less likely to overlap with affective acculturative stress and

TABLE 2

Bivariate Metaregressions for the Wellness Total Score Meta-Analysis

Moderator	k	r	95% CI	z	p	Q	p	R^2
Year	**37**	–.008[a]				**1.37**	**.242**	**.00**
Publication status	**37**					**0.47**	**.494**	**.00**
Yes[b]	34	.58	[.52, .64]	18.46	<.001			
No[b]	3	.50	[.26, .73]	4.18	<.001			
PGI measure[b]	**37**					**6.90**	**.009**	**.15**
Original[b]	27	.62	[.55, .68]	18.78	<.001			
Revised[b]	10	.45	[.34, .56]	8.31	<.001			
Outcome	**34**					**11.97**	**.063**	**.17**
Global mental health[b]	6	.74	[.60, .88]	10.52	<.001			
Positive affect[b]	4	.57	[.40, .75]	6.50	<.001			
Posttraumatic growth[b]	3	.43	[.21, .66]	3.78	<.001			
Presence of meaning[b]	4	.72	[.55, .90]	8.29	<.001			
Wellness[b]	4	.55	[.37, .73]	6.00	<.001			
Satisfaction with life[b]	11	.54	[.43, .64]	9.98	<.001			
Self-actualization[b]	2	.41	[.16, .67]	3.22	.001			
Population	**26**					**2.39**	**.303**	**.12**
College students[b]	20	.57	[.50, .65]	15.46	<.001			
Community members[b]	4	.68	[.52, .83]	8.44	<.001			
Graduate students[b]	2	.48	[.26, .69]	4.29	<.001			
% women	**35**	.001[a]				**1.44**	**.230**	**.05**
% racial/ethnic minorities	**15**	.003[a]				**0.99**	**.319**	**.13**
Age	**24**	.005[a]				**1.29**	**.256**	**.00**
Individualism	**32**	.001[a]				**0.22**	**.642**	**.07**

Note. Model test statistics are bolded. Significant model tests indicate a significant difference between at least two categories (or a significant slope for continuous variables). Significant categories indicate a significant overall effect size for that specific category. Wellness total score meta-analysis = meta-analysis examining the relationship between the personal growth initiative (PGI) total score and wellness (for PGI measure, original = Personal Growth Initiative Scale; revised = Personal Growth Initiative Scale–II). k = number of independent effect sizes; CI = confidence interval.

[a]For continuous variables, the r column contains the slope (b). [b]Significant at $p \leq .05$.

negative affect compared with depression. Additionally, people with depression are often negative toward themselves (e.g., see Greene, 1989); they may consequently rate themselves low on PGI or feel they are unable to actively engage in growth. Finally, because many people with high levels of depressive symptoms also have high levels of hopelessness (e.g., Greene, 1989), individuals with depression may not see a purpose in personal change. Future research should examine these possibilities.

For the wellness total score meta-analysis, the PGI measure used was a significant moderator and accounted for 15% of the overall variance, with the original measure having a stronger correlation with wellness than the revised measure. This finding may be due to the possibility that the original PGI measure identifies aspects of life balance and purpose rather than personal growth (Robitschek et al., 2012). Nevertheless, their CIs overlapped, so the reported difference is tenuous. The specific aspect of wellness assessed approached significance as a moderator and accounted for 17% of the variance. Future researchers should further delineate the impact of the specific outcome on the relationship between PGI and wellness.

None of the remaining moderators were significant for either the distress or wellness total score meta-analysis, although several accounted for overall variance in both meta-analyses (percentage of women and individualism) or just the wellness meta-analysis (percentage of racial/ethnic minorities). Many studies did not provide information on these demographic variables, especially the racial/ethnic composition of their samples. Targeted studies are necessary to determine how and to what extent these variables might affect the relationship between PGI and mental health as a basis for effectively designing PGI interventions for diverse populations.

Of note, population did not significantly account for variance in the relationship between PGI and mental health in either total score meta-analysis, indicating that it works in a similar way for college students, counseling clients, and trauma survivors (distress meta-analysis), as well as for college students, community members, and graduate students (wellness meta-analysis). However, this finding could also be due to the large number of college student samples and small number of other samples in both analyses. There were only enough studies using counseling clients to make a category in

the distress meta-analysis. This points to a severe limitation in the PGI literature. Fortunately, recent studies have begun to correct this imbalance, with findings supporting those of the current meta-analyses (e.g., Danitz et al., 2018).

Implications for Counselors

The results of the meta-analyses have implications for practicing counselors. First, PGI was negatively related to distress and positively related to wellness, suggesting that higher levels of PGI may be useful in reducing distress and promoting wellness. This assertion fits with past research, which has found that clients who begin counseling with higher levels of PGI might use these skills during counseling with positive results (Weigold, Boyle, et al., 2018; see Robitschek et al., 2012). Two empirically based interventions have shown evidence for increasing PGI scores (Meyers et al., 2015; Thoen & Robitschek, 2013) and may be useful both in counseling and general outreach interventions. Participants engage in PGI psychoeducation and wellness-based activities during either a 1-day training (Meyers et al., 2015) or two 1-hour workshops (Thoen & Robitschek, 2013) with related homework. However, studies have examined these interventions only in college students.

In addition to specific interventions, given the robust relationship between PGI and wellness in the current meta-analyses, it may be helpful to measure PGI during counseling. PGI levels could indicate which clients are most ready to make use of the counseling process (Robitschek et al., 2012). Additionally, PGI levels have repeatedly been shown to increase during the course of counseling (Danitz et al., 2018; Robitschek et al., 2019; Weigold, Boyle, et al., 2018), suggesting that this is an optimum place for clients lower in PGI levels to learn how to actively engage in growth and, consequently, increase their wellness. However, the results of the wellness total score meta-analysis indicate that it may be important to consider which PGI measure to use. Because the revised measure corrects for limitations in the original measure (Robitschek et al., 2012) and is used in all recent research on clinical populations (e.g., Danitz et al., 2018; Robitschek et al., 2019; Weigold, Boyle, et al., 2018), it may be the better choice.

Finally, as with wellness counseling in general (Myers & Sweeney, 2008), there is a need for counseling researchers to examine PGI in nonstudent clinical samples. Such research may include replicating the studies on interventions to increase PGI scores, investigating how PGI longitudinally predicts various distress and wellness outcomes, and developing targeted PGI-based interventions for outcomes strongly related to PGI. For instance, although interventions to increase PGI have shown preliminary evidence of effectiveness (Meyers et al., 2015; Thoen & Robitschek, 2013), researchers have not yet investigated their use during the counseling process. Additionally, studies examining the relationship between PGI at intake to distress and wellness at later points in counseling have generally focused on global distress, general wellness, and/or depression (e.g., Danitz et al., 2018; Robitschek et al., 2019; Weigold, Boyle, et al., 2018). Consequently, there is a strong need for more research investigating various mental health outcomes, particularly considering the findings of the current meta-analyses that indicate that PGI does not correlate to the same degree with all outcomes. Finally, to date, counselors and researchers have not yet developed PGI-based interventions to counteract distress or increase wellness. These interventions may be most helpful for mental health issues strongly related to PGI, such as depression.

Limitations and Conclusion

There are several limitations of the current meta-analyses. First, although power was high for the average effect sizes, the moderation analyses were likely underpowered because of the small number of studies, potentially rendering impactful moderators statistically nonsignificant. Relatedly, because we restricted our literature search to documents that were available prior to 2018, the resulting meta-analyses did not include the most recent studies on PGI's relationship to distress and wellness (e.g., Robitschek et al., 2019). Future research should replicate these meta-analyses as additional studies become available. Third, we limited the outcomes to those involving distress and wellness. There are other potential outcomes of PGI in the literature, such as vocational aspects (e.g., Bott & Duffy, 2015), which might provide additional information on the role of PGI in optimal functioning. However, the literature base on PGI's relationships to such outcomes is much smaller than those for distress and wellness, indicating a need for further studies prior to conducting meta-analyses. Finally, all samples that included information on race/ethnicity and age were primarily White and in young or middle adulthood; international studies, which potentially included more diverse samples, typically did not provide information related to these constructs. Given the importance of assessing variables within different cultural contexts (see Myers & Sweeney, 2008), future researchers should both provide demographic descriptions of their samples when disseminating studies and include these descriptions as moderating variables when conducting additional meta-analyses.

Taken together, our results highlight the importance of PGI for mental health. Consequently, they also make the case for the development of PGI-based wellness interventions.

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