The Protective Function of Personal Growth Initiative among a Genocide-Affected Population in Rwanda

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Abstract

The aim of the current study was to investigate the extent to which individual differences in personal growth initiative (PGI; Robitschek, 1998) were associated with lower reports of functional impairment of daily activities among a genocide-affected population in Rwanda. PGI measures an individual's motivation to develop as a person and the extent to which he/she is active in setting goals that work towards achieving self-improvement. We found that PGI was negatively associated with functional impairment when controlling for depression, PTSD, and other demographic factors. Our results suggest that PGI may constitute an important mindset for facilitating adaptive functioning in the aftermath of adversity and in the midst of psychological distress, and as such might have practical applications for the development of intervention programs.

Key words: personal growth initiative, depression, functional impairment, genocide

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In the last decade, researchers have become increasingly interested in understanding the psychological characteristics and social-environmental factors that facilitate adaptive functioning following experiences of adversity (Frazier, Keenan, Anders, Perera, Shallcross, & Hintz, 2011; Tugade & Fredrickson, 2004). Researchers have argued that it is not enough to document the prevalence of symptoms of psychological distress, and treat these symptoms in isolation (Hoeing, 2004); rather a complete understanding of recovery from trauma requires that we also explore how and why some people are resilient, and the conditions under which some people may grow as a result of their experience (Jayawickreme & Blackie, 2014; Tedeschi & Calhoun, 1996). Research that identifies these factors allows for the development of interventions that may serve to strengthen an individual's resilience (Blackie, Roepke, Forgeard, Jayawickreme, & Fleeson, 2014; Seligman & Csikszentmihalyi, 2000). We examined whether *personal growth initiative* (PGI; Robitschek, 1998; Weigold, Porfeli, & Weigold, 2013) - the intentional desire to develop as a person and the confidence to set goals that enable personal growth – was associated with lower levels of functional impairment in a population of genocide survivors in Rwanda.

Research into the impact of forced migration needs to move beyond documenting the prevalence of distress (Jayawickreme, Jayawickreme, & Seligman, 2012). These perspectives do not argue that there is little value in investigating the mental health consequences in post-conflict; rather they argue that focusing solely on diagnosis of conditions may mean that researchers fail to understand the larger context and associated political and social issues. This sentiment is echoed in an interview with a program coordinator who worked with forcefully displaced individuals in the Rhino Camp in Uganda "When you come and say 'now my refugees, I have

come, I know that you are suffering…' surely they will tell you problems. But if you come and ask them 'how are things, how is your harvest, what have you done this year?' you get a different answer" (Adi Gerstl in Hoeing, 2004, p. 12). Indeed, Jayawickreme et al. (2012b) have argued that past research has overlooked that refugees are normal individuals that might be able to harness their natural strengths and resources to cope with the challenges they face.

Research has shown that individuals can promote psychological well-being when they enact certain behaviors (Fleeson, 2001; Fleeson, Malanos, &Achille, 2002). Fleeson et al. (2002) observed that a manipulation that instructed participants to act in extraverted manner while engaging in a group discussion (talkative, bold, and energetic) increased their self-reported levels of positive affect. This manipulation worked regardless of whether participants were extraverted or introverted. These findings suggest that individuals might be able to enhance aspects of their well-being by enacting the behaviors most associated with well-being outcomes (Blackie et al., 2014; Fleeson, 2001). The present study therefore attempts to apply this rationale to focus on an intriguing, yet understudied question – can specific personality characteristics offer individuals some protection against impairment?

We focused on PGI in this study, as it is a skill set that individuals are able to develop and refine over time rather than a stable and fixed personality trait (Robitschek & Hershberger, 2005). PGI encompasses cognitive and behavioral skills that include the belief that one can change one's circumstances and active planning and goal-setting strategies directed toward attaining improvement (Robitschek et al., 2012). Weigold et al. (2013) have proposed that PGI captured core tenets of human agency – beliefs and abilities that relate to an individual's sense of control over their life. Given that PGI enables individuals to assert some psychological control over their lives, it may therefore represent a particularly adaptive mindset in adverse situations.

PGI is conceptually similar to the construct of hope (Shorey, Little, Snyder, Kluck, & Robitschek, 2007), and dispositional hope has predicted adaptive functioning among Kosovar refugees (Ai, Tice, Whitsett, Ishisaka, & Chim, 2007).

Research has shown that PGI is an important psychological characteristic associated with lower levels of distress. Hardin, Weigold, Nixon, and Robitschek (2007) found that higher levels of PGI predicted lower levels of social anxiety and fear of disapproval, because participants were better able to attain their desired self-attributes. Robitschek and Keyes (2009) observed that PGI predicted psychological, social, and emotional well-being, suggesting that participants higher in PGI also experienced more fulfilling relationships and a greater sense of autonomy, mastery, and purpose in life when compared to those who were lower in PGI. Recent work has confirmed that PGI is an important predictor of optimal well-being and was associated with lower levels of psychological distress (Weigold et al., 2013). Taken together, these findings imply that PGI may be an adaptive mindset to adopt to protect against distress and facilitating well-being.

While the majority of PGI research has been conducted in the U.S.A. with college student samples, there is growing evidence supporting the reliability and validity of the PGI construct among non-Western undergraduate student samples in countries including Nigeria (Ogunyemi, & Mabekoje, 2007; Oluyinka, 2011), Pakistan (Ayub & Iqbal, 2012), and Iran (Joshanloo & Ghaedi, 2009). However, research has yet to explore whether individual differences in PGI are associated with lower levels of distress in non-Western community samples who have suffered significant adversity. This paper therefore puts the protective function of PGI to a stringent test in a unique population who suffered many traumas during the genocide. The Rwandan genocide was executed by Hutu government extremists in the April of 1994, and resulted in the deaths of over 800,000 people, including tens of thousands of children. The genocide resulted in the loss of

10% of the Rwandan population, and the subsequent 4 years of civil war displaced almost 4 million people (Pham, Weinstein, & Longman, 2004).

Past research has found that mental health disorders remain fairly prevalent among the survivors (Schaal, Weierstall, Dusingizemungu, & Elbert, 2012). Fourteen years after the genocide, a large-scale population survey estimated that 26.1% of the population had clinically diagnosable posttraumatic stress disorder (PTSD), and that these symptoms were often associated with depression, substance dependence, and physical discomfort (Munyandamutsa, Nkubamugisha, Gex-Fabry, & Eytan, 2012). In addition, Munyandamutsa et al. (2012) found that rates of PTSD were significantly higher among the survivors who were aged between 25-35 years (i.e., 11-20 years old during the 1994 genocide), had lost both parents or endured the murder of a close relative, lived in extreme poverty, and lived in the South province of Rwanda.

In this article, we investigated whether PGI is associated with functional impairment in daily life among genocide survivors in Rwanda. Based on research that demonstrates that PGI is a key facet of optimal well-being and is related to fewer symptoms of distress (Robitschek and Keyes, 2009; Weigold et al., 2013), we hypothesized that higher levels of PGI would be associated with lower levels of functional impairment while controlling for known predictors of functional impairment such as demographic information, depression and PTSD.

Method

Procedure

Participants were invited to take part in a study on well-being and mental health by 12 Rwandan research assistants that visited five districts of villages inhabited by genocide survivors. The five districts were selected by our local project coordinator based on budget considerations

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and the proximity of each district to his headquarters in Kigali. The research assistants recruited participants by visiting households and by approaching participants on the street to invite them to come and take part in the study in a local school in their village. Participation in the study was voluntary and informed consent was obtained from each participant before they completed the questionnaire. We took special steps to ensure that participants felt comfortable consenting of their own free will by working with our field research coordinator to make the consent form clear in its wording and highlighting the rights of the participants in the recruitment session. These consent procedures were approved both by the IRB at the University of Pennsylvania and the Rwandan Ethics Committee. We believe that these procedures were effective, because a number of participants did decline to participate.

Given that the participants were not very familiar with completing survey questions, they were first provided with instructions on how to answer items, and examples of how to indicate their response. The questionnaire was administered in written form – participants who were able completed the items independently after the training. Literacy was however not a requirement of participation, as this would seriously have impacted the generalizability of our findings. A research assistant therefore administered the questionnaire orally and recorded the responses for the participants who were unable to answer questions independently. All measures were presented in Kinyarwanda, the participants' native language. The measures were translated into Kinyarwanda and then back-translated into English by two bilingual research assistants who were fluent in both languages, and had prior experience translating mental health questionnaires. Discrepancies in translation were resolved in discussion with the second author and with the Kinyarwanda-speaking research team. In translating these measures, we were careful to ensure that suitable equivalence was established between the original and translated questionnaires by

following procedures recommended by cultural psychiatry researchers (see Jayawickreme et al., 2012a). The study took approximately 75 minutes to complete. Based on the recommendation of the Rwandan Ethics Committee, we did not compensate participants on an individual basis, and instead we gave a token of an appreciation to each district upon completion of the data collection.

Participants

Two hundred adult participants (97 males, 103 females) were recruited from five districts in three provinces of Rwanda — the districts of Bugesera in the East Province ($n = 51$), Kamonyi in the South province ($n = 48$), and Gasabo ($n = 56$), Kicukiro ($n = 19$), and Nyarugenge ($n = 26$) in the Kigali province of Rwanda. The mean age of participants was 29.40 years ($SD = 10.17$) with a range of 18 to 75 years of age.

Materials

Participants completed a questionnaire packet containing the following inventories: the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), the Posttraumatic Stress Symptom Scale – Self Report (PSS; Foa, Riggs, Dancu, Rothbaum, 1993), the World Health Organization Disability Assessment Schedule 2.0 (WHODAS-II; Janca, Kastrup, Katschnig, Lopez-Ibor Jr., Mezzich, & Sartorius, 1996), and the Personal Growth Initiative Scale (PGIS; Robitschek, 1998). Although it is preferable to use locally developed measures of mental health with non-Western populations, (Jayawickreme, Jayawickreme & Goonasekera, 2012; Jayawickreme, Jayawickreme, Atanasov, Goonasekera, & Foa, 2012), prior research has shown that genocide survivors do report symptoms of depression and PTSD using standard Western measures and that existing scales based on DSM-IV criteria are supported (Bolton, 2001; Lacasse, Forgeard, Jayawickreme, & Jayawickreme, 2014).

The 20-item CES-D asks about symptoms of depression during the past week on a 4-point Likert scale ranging "0" *rarely or none of the time* to "3" *Most or all of the time (5-7 days).* Scores on the CES-D are summed and range from 0 to 60, with scores of 16 or above indicating a likelihood of clinically significant depression. We summed together all the 20 items on the CES-D scale after first reverse scoring any necessary items (e.g., "I was happy" & "I felt hopeful about the future"). Radloff (1977) found the CES-D to have moderate internal consistency in three predominantly Caucasian samples (α = .84 to .90) and moderately good concurrent validity, correlating with other measures of depression at levels ranging from .50 to .70. The reliability of the CES-D scale in our sample was excellent (α = .89).

The 17-item PSS asks about symptoms of posttraumatic stress during the past week on a 4-point Likert scale ranging from "0" *not at all or only one time* to "3" *almost always or five or more times per week.* Scores on the PSS-SR are summed and range from 0 to 51 with scores of 13 or above indicating a likelihood of posttraumatic stress disorder. We summed together all the 17 items on the PSS scale. The PSS has been found to have good reliability both in American samples (e.g., Foa et al., 1993) and in war-effected, non-Western samples (e.g., Jayawickreme et al., 2012). The PSS also correlated highly with measures of psychopathology and trauma in Kurdish and Vietnamese refugees living in the United States (Hollifield et al., 2006) and in internally displaced Sri Lankans (Jayawickreme et al., 2012). The reliability of the PSS scale in our sample was excellent (α = .88).

The WHODAS-II is a 12-item self-report questionnaire that assesses activity limitations and participation restrictions over the last month. The questionnaire was developed to assess six different adult life tasks: 1) Understanding and communication; 2) Self-care; 3) Mobility (getting around); 4) Interpersonal relationships (getting along with others); 5) Work and household roles

(life activities); and 6) Community and civic roles (participation). Participants are asked to rate the extent to which they have difficulty engaging in a specific activity on a Likert scale of "0" (*none*) to "4" (*extreme or cannot do*). The goal of the WHODAS-II is to assess difficulties due to health conditions including diseases, illnesses, or injuries, mental or emotional problems and problems with alcohol or drugs. Total scores for global disability can range from 0 (no disability) to 48 (complete disability). We summed together the 12 items on the WHODAS-II scale. Federici, Meloni, and Lo Presti (2009) reviewed 54 studies that used the WHODAS-II and determined that this measure was a reliable instrument. Furthermore, the concurrent validity of the WHODAS-II has been similarly established across different patient populations in different countries (Andrews, Kemp, Sunderland, Von Korff, & Ustun, 2009). The reliability of the WHODAS-II scale in our sample was excellent ($\alpha = .87$).

The PGIS measures the extent to which the participant feels that she has a developed set of skills that enable her to feel competent in generating plans to pursue opportunities for self-improvement (e.g., *"I know how to change specific things that I want to change in my life" &" I have a specific action plan to help me reach my goals"*) using a 6-point Likert scale ranging from "1" *definitely disagree* to "6" *definitely agree*. Following guidelines set forth in the PGIS scale (Robitschek et al., 2012), we averaged the 9 items together to create a mean score to use in our analyses. Robitschek (1999) has shown that the PGIS scale has strong internal consistency and concurrent and discriminant validity. The reliability of the PGIS scale in our sample was excellent ($\alpha = .85$).

Data Analytic Plan

To examine whether higher levels of PGI were associated with lower levels of functional impairment, we performed a block entry (set-wise) regression analysis in which we entered our covariates into the first step of the regression (i.e., age, gender, district, depression, and PTSD), and PGI into the second step of the model. To confirm our hypothesis, we would need to observe that the addition of PGI resulted in a significant increase in the proportion of variance accounted for by the regression model, and PGI was an independent and significant predictor of functional impairment while controlling for the influence of the other variables. We selected our covariates based on past research; Munyandamutsa et al. (2012) found that younger participants and living in the Southern province predicted a greater number of PTSD symptoms, and research (although conducted in the West) has consistently observed that experiencing greater levels of depression and PTSD is associated with greater functional impairment (McKnight & Kashdan, 2009).

We restricted our analysis to the 178 participants in our sample who had fully complete data by using a conservative strategy of listwise deletion. Participants with missing data were not found to differ from those with complete data in age $t(197) = 1.64$, $p = .10$, gender $X^2(1, N = 199) = 3.19$, $p = .07$, depression $t(195) = 0.53$, $p = .60$, functional impairment $t(197) = 0.63$, $p = .53$, and PGI $t(178) = 0.66$, $p = .51$. However, participants with missing data did differ from those with complete data in PTSD $t(195) = 2.20$, $p = .03$, indicating that participants with missing data reported a greater number of PTSD symptoms ($M = 20.74$, $SD = 11.07$) than those with complete data ($M = 15.63$, $SD = 9.44$). We discuss the implications of this finding in the general discussion.

Results

Preliminary Analyses

The means and standard deviations of the all variables are in Table 1. Our participants reported fairly high levels of both depression and PTSD that met clinical criteria. Specifically, 69% of the participants reported a score of 16 or greater on the CES-D, indicating the likelihood of clinically significant depression and 58.9% of participants reported a score of 13 or more on the PSS, indicating the likelihood of PTSD.

Table 2 presents the bivariate correlations between all the core variables included in the analysis. As expected, the correlations between depression (CES-D) and functional impairment (WHODAS-II) and PTSD (PSS) and functional impairment were both positive and significant. Participants reported experiencing greater impairment when reporting higher levels of depression or PTSD symptoms. In contrast, PGI was significantly and negatively correlated to all measures of impairment and distress. Table 2 also presents the correlations between age, gender and all of the personality and mental health variables. Older participants reported less PGI and females tended to report more PGI. Additionally, the men tended to report a greater number of depression and PTSD symptoms than females.

We also examined the correlations between the PGI, mental health variables and the provinces where the participants lived. We first grouped our five districts into separate Eastern, Southern, and Kigali provinces. The Eastern province was formed with the Bugesera district, the Southern province was formed with the Kamonyi district, and the Kigali province was formed with the Gasabo ($n = 56$), Kicukiro ($n = 19$), and Nyarugenge ($n = 26$) districts. We created two dummy-coded variables. The first variable compared the Southern province to the Eastern province and the second variable compared the Southern province to the Kigali province. As seen in Table 3, the participants in the Southern province reported greater functional impairment than those in the Kigali province.

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Main Hypothesis

To examine whether PGIS was inversely related to functional impairment, we performed a block entry (set-wise) regression analysis in which all the covariates (i.e., age, gender, dummy-coded province, CES-D, and PSS) were entered into block 1 and the PGIS was entered into block 2. The covariates accounted for a significant amount of the variance in functional impairment, R^2 = 20%, $F(6, 188) = 7.84$, $p < .01$. As can be seen from Table 4, both PSS and the two dummy-variables for the provinces were independent predictors of functional impairment. Participants who reported a greater number of PTSD symptoms and lived in Southern provinces of Rwanda reported greater functional impairment in their daily activities. The addition of PGIS in block 2 while controlling for all covariates explained an additional 3.9% of variance, $F(1, 187) = 9.63$, $p < .01$. As expected, PGI was negatively associated with functional impairment, indicating that higher levels of PGIS were associated with lower levels of reported functional impairment while controlling for all mental health and demographic factors. The PSS and dummy-coded province variables remained significant predictors of functional impairment in block 2.

Discussion

In this article, we investigated the protective function of high levels of PGI among a genocide affected population. We found that participants who reported higher levels of PGI also reported lower levels of functional impairment in their daily life while controlling for depression, PTSD and demographic information. These results suggest that PGI may be an adaptive mindset to adopt in adverse and challenging situations to protect against significant impairment in daily activities. Although, the mechanisms through which PGI functions were not investigated in this study, it is possible that the individuals who utilize the skills characteristic of PGI experience a

greater sense of agency and confidence in their ability to change their present circumstances. It is also feasible that PGI works similarly in reducing psychological distress as behavioral activation therapy (Jacobson, Martell, & Dimidjian, 2001), in so far as PGI encourages individuals to seek out activities that they enjoy and that connect them to others, which in turn could ward off some of the debilitating effects of psychopathological conditions. This does not imply that individuals are not suffering, indeed the majority of participants in our sample met clinical criteria for PTSD and depression. However, our results also demonstrate that PGI independently predicted lower impairment when controlling for these symptoms, suggesting that the beliefs and skills inherent to PGI might eventually encourage individuals to think and behave in more adaptive ways that can help preserve functioning. Thus, in addition to treatments that reduce or lessen symptoms of distress, there may also be tangible benefits that result from acting in ways that promote well-being and self-improvement (Blackie et al., 2014).

Our results are consistent with past research that has documented the prevalence of post-genocide mental health disorders (Munyandamutsa et al., 2012; Schaal et al., 2012), in so far as rates of PTSD and depression were fairly high. Similar to Munyandamutsa et al. (2012) we also found higher rates of distress in the southern provinces, suggesting that there are regional differences in the severity of psychopathological symptoms. However, our study was also novel, as it revealed that certain dispositional characteristics – PGI (Robitschek et al., 2012) could protect individuals against impairment. While this work is still preliminary, it does address an important and overlooked issue in the literature regarding the natural character strengths and resources that an individual can use to cope with adverse situations. Thus, our results imply that individuals might be able to flexibly respond to the demands of the situation by changing their

mindset and behavior to promote outcomes that reduce distress and promote well-being (Fleeson, 2001; Fleeson, et al., 2002).

These findings have implications for the development of targeted intervention programs that are designed specifically to enhance the individual's well-being by strengthening their own personal resources (Blackie et al., 2014). Thoen and Robitschek (2013) designed an intervention to increase individuals' levels of PGI. The program has two phases: an educational phase that explains the relevance of PGI to daily life, and a growth activity phase. This intervention was successful at increasing participants' level of PGI compared to control conditions. Although this intervention is new and further research is needed to determine the effectiveness of the intervention in enhancing well-being related-outcomes, it might prove to be a promising program for enhancing an individual's own natural inclinations and desire to strive for self-improvement.

We should note that PGI was a construct developed among Western populations, and that more work on assessing the equivalence of PGI in different cultural contexts needs to be done to increase the validity of this research before an intervention can be developed (Jayawickreme et al., 2012c). There is nascent evidence demonstrating the reliability and validity of the construct among non-western populations including Nigeria, Pakistan, and Iran (Ayub & Iqbal, 2012; Joshanloo & Ghaedi, 2009; Ogunyemi, & Mabekoje, 2007; Oluyinka, 2011). In support of the relevance of PGI to Rwandan culture, we have qualitative data collected among a population of Rwandan genocide survivors that indicates that participants believe that having the ability to set goals that enable personal growth is an important component of well-being (Jayawickreme, Blackie, Hanson, Weiss & Jayawickreme, 2014).

We acknowledge possible social desirability concerns associated with collecting survey data among population low in literacy. Given that we wanted to obtain a representative sample of genocide survivors, we did not exclude participants on the basis of literacy; instead, we gave participants an opportunity to answer these questions orally. To attempt to mitigate the social desirability effects of the test administrator on the respondents, we trained our research assistants in how to ask and record responses, the participants were assured of the confidentiality of their data, and the questionnaire packet was sealed in envelopes immediately upon completion. An additional limitation of this sample is that some of our participants would have been very young when the genocide occurred; it is possible that the distress reported by these participants may be due more to the impact of familial/community memories, or of the hardships experienced since the genocide. However, evidence suggests that childhood trauma that occurs within the first 2 years of life may still be encoded in memory (Cordin, Pipe, Sayfan, Melinder, & Goodman, 2004) and therefore have an effect on mental health later in life. We argue that while these participants may not be able to accurately recall specific events from the genocide, this does not undermine the impact of them on their lives given the severity of the traumas inflicted.

Finally, we acknowledge that our study relied on a cross-sectional convenience sample, and therefore it is unclear the degree to which the results of our study generalize to the broader population in Rwanda. For example, although we found that participants with some missing data did not differ from participants with complete data in many respects (e.g., age, gender, PGI, and depression symptoms), they did report a significantly greater number of PTSD symptoms. It is therefore possible that our results are based on a restricted sample of genocide survivors who were less impaired and already functioning comparatively well. If this is the case, then PGI may not have any protective effect among individuals who are exhibiting severe symptoms of distress

and impairment. The results would therefore need to be replicated in another sample (and ideally one that was representative of the population) before we can be fully confident that PGI is an adaptive mindset that should be promoted. Furthermore, in past work (Blackie et al., 2014) we have argued that interventions that promote well-being are likely to be most effective after traditional treatments that reduce severe symptoms of distress.

It is important to keep in mind that these results are only preliminary and future research would need to replicate these findings before an intervention with such a population is developed and implemented. It would be important for future work to obtain a measure of current stressors, especially given that the measures of psychopathology that we used only asked for participants to report on recent symptoms that they had experienced in the past week or month. It is often the case, especially in the aftermath of collective traumas like ethno-political conflict that the stress is not lessened when the conflict ends (Miller & Rasmussen, 2010). It is particularly important that this limitation is addressed given that the genocide occurred 16 years prior to data collection, and more current stressors could be predictive of symptoms of psychopathology. Finally, it would be valuable for future research to compare different personal characteristics against PGI. An intervention should be designed based on the characteristics that account for the greatest proportion of variance in the desired outcomes. Nevertheless, while this is preliminary work and future research is needed to replicate and extend these findings, our study does suggest that PGI (Robitschek, 1998) may represent one promising characteristic worthy of further consideration.

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Table 1:

Descriptive Statistics and Psychometric Properties of the Major Study Variables

Variable	*N*	*M*	*SD*	Range	α
WHO-DAS II	199	23.70	8.53	36.00	0.87
PGIS	199	4.34	0.89	5.00	0.85
CES-D	197	21.73	10.47	47.00	0.89
PSS	197	16.13	9.70	42.00	0.88

Note. WHO-DAS II = World Health Organization Disability Assessment Schedule 2.0; PGIS = Personal Growth Initiative Scale; CES-D = The Center for Epidemiological Studies Depression Scale; PSS = Posttraumatic Stress Symptom Scale - Self Report

Table 2:

Bivariate Correlation Matrix for the Major Study Variables

Variable	PGIS	CES-D	PSS	Age	Gender
WHO-DAS II	- .33**	.35**	.38**	.07	-.09
PGIS	--	-.36**	-.27**	-.16*	.14*
CES-D	--	--	.68**	.01	-.15*
PSS			--	.00	-.13^{+}
Age				--	-.03
Gender					--

Note. WHO-DAS II = World Health Organization Disability Assessment Schedule 2.0; PGIS = Personal Growth Initiative Scale; CES-D = The Center for Epidemiological Studies Depression Scale; PSS = Posttraumatic Stress Symptom Scale - Self Report. ** $p < .01$, * $p < .05$, $^{+}$ $p < .10$

Table 3:

Bivariate Correlation Matrix for the Major Study Variables and Rwandan Provinces

Variable	WHO-DAS II	PGIS	CES-D	PSS	Age	Gender
Eastern Province	.03	-.03	-.08	.02	.14*	.01
Kigali Province	-.21**	.07	-.10	-.12	-.07	.04

Table 4:

Regression Analysis with Functional Impairment as the Dependent Variable

Regression Block	Variable	B	Std. Error	Beta	P Value
1	CES-D	0.12	0.07	0.15	0.11
	PSS	0.21	0.08	0.24**	0.01**
	Eastern Province	-2.83	1.61	-0.15	0.08
	Kigali Province	-4.06	1.40	-0.24**	0.01**
	Age	0.09	0.06	0.10	0.12
	Gender	-0.20	1.11	-0.01	0.86
2	PGIS	-2.05	0.66	-0.22	0.01**
	CES-D	0.06	0.07	0.08	0.41
	PSS	0.20	0.08	0.23	0.01**
	Eastern Province	-2.93	1.58	-0.15	0.07^+
	Kigali Province	-4.01	1.36	-0.24	0.01**
	Age	0.06	0.06	0.07	0.29
	Gender	0.09	1.09	0.01	0.93

Note. WHO-DAS II = World Health Organization Disability Assessment Schedule 2.0; PGIS = Personal Growth Initiative Scale; CES-D = The Center for Epidemiological Studies Depression Scale; PSS = Posttraumatic Stress Symptom Scale - Self Report. The Eastern Province is a dummy-coded variable comparing the Southern and Eastern provinces of Rwanda and the Kigali province is a dummy-coded variable comparing the Southern and Kigali provinces of Rwanda.
** $p < .01$, * $p < .05$, $^+ p < .10$