



Posttraumatic growth as a predictor of health-related quality of life among people living with HIV/AIDS

Desmond Uchechukwu Onu, Chuka Mike Ifeagwazi, & Mary Basil Nwoke

Department of Psychology, Faculty of the Social Sciences, University of Nigeria, Nsukka.

ARTICLE INFO

Keywords:

Anti-retroviral treatment,
Health-related quality of life,
Health policy,
HIV/AIDS,
Nigeria,
Posttraumatic Growth.

ABSTRACT

Substantial literature exists on trauma and health-related quality of life (HRQoL) of people living with HIV/AIDS (PLWHA), but less attention has been given to growth stemming from the trauma of HIV/AIDS diagnosis vis-a-vis the patients' wellbeing. This study examined whether posttraumatic growth (PTG) predicted HRQoL among PLWHA in the South-Eastern Nigeria. Two hundred and one persons (Mean age 40.1 years, $SD = 10.5$; 39% male, 61% female) managed for HIV/AIDS in the University of Nigeria Teaching Hospital (UNTH), Ituku, Ozalla, Enugu State, were participants in this study. Participants were excluded if they were not diagnosed of HIV/AIDS for at least one year and if they were not receiving anti-retroviral treatment for a minimum period of 6 months. Pearson correlations and linear regression analyses were used to examine the hypotheses. Results showed that PTG was significantly associated with cognitive symptoms dimension of the HRQoL. Results also showed that PTG significantly predicted cognitive symptoms dimension of the HRQoL. This study indicated that positive psychological experiences resulting from the struggle to overcome the trauma of HIV/AIDS diagnosis has positive influence towards alleviating the health worries and mental distress experienced by PLWHA. Our findings underscore the importance of examining not only the broader context of HIV/AIDS, but also individual differences in PTG, when seeking to understand factors that influence HRQoL among PLWHA

Introduction

The evaluation and maintenance of quality of life (QoL) of patients living with chronic illnesses, such as HIV/AIDS is one of the important issues in healthcare for several reasons, some of which include allocation of resources and evaluation of impacts of programme (s) on the patient's concern. It is also particularly useful (in the case of HIV/AIDS) for monitoring the level of disease progression (Reis, Santos & Gir, 2012). QoL in relation to health also known as health-related quality of life (HRQoL) has become a concern for researchers, policy makers and health practitioners given its relevance in assessment of people in different health conditions towards understanding their health needs for improved health outcome planning (Osoba, 2011). Health-related quality of life is the effects of disease and its treatment on the patient (Nilsson, 2012).

Diagnosis, treatment and living with potentially terminal and highly stigmatised illness such as HIV/AIDS can be a source of traumatic stress impacting on the victims' HRQoL (Adewuya et al., 2009). In effort to cope, victims of the aversive life event(s) (such as diagnosis of HIV/AIDS) may develop certain personal positive psychological changes known as post traumatic growth (PTG) (Tedeschi & Calhoun, 1996). Posttraumatic growth is defined as a subjective experience of positive psychological change, reported by an individual because of struggling with stressful life events, trauma, or highly challenging life situations (Tedeschi & Calhoun, 2004). Although HIV/AIDS can

induce some level of traumatic stress which can impact negatively on HRQoL of PLWHA, the victim's experience of PTG may enhance HRQoL. Identification of factors that will enhance HRQoL among PLWHA has improved well-being implications (Nguyen, Mcneil, Han & Rhodes, 2016). Thus, in this paper, we examined the role of PTG in multidimensional HRQoL among outpatients living with HIV/AIDS who were on highly active antiretroviral therapy (HAART). The dimensions of HRQoL in the present study are as follows: physical health, social relationship, cognitive symptoms, and treatment impact (see Duracinsky et al., 2012). We therefore hypothesized as follows:

1. Posttraumatic growth will significantly predict physical health dimension of health-related quality of life among people living with HIV/AIDS.
2. Posttraumatic growth will significantly predict social relationship dimension of health-related quality of life among people living with HIV/AIDS.
3. Posttraumatic growth will significantly predict cognitive symptoms dimension of health-related quality of life among people living with HIV/AIDS.
4. Posttraumatic growth will significantly predict treatment impact dimension of health-related quality of life among people living with HIV/AIDS.

Corresponding author

Desmond Uchechukwu Onu, Department of Psychology, University of Nigeria, Nsukka, Enugu state, Nigeria.
Email: desmond.onu@unn.edu.ng

Method

Participants

Participants in this study were 201 outpatients (mean age 40.1 years, *SD* = 10.5, 39% male, 61% female) managed for HIV/AIDS in the University of Nigeria Teaching Hospital (UNTH), Ituku, Ozalla, Enugu State, Nigeria. Participants had minimum School Certificate education level and were diagnosed of HIV+/AIDS status for at least one year. They were also receiving HAART treatment for a minimum period of 6 months. This was to allow enough time for full experience of the side effects of HAART. Patients whose time of diagnoses of HIV/AIDS was less than 12 months were not also allowed to participate given that Zhou, Chen, Zeng and Wu (2015) identified the period of 12 months for the development of PTG. Also, patients who could not read and understand the content of the questionnaire were also excluded. Participants were selected using availability sampling method. The study was approved by the UNTH ethical research review committee (NHREC/05/01/2008B-FWA00002458-1RB00002323).

Measures

Health-related quality of life was measured using Patients Reported Outcome Quality of Life -HIV (PROQOL - HIV). Patient-Reported Outcome Quality of Life-HIV is a-four factor measure (physical symptoms, health concern/mental distress, intimate/social relationship and treatment impact). The key statement that precedes all the items was: "During the last two weeks, because I am HIV positive, ...". Responses were grouped into "never, rarely, sometimes and always", and calculated using the method described in Duracinsky et al. (2012) with higher score indicating better HRQoL. PROQOL-HIV's 52 days test-retest reliability correlation coefficient in a French sample was .86. When compared with another health-related quality of life measure known as EQ-5D in terms of its global score, the correlation was .48, *p*<.05 (Duracinsky et al., 2012). The internal consistency reliability in the present study were very high ($\alpha = .97, .87, .81, .91$ for physical symptoms, health concern/mental distress, intimate/social relationship and treatment impact, respectively).

Posttraumatic growth was measured using Posttraumatic Growth Inventory - Short form (PTGI-SF) (Cann,

Calhoun, Tedeschi, Triplett, Vishnevsky, & Lindstrom, 2010). Responses to the items of the scale were made on a 6-point response scale as follows: I did not experience this change as a result of my crisis (1), I experienced this change to a very small degree as a result of my crisis (2), I experienced this change to a small degree as a result of my crisis (3), I experienced this change to a moderate degree as a result of my crisis (4), I experienced this change to a great degree as a result of my crisis (5), I experienced this change to a very great degree as a result of my crisis (6). As described in Cann et al. (2010), higher score indicates greater PTG. The present researchers changed the word "crisis" to "health condition" to suit the respondents' specific health challenge. Posttraumatic Growth Inventory-Short Form had a minimum Cronbach's α of .63, and its correlation with the Posttraumatic Growth Inventory was over .90 (Cann et al., 2010). In a principal component analysis, the PTGI-SF accounted for the 64% of the total variance, which represents evidence a good construct validity of PTGI-SF (Cann, et al., 2010). Cronbach's α in the current sample yielded a good reliability index ($\alpha = .92$).

Data analysis

This is a survey research and cross-sectional design was adopted in the study. Pearson's correlation (*r*) analysis was conducted among the study's demographic variables, predictor and dependent variable while linear regression analysis was applied for hypothesis testing.

Results

Pearson's correlation in Table 1 indicated that none of the demographic variables (gender, age, marital status, occupation, level of education and comorbidity of other sicknesses), was related to HRQoL. PTG was positively related to cognitive symptoms domain of HRQoL. Those who reported experiencing HIV-related growth also reported higher HRQoL in the cognitive dimension.

Results of regression analysis (Table 2) showed that PTG predicted cognitive symptoms ($\beta = .72, 95\% CI [3.98, 5.11], t = 14.63, p < .001$). However, PTG did not significantly predict physical health symptom, social relationships and treatment impact symptoms dimensions of HRQoL.

Table 1. Correlations between demographic variables, PTG and HRQoL dimensions

Variables	1	2	3	4	5	6	7	8	9	10
1 Age	-	-.29**	.84	.19**	.32**	.04	-.09	-.01	-.05	.02
2 Gender		-	-.10	-.21**	-.10	-.15*	.04	-.04	-.06	.09
3 Education			-	-.08	.14*	.02	-.04	.06	-.01	.09
4 Occupation				-	.12	.01	.10	.01	.11	.08
5 Comorbidity					-	.03	.01	.07	.01	.09
6 PTG						-	.08	-.02	.72**	-.01
7 Physical Health							-	.13	-.12	.10
8 Relationships								-	.07	.38**
9 Cognitive symptoms									-	.04
10 Treatment Impact										-

Note: **p*<.05; ***p*<.01; ****p*<.001.

Table 2: Linear regression results for role of PTG in the dimensions of HRQoL

Variable	Physical symptoms			Relationship			Cognitive symptoms			Treatment impact		
	<i>B</i>	<i>t</i>	95%CI	<i>B</i>	<i>t</i>	95%CI	<i>t</i>	95%CI	β	<i>t</i>	95%CI	
PTG	-.08	-1.17	-9.9, 2.5	-.02	-.24	-4.3, 3.4	.72	14.63**	3.9, 5.1	-.01	-.17	-4.5, .38

Note: PTG = Posttraumatic growth; Relationship symptoms = Intimate and social relationship; Cognitive symptoms = health concern and mental distress; ****p*<.001; ***p*<.01; **p*<.05

Discussion

The goal of this study was to examine the role of PTG in the dimensions of HRQoL in a sample of PLWHA in Nigeria. The associations of PTG and HRQoL with relevant demographic variables were also investigated. PTG was positively associated with the cognitive domain of HRQoL and it was shown to be a significant predictor of this domain. Individuals who experienced growth reported less health concerns and mental distress, hence the third hypothesis was confirmed. This finding is in accord with Sawyer, Ayers and Field's (2010) meta-analysis which found a positive association between experience of PTG and mental health as well as overall psychological well-being among a sample involving AIDS patients. Since PTG involves being left in a better psychological state as an outcome of struggle with an adverse situation (Calhoun & Tedeschi, 1998; Tedeschi & Calhoun, 2004; Linley & Joseph, 2004; Christopher, 2004), PLWHA who experienced this positive state of mental health seem to leverage on it to enhance their well-being, especially on the cognitive domain. This could imply that living through a traumatic event avails the victim the opportunity of evaluating and appreciating life experience and possibly arriving at a better resolution to view life differently- perhaps a bit more positively. Our finding also supports the shattered assumption theory of PTG (Janoff-Bulman, 1992) which stated that although humans believe that the world is benevolent, the world is meaningful, and the self is worthy, the experience of a traumatic event(s) (such as being diagnosed with HIV/AIDS) tends to shatter these beliefs about the self and the world, and that repairing this view leads to experience of positive mental health (PTG).

Contrary to our expectations, we found that PTG was not significantly associated with the physical health, social relationship and treatment impact domains of HRQoL and it was also not a significant predictor of these domains of HRQoL. The first, second and fourth hypotheses were not confirmed. It seemed that living through the trauma of HIV does not necessarily affect the physical manifestation of the illness, the connectedness to others, and the experiences with treatment. One reason could be that unlike the internal cognitive processes which are internal to the individual, physical health, social relationships, and treatment impact were more external constructs, portraying external realities of HIV/AIDS. PTG may not be associated with the physical health dimensions of HRQoL as the mental growth from the diagnosis experience may not be typically enough to slow the physical ailment of HIV/AIDS. Again, the poor prediction of social relationship symptoms may emanate from the all too common social stigma and distance experienced by PLWHA, especially in Africa. Growth arising from traumatic experiences may not be enough in quelling the treatment outcomes arising from treatment received as an HIV/AIDS patient. Hence it seems that the stronger prediction between PTG and cognitive symptoms may arise from the fact that both constructs appear to evaluate internal mental states. This may suggest that PTG has potentials in alleviating the mental but not physical distress of PLWHA.

Our finding is not consistent with some previous studies. Tanyi, Szluha and Nemes (2014) found a significant negative relationship between PTG and physical well-being subscale of HRQoL among Hungarian cancer patients. Yet another study by Sim, Lee, Kim and Kim (2015) reported that higher PTG scores significantly predicted higher scores on social/family well-being domain of the HRQoL among Korean stomach cancer survivors. It could be that the differing nature of samples in focus, particularly in terms of disease type (cancer patients vs PLWHA) may explain the differences in our outcomes. There is thus needed to clarify the associations between PTG and dimensional well-being in future research. Comparative studies may particularly be beneficial.

The findings of the present study have clinical implications in understanding the health and well-being of

PLWHA. The pattern of the findings showed that it is pertinent to consider not only the negative impacts of trauma of being diagnosed with HIV+/AIDS on the patient's well-being, it is also beneficial to pay attention to the patients' experience of positive psychological changes that may result from the trauma. In clinical settings, efforts towards helping patients repair their shattered world view brought about by the HIV/AIDS status will help reduce patients' morbidity symptoms especially as it concerns excessive worries about their health status and experiences of mental distress. The incurability of chronic health conditions may be cognitively reconstructed such that experience of diseases such as HIV/AIDS may become functionally adaptive other than influencing pathological worries. It is important to eschew excessive worries about HIV/AIDS status using history of previous success in coping with other strenuous or life challenging circumstances. Nigeria being currently rated second in the global burden of HIV/AIDS per country (UNAIDS, 2016), must consider the need to incorporate psychological services into the needs assessment and intervention services for PLWHA. Clinical psychologists need to advocate for integration of psychological services as part of policy framework towards effective treatment of PLWHA in Nigeria.

There are some limitations to the findings of this study that merit attention in subsequent research. The sample of two-hundred and one (201) respondents was not large. The inability to extend the data collection to other hospitals may affect the generalizability of these findings. The design of this study is cross-sectional, and it involved the use of self-report measures, which precludes causal inferences. Funded research that will increase sample size and extend data collection to other hospitals across geopolitical zones of the country will enhance generalizability of future findings. Researchers in the future should also make effort to connect empirical findings in this study to clinical practice aimed at improving therapeutic outcomes among PLWHA through intervention studies and implementation research.

Conclusion

To the best of our knowledge, previous studies have not examined posttraumatic growth as a predictor of HRQoL among PLWHA in Nigeria. The current research uniquely contributes to understanding of HRQoL among special populations, such as PLWHA in Nigeria. PTG seems to be associated with improved cognitive states. The findings underscore the importance of examining not only the broader context of HIV/AIDS, but also individual differences in posttraumatic growth, when seeking to understand factors that influence HRQoL among PLWHA. Caring for PLWHA may be enhanced by considering the extent to which the patient has repaired his/her shattered world assumptions that resulted from being diagnosed with HIV/AIDS.

References

- Adewuya A., Afolabi M., Ola B., Ogundele O., Ajibare A., Oladipo B., & Fakande I. (2009). Post-traumatic stress disorder (PTSD) after stigma related events in HIV infected individuals in Nigeria. *Social Psychiatry and Psychiatric Epidemiology*, 44, 761–12. doi: 10.1007/s00127-009-0493-7.
- Calhoun, L. G., & Tedeschi, R. G. (1998). Posttraumatic growth: Future directions. In R. G. Tedeschi, C. L. Park, and L. G. Calhoun, (Eds.), *Posttraumatic growth: Positive change in the aftermath of crisis* (pp. 215–238). Mahwah, NJ: Erlbaum.
- Cann, A., Calhoun, L. G., Tedeschi, R. G., Triplett, K. N., Vishnevsky, T., & Lindstrom, C. M. (2010). Assessing posttraumatic cognitive processes: The

Event Related Rumination Inventory. *Journal of Anxiety, Stress, and Coping*, 24,2,137-156.

Christopher, M. (2004). A broader view of trauma: A biopsychosocial-evolutionary view of the role of the traumatic stress response in the emergence of pathology and/or growth. *Clinical Psychology Review*, 24, 75-98.

Duracinsky, M., Lalanne, C., Le Coeur, S., Herrmann, S., Berzins, B. Armstrong, A. R., Lau, J. T. F., Fournier, I., & Chassany, O. (2012). Psychometric validation of the PROQOL-HIV Questionnaire, a New Health-Related Quality of Life Instrument—Specific to HIV Disease. *Epidemiology and Prevention*, 59(5), 506-515.

Janoff-Bulman, R. (1992). *Shattered assumptions*. New York: The Free Press.

Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: A review. *Journal of Traumatic Stress*, 17, 11-21.

Nguyen, A. L., McNeil, C.J. Han, S. D., & Rhodes, S. D. (2016). Risk and protective factors for health-related quality of life among persons aging with HIV. *AIDS Care*. First online. doi: 10.1080/09540121.2017.1381333

Nilsson (2012). *Aspects of Health-Related Quality of Life associations with psychosocial and biological factors and use as patient-reported outcome in routine health care*. Linköping: LiU-Tryck.

Osoba, D. (2011). Health related quality of life and cancer clinical trial. *Therapeutic Advances in Medical Oncology*, 2, 57–71. doi: [10.1177/1758834010395342](https://doi.org/10.1177/1758834010395342)

Reis, R. K., Santos, C. B. & Gir, E. (2012). Quality of life among Brazilian women living with HIV/AIDS. *AIDS CARE*, 5, 626-634.

Sawyer, A., Ayers, A., & Field, A.P. (2010). Posttraumatic growth and adjustment among individuals with cancer or HIV/AIDS: A meta-analysis. *Clinical Psychology Review*, 30, 436-477.

Sim, B. Y., Lee, Y. W., Kim, H., & Kim, S. H. (2014). Post-traumatic growth in stomach cancer survivors: Prevalence, correlates and relationship with health-related quality of life. *European Journal of Oncology Nurses*, 19(3), 230-236.

Tanyi, A. B., Szluha, K. Z., & Nemes, S.K.A.B., (2014). Health-related Quality of Life, Fatigue, and Posttraumatic Growth of Cancer Patients Undergoing Radiation Therapy: A Longitudinal Study. *Applied Research Quality Life*, 9, 617. doi: 10.1007/s11482-013-9261-9267

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9, 451–471.

Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, 15, 1–18.

UNAIDS (2016). *The global AIDS response - Progress report*. Retrieved from http://files.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2014/UNAIDS_Gap_report_en.pdf

Zhou, X., Chen, J., Zeng, M., & Wu, X. (2015). Post-traumatic stress symptoms and post-traumatic growth: Evidence from a longitudinal study following an earthquake disaster. *PLoS ONE*, 10(6), e0127241