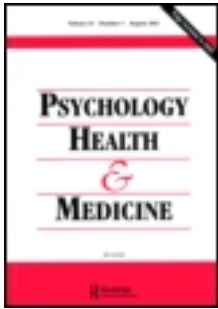


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Loss and growth: Identity processes with distinct and complementary impacts on well-being among those living with chronic illness

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The diagnosis and treatment of any chronic illness are a major source of stress for most individuals. Although many individuals living with chronic illness report experiencing growth that arises from this experience, studies have revealed mixed results regarding the association between reported growth and other aspects of psychological well-being. This pilot study examines the complementary and buffering influences of self-growth on self-loss in perceptions of physical and mental health among individuals living with HIV ($N = 60$). The sample was comprised of a racially/ethnically diverse sample of men and women ranging in age from 27 to 62. Measures included impact of illness on Self-Concept Scale, the Medical Outcomes Study HIV Health Survey, the HIV Symptom Index, and the Center for Epidemiological Studies Depression Scale. Regression analyses were conducted to examine the impact of self-growth and self-loss on self-reported bothersome symptoms and depression, controlling for demographic covariates and physical health. Self-loss accounted for a significant proportion of variance in both bothersome symptom reports and depression, after controlling for physical health. In multivariate analysis, self-growth appeared to buffer the negative impact of self-loss on bothersome symptoms, but not on depression. These data suggest that self-loss is a critical construct in understanding adaptation to chronic illness, and that identity processes may influence symptom perception and mental health outcomes above and beyond the impact of traditional measures of health status.

Keywords: benefit-finding; self-loss; adaptation to chronic illness; HIV; identity

The diagnosis and treatment of any potentially life-threatening disease can be a major source of stress and anxiety, with long-lasting psychological and physical effects (Rothschild, 2000; Stanton & Revenson, 2011). For some, this anxiety can inhibit a return to baseline functioning, resulting in enduring symptoms and experiences which have been described as post-traumatic stress (Hefferson, Grealy, & Mutrie, 2009). Others not only recover from the stress of diagnosis but come to see their experience as a positive influence in their lives (Carver, 1998; Nolen-Hoeksema & Davis, 2002; Tedeschi & Calhoun, 1998). Post-traumatic growth describes the process whereby individuals experience positive transformation as a result of their struggle with adversity (Tedeschi & Calhoun, 1998). Reports of post-traumatic growth have been found across

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a range of chronic illnesses, including HIV (Danoff-Burg & Revenson, 2005; Evers et al., 2001; Siegel & Schrimshaw, 2000; Urcuyo, Boyers, Carver, & Antoni, 2005).

Studies have revealed mixed results regarding the association of post-traumatic growth with other aspects of psychological well-being. Growth in the face of adversity is associated with less depression, yet appears unrelated to other indicators such as global distress, quality of life, and subjective physical health (Algoe & Stanton, 2009; Helgeson, Reynolds, & Tomich, 2006; Stanton, Bower, & Low, 2006). The experiences of loss is explicitly recognized in the literature on post-traumatic growth, which acknowledges that negative events and their sequelae remain undesirable, even if positive changes have resulted from them (Fitzpatrick, Simpson, & Smith, 2010; Habermann, 1996; Tedeschi & Calhoun, 2004). The bulk of this literature assumes that growth and other benefits arise from losses, suggesting that growth and loss lie on opposite sides of a psychological spectrum. However, research indicates that people may experience both processes simultaneously, such that individuals who report growth may also experience distress during processes of adaptation (Lepore & Revenson, 2006; Siegel & Schrimshaw, 2000).

As such, a focus on growth alone may not be sufficient to understand the impact of chronic illness on identity and psychological well-being. Research on the independence of positive and negative affective states (Keyes, Shmotkin, & Ryff, 2002; Larsen, McGraw, & Cacioppo, 2001; Russell & Carroll, 1999) suggests that perceptions of growth and loss may be orthogonal constructs, operating independently, and in interaction to influence well-being. This approach is consistent with recent research suggesting that self-growth may serve as a stress-buffer in moderating the disruptive aspects of negative affective reactions to stress among individuals living with chronic illness (Golub, Rendina, & Gamarel, 2013; Tran, Wiebe, Fortenberry, Butler, & Berg, 2011).

This pilot study was intended to extend these findings and examine the impact of self-loss and self-growth on psychological well-being among a diverse sample of adults living with HIV. Specifically, we hypothesized that self-growth would serve as a stress-buffer in moderating the effects of self-loss on two types of illness-related distress: bothersome symptoms and depression.

Method

Participants

The sample consisted of 60 individuals living with HIV ranging in age from 27 to 62, with a median age of 49 years. The detailed methods of this study have been published previously (Golub, Tomassilli, & Parsons, 2009). The sample included 40 males and 20 females, with 33% ($n = 20$) identifying as gay or bisexual. The majority of participants (78%) were Black, 13% were Latino/a, 7% were white, and 2% were multiracial. Seventeen participants (28%) had less than a high-school degree, and the majority of participants (60%, $n = 36$) had annual household incomes under \$15,000. Time since diagnosis ranged from under one to 24 years (median = 13).

Procedures

Participants completed a quantitative survey via Audio Computer-Assisted Self-Interviewing (ACASI). Participant visits averaged an hour and a half, and

participants were compensated \$40. The study was approved by the intuitional review board of the university.

Measures

Growth and loss

The Impact on Self-Concept Scale (ISCS; Golub et al., 2013) assesses participants' perceptions of the ways in which living with HIV impacts their self-concept, and includes a self-growth subscale (e.g. "Living with HIV has taught me that I can handle anything"; $\alpha = .68$), and a self-loss subscale (e.g. "Having HIV has made me lose part of who I am"; $\alpha = .88$).

Physical health

Participants completed the physical health component score of the Medical Outcomes Study – HIV Health Survey (MOS-HIV; Wu, Revicki, Jacobson, & Malitz, 1997), with higher scores indicating better physical health.

Symptom severity

The HIV Symptom Index (Justice et al., 2001) was used to assess physical symptoms associated with HIV and their severity over the past month.

Depression

Participants completed the 20 item Center for Epidemiologic Studies Depression Scale (CESD-D; Radloff, 1977), one of the most widely used measures of depressive symptomatology in the field of HIV research ($\alpha = .85$).

Statistical analyses

Correlations were examined to identify potential covariates and to explore demographic differences in study variables. Hierarchical regression analyses were conducted to examine the extent to which self-growth, self-loss, and their interaction were associated with symptom severity and depression, over and above the impact of general physical health. We excluded 11 participants from analyses due to missing data on their number of years since diagnosis with HIV, which was an important covariate included in all analyses.

Results

Bivariate correlations revealed no significant associations between self-growth and demographic variables (Table 1). Men reported higher average self-loss scores compared to women. A one-way ANOVA of self-loss scores by gender-sexual orientation (gay/bisexual men, heterosexual men, and women) was significant, $F(2,57) = 3.54$, $p < .05$, and *post-hoc* tests indicated that the heterosexual men had significantly higher self-loss scores compared to female participants. As such both gender and sexual orientation

Table 1. Pearson correlation coefficients, means, standard deviations, percentages of study variables.

	1	2	3	4	5	6	7	8	9	10	11
Growth scale	–										
Loss scale	–.15	–****									
Bothersome symptoms	–.25	.53	–								
Depression	–.26	.62****	.48**	–							
MOS-physical health	.23	–.58****	–.60****	–.56****	–						
Gender ^a	.03	–.39**	–.06	–.44**	.11	–					
Sexual orientation ^b	.01	.12	.18	.32*	–.16	–.51****	–				
Age	.23	–.28	–.18	–.23	.00	–.02	–.07	–			
Years since diagnosis	–.18	.26	.10	.08	–.13	–.13	.07	.02	–		
Education ^c	.08	.20	.16	.13	–.19	–.28	.25	.25	.06	–	
Income ^d	–.01	.07	.05	–.11	–.12	.08	–.09	.19	–.04	.20	–
M%	4.49	2.63	4.98	15.19	47.64	32.7	34.7	48.02	13.27	22.4	28.6
SD	1.36	1.28	4.36	9.54	10.22	–	–	6.84	5.46	–	–

Notes: MOS – Medical Outcomes Study.

^aGender was coded as 0 = male and 1 = female with percent female presented as the mean.^bSexual orientation was coded as 0 = heterosexual and 1 = gay/bisexual, with percent gay presented as the mean.^cEducation was coded as 1 = less than B.A., 2 = B.A. or higher with percent having a B.A. or higher presented as the mean.^dIncome was coded as 1 = < \$15,000, 2 = ≥ \$15,000 with percent earning less than \$15,000 presented as the mean; for income, $n = 43$.* $p \leq .05$; ** $p \leq .01$; *** $p < 0.001$.

Table 2. Multiple regression analyses testing growth, loss, and the growth * loss interaction predicting bothersome symptoms and depression.

Predictor variables	Bothersome symptoms		Depression	
	β	SE	β	SE
<i>Step 1</i>	$\Delta R^2 = .04, \Delta F(3, 45) = .67$		$\Delta R^2 = .21, \Delta F(3, 44) = 3.79^*$	
Gender	.26	(1.29)	-.20	(2.67)
Sexual orientation	.20	(1.18)	.17	(2.45)
Years since diagnosis	.00	(.09)	-.12	(.19)
<i>Step 2</i>	$\Delta R^2 = .33, \Delta F(1, 44) = 22.89^{***}$		$\Delta R^2 = .26, \Delta F(1, 43) = 21.19^{***}$	
MOS physical health	-.36*	(.06)	-.28*	(.13)
<i>Step 3</i>	$\Delta R^2 = .09, \Delta F(2, 42) = 3.64^{**}$		$\Delta R^2 = .10, \Delta F(2, 41) = 4.98^*$	
Growth	-.21	(.38)	-.16	(.79)
Loss	.33*	(.52)	.39**	(1.08)
<i>Step 4</i>	$\Delta R^2 = .06, \Delta F(1, 41) = 4.64^{**}$		$\Delta R^2 = .00, \Delta F(1, 40) = .15$	
Growth \times Loss	-.26*	(.34)	.05	(.72)

Notes: All coefficients displayed are the values estimated in the final step of the model.
 n = 48.

Gender is coded as 0 = male, 1 = female; sexual orientation is coded as 0 = straight, 1 = gay/bisexual.
 * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$.

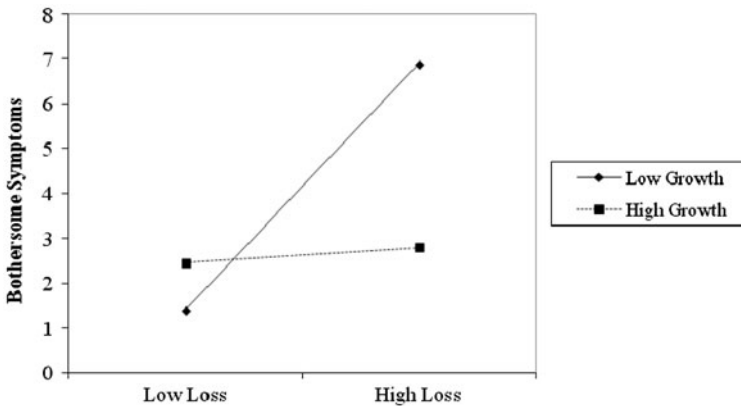


Figure 1. Self-growth moderates the impact of self-loss on number of bothersome symptoms.

were included in all multiple regression models. Self-loss was also marginally associated with years since HIV diagnosis.

There were no significant bivariate associations between self-growth and any of the illness-related variables. Self-loss was positively associated with bothersome symptoms and depression, and negatively associated with physical health. Bothersome symptoms and depression were also strongly negatively associated with physical health scores.

Results from both regression analyses are presented in Table 2. After adjusting for demographic factors and physical health scores, self-growth and self-loss accounted for 9% of the variance in bothersome symptoms. The interaction between self-growth and self-loss accounted for an additional 6% of the variance, suggesting that the impact of self-loss is experienced most strongly among those who report low levels of self-growth

(Figure 1). In the model predicting depression, self-growth and self-loss scores accounted for an additional 10% of variance, over and above demographic factors and physical health scores. Only self-loss was significantly associated with depression, and there was no significant interaction between self-growth and self-loss.

Discussion

In this sample of individuals living with HIV, perceptions of the impact of illness had important impacts on two critical components of health-related quality of life: bothersome symptoms and depression. At the bivariate level, self-loss was significantly associated with these factors, while self-growth was not. In multivariate analysis, self-growth appeared to buffer the negative impact of self-loss on bothersome symptoms, but not depression. These findings suggest that self-growth and self-loss are not necessarily orthogonal constructs, and remain critical factors in understanding the impact of illness-related perceptions on experiences of physical and mental health.

It is important to note that although self-loss was associated with physical health scores, its association with bothersome symptoms and depression appeared independent of that relationship. Self-loss accounted for a significant amount of variance in both bothersome symptoms and depression after controlling for physical health, indicating that its psychological contribution to illness perception and depression exists over and above its relationship to objective physical health.

Self-loss and self-growth scores were uncorrelated in this sample, supporting previous findings that these processes may be orthogonal or distinct (Golub et al., 2013). In this analysis, self-growth served as a stress-buffer by moderating the association of self-loss on the perception of bothersome symptoms. The stress-buffering role of self-growth has been theorized in a number of studies (Pakenham, 2005; Siegel & Schrimshaw, 2007; Tran et al., 2011), and these data provide insight into this research by demonstrating that self-growth can be simultaneously exist in the presence of self-loss.

These data are subject to limitations, including relying on a small convenience sample of majority Latino and/or African-American adults who responded to self-report rather than objective health measures. As such, caution is warranted in interpretation of regression coefficients, and future research is needed to more fully examine self-growth and self-loss among HIV-positive adults. However, these data suggest a critical role for individuals' experience of the impact of illness on self-concept in their *perception* of both physical symptoms and overall quality of life. In much of the empirical and theoretical literature, the loss associated with the traumatic event or diagnosis is assumed rather than assessed (Sears, Stanton, & Danoff-Burg, 2003). These findings suggest that one particular type of loss – perceived loss of identity or sense of self – and its distinctiveness from self-growth may be crucial to understanding the impact of chronic illness on health-related quality of life.

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