A Pilot Feasibility Study:
A Novel Approach to Assess Posttraumatic Growth

Patricia L. Tomich and Jannifer R. Moyer
Kent State University Trumbull

This study examines the feasibility of a study design to assess posttraumatic growth. To date, studies of posttraumatic growth continue, by and large, to rely on retrospective reports of growth following adversity, despite evidence that such reports are almost surely inaccurate. This research addresses limitations of previous research by comparing standings on growth pre- and post-trauma. In this study, of 31 women undergoing biopsies for yet undiagnosed breast masses at Time 1, 22 (71%) completed baseline interviews. Of these 22, 4 (18%) were diagnosed with breast cancer. Of these 4, 3 (75%) completed Time 2 interviews (1-month later, post-diagnosis). Thus, 3 of 31 women initially recruited were diagnosed with cancer (10%), completed Times 1 and 2 assessments, and were matched with age- and race-matched controls with benign breast masses. This study design is most feasible when recruiting from large medical centers, but the suggested method will contribute to a much-needed shift in the way posttraumatic growth is conceptualized and measured.

Although trauma research has traditionally focused on the negative consequences associated with traumatic experiences, over the past 15 years, an increasing number of studies have shown that people often report that they have experienced personal growth following adversity (for reviews, see Helgeson, Reynolds, & Tomich, 2006; Linley & Joseph, 2004). These positive changes have been described using an array of terms, including posttraumatic growth (Tedeschi & Calhoun, 1996), stress-related growth (Park, Cohen, & Murch, 1996), adversarial growth (Linley & Joseph, 2004), and benefit finding (Affleck & Tennen, 1996; Tomich & Helgeson, 2004). Growth may include, for example, becoming more accepting, focusing on relationships, and changing priorities (Tedeschi & Calhoun, 1996). However, two controversies have become apparent, namely (a) whether posttraumatic growth reflects genuine positive changes, and (b) whether the manner in which growth has been measured is a valid way to assess change following adversity (Frazier et al., 2009).

Assessing genuine positive change is a difficult thing to do, because researchers almost never know in advance who will experience adversity. However, the only way to know if and how individuals change in positive or negative ways is to assess them before and after their experiences. One way this can be done is to follow a large number of individuals over time. This research is designed to do just that, by recruiting a group of women who will undergo medical testing for a yet undiagnosed breast mass, some of whom will be diagnosed with cancer.

Method

Participants and Procedure

Participants were recruited from the offices of two general surgeons in Northeastern Ohio. Inclusion criteria for baseline assessments were (1) the presence of a yet undiagnosed breast mass; (2) a minimum age of 21 years; and (3) the ability to read, write, and understand English. Women with a known history of cancer or mental illness were excluded.

IRB approval was received (university, hospital). To protect patient confidentiality, physicians or members of their staffs identified potential participants who met eligibility requirements. They then described the study to interested women, addressed any questions, and obtained (a) informed consent; and (b) HIPAA consent, requesting permission to release their names and telephone numbers to the researchers. Within 3-5 days, participants were telephoned by the PI or a trained research assistant, the study was again explained in detail, any questions were addressed, and Time 1 assessments were completed using a telephone-interview format.

Women who agreed completed structured telephone interviews at Time 1 (T1: pre-biopsy/pre-diagnosis) and then at Time 2 (T2: post-diagnosis, approximately 1 month later). The telephone interview format was used to reduce participant burden and to control for reading skills and potential debilitation due to illness and/or treatment. At the time consent was obtained, participants were provided with response sheets (e.g., 1 = not at all, 2 = a little bit, 3 = a lot) to indicate answers to closed-ended questions. Baseline interviews lasted approximately 20-25 minutes, follow-up interviews lasted approximately 40-45 minutes. At T1, participants were paid $10 each; at T2, participants were paid $20 each. Participants completed a number of measures at each time point, some of which were

not relevant to the current study. Only those measures pertinent to the current study are discussed.

Instruments

At T1, participants completed a brief telephone interview to obtain demographic information and baseline standings on growth. At Time 2, follow-up telephone interviews were conducted to assess current standings on growth.

Demographic information. Demographic information was collected at T1 from participants for matching (i.e., age, race) and for descriptive purposes (e.g., marital status, education level, marital status, number of children).

Posttraumatic Growth. To assess posttraumatic growth from pre- to post-diagnosis, a current-standing version of Tedeschi and Calhoun's (1996) Posttraumatic Growth Inventory (C-PTGI, Frazier et al., 2009) was administered at T1 and T2. Participants rated how much 21 items apply to them on 6-point scales, ranging from 0 (not at all) to 5 (a very great degree) (e.g., "I put effort into my relationships"). An increase in participants' current standing on these items from T1 to T2 reflects an increase in growth reported across time. This measure has good reliability (Frazier et al., 2009). The PTGI was chosen for this research because it is the most widely used indicator of posttraumatic growth (Helgeson et al., 2006). Posttraumatic growth was calculated by subtracting T1 C-PTGI scores from T2 C-PTGI scores, with positive numbers indicating more growth (Frazier et al., 2009).

Results

As shown in Figure 1, of 31 women who agreed to participate in the study, 22 (71%) completed T1 measures. Ages ranged from 23 to 67 (M = 47.73, SD = 13.37), 67% were married, and 90% were Caucasian, with the median education level of some college completed. Nine (29%) did not complete the T1 interviews (7 could not be reached at the telephone numbers provided; 2 declined participation). Of the 22 women that completed T1 measures, 4 (18%) were eventually diagnosed with breast cancer; 18 (82%) were diagnosed with benign breast masses and served as a pool of controls. Of the 4 diagnosed with cancer, 3 (75%) completed T2 interviews (1-month later, post-diagnosis; 1 could not be reached at the telephone number provided). Thus, 3 of 31 women initially recruited into the study (10%) were diagnosed with breast cancer and completed

measures at T1 and T2; 3 of the women diagnosed with benign breast masses were selected from the pool to serve as age-matched (±7 years) and race-matched controls and completed measures at T1 and T2. The small sample size precluded the use of statistical tests to assess growth from pre- to post-diagnosis or to examine between-group differences.

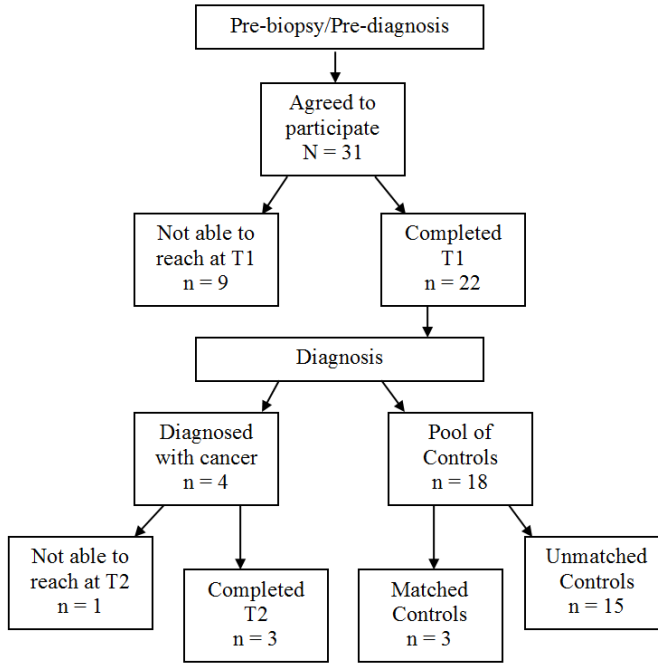

Figure 1. Prospective study design and recruitment of participants.

Discussion

This research adds to the trauma literature by proposing a novel approach to study design that may be used as a means of assessing whether genuine growth actually occurs. Using this strategy, individuals with yet undiagnosed tissue masses are recruited, they complete baseline assessments, undergo diagnostic procedures (i.e., biopsies), and are then divided into two groups: those with cancer and those with benign tissue masses who may serve as a pool of controls. These two groups may then be compared on pre- and post-diagnosis measures of growth, allowing for the examination and validation of genuine growth. To the extent that reports of growth made by individuals with cancer increase and diverge from those of the controls, the more evidence there will be that those experiencing

traumatic events engage in genuine posttraumatic growth. Importantly, researchers should not rely solely on retrospective reports of posttraumatic growth. Instead, efforts should be made to examine growth pre- to post-trauma. Study designs such as the one proposed here may exert a powerful influence on this field and may lead to a paradigm shift in the way growth is conceptualized and measured.

This study design is most feasible for researchers recruiting from large medical centers. Despite the feasibility of this recruitment procedure, the sample size obtained for this pilot research does not allow for the examination of statistical tests to assess genuine growth and definitive conclusions about posttraumatic growth. As such, replication with larger samples is needed to examine whether genuine change actually occurs. Future researchers should consider obtaining multiple telephone numbers for contacting potential participants, as those in the current study who were not able to be contacted at the numbers they provided at baseline and follow-up were 23% and 25%, respectively.

Nonetheless, the proposed study design would enable trauma researchers to address three major issues in the growth literature. First, although posttraumatic growth has been studied in individuals experiencing a variety of traumas, most studies have been cross-sectional, making it difficult to determine whether genuine change has actually occurred. Of the studies that have been longitudinal, most have failed to assess baseline standings on growth prior to trauma. For example, a recent study assessed change from pre-to post-cancer treatment, but not pre- to post-cancer diagnosis (Ransom, Sheldon, & Jacobsen, 2008). The prospective nature of the current study design allows for the assessment of genuine change with respect to the experience of being diagnosed with cancer.

Second, the retrospective measurement of growth is problematic (Frazier et al., 2009). In this regard, clinical research typically includes pre-intervention, post-intervention, and follow-up measures of symptoms. However, measures of posttraumatic growth have not been held to this standard (Tennen & Affleck, 2002). The current study design addresses this limitation of previous research by comparing standings on growth pre- and post-diagnoses.

Finally, Cohen and his colleagues (Cohen, Cimbolic, Armeli, & Hettler, 1998) suggested researchers need to validate the accuracy of self-reports of growth because biases, such as social desirability, may affect their responses. Studies of posttraumatic growth frequently ask respondents to

indicate how much a number of positive outcomes have occurred as a result of their experience (e.g., Taylor, 1983). One concern is respondents may quickly figure out that the socially desirable response is to say something positive came out of the event. This response bias is an issue for the most widely used indicator of growth, the Posttraumatic Growth Inventory (Tedeschi & Calhoun, 1996). To deal with this bias, Cohen et al. (1998) suggested methodological strategies may be used to validate self-report measures of posttraumatic growth, including the use of a control group. The current study design enables researchers to address this limitation by providing a pool of controls from which to select a matched comparison group.

Although the proposed study design has a number of strengths, particularly its emphasis on pre- and post-trauma assessments, there are some limitations. For example, most of the women in the trauma sample were likely more distressed than usual and their emotional state may have affected their current state ratings. With a sufficiently large sample, this conjecture could be tested when comparing baseline ratings of the pre-diagnosis group to the comparison group. This issue also could be overcome with other groups across longer timeframes, such as individuals seeking treatment for impaired fertility, a good portion of whom will not bring a pregnancy to term. Another limitation is that this pilot research included only a 1-month follow-up. Future research should include follow-up measures at regular intervals to assess early- versus later-growth and effects of genuine and perceived growth on quality of life.

In summary, the study design described here is feasible for assessing genuine growth, particularly when researchers are able to recruit participants from large medical centers. Use of this design will likely contribute to a much-needed shift in the way posttraumatic growth is conceptualized and measured, and it provides a methodological approach that promises to advance both the science and practice of positive psychology. This refinement in the assessment of growth ultimately may lead to a determination of whether genuine growth contributes to individuals' overall happiness, fulfillment, and flourishing.

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Notes

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