Trait anxiety predicts the emotional valence of meaning-making in life stories: A 10-year prospective study

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ARTICLE INFO

ABSTRACT

Individuals interpret events in positive and negative ways, creating positive and negative meaning in their life stories. We hypothesized that higher trait anxiety measured 10 years earlier would predict more negative meaning-making in life stories and that negative meaning-making would be related to more concurrent depressive symptoms. Participants were 272 women who had undergone fertility treatment and completed measures of trait anxiety 10 years earlier. In the present study, they described five life story events and rated these on emotional tone and meaning-making. A path analysis showed that higher trait anxiety predicted more negative meaning-making 10 years later and that negative meaning-making predicted more concurrent depressive symptoms after adjusting for baseline depressive symptoms, trait anxiety, and education. The results suggest that life stories are important to well-being.

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Individuals may gain meaning from experiences in very different ways and the meaning they construct may relate to their well-being. Some individuals focus on how events led to positive consequences and changed them in positive ways, while others emphasize how events were followed by negative outcomes (Lilgendahl & McAdams, 2011). What may predict who will construct more negative life stories and experience lower well-being? To answer this question, we capitalized on a previous study where women in fertility treatment had completed a measure of trait anxiety and examined whether this predicted the emotional valence of meaning-making in life stories and depressive symptoms 10 years later. We also examined whether the emotional valence of meaning-making was associated with concurrent depressive symptoms.

1. Life stories and meaning-making

Life stories refer to internalized stories about one's past, present, and future life, constructed to achieve temporal, causal, and thematic coherence (Habermas & Bluck, 2000; McAdams, 2001). Life stories are constructed through autobiographical reasoning, where individuals reflect on selected events from their lives, thereby organizing and interpreting events in the overall context of their lives (Habermas & Bluck, 2000).

A particular important aspect of autobiographical reasoning is the construction of causal coherence, which refers to establishing causal links between events in individuals' lives and creating causal links between events and selves. Such links are crucial for establishing coherent life stories, which are central to making meaning in one's life; if there are no causal connections, life seems random (Habermas & Bluck, 2000; McAdams, 2001). While meaning-making has generally been conceptualized as adaptive (Adler, Lodi-Smith, Philippe, & Houle, 2015), the causal links individuals create can be both positive and negative, leading to either positive coherent life stories or negative coherent life stories (e.g., romances and tragedies) (Gergen & Gergen, 1988). Thus, a negative event may be interpreted as having caused other negative events and as having changed the individual in negative ways, for example by becoming more insecure. However, a negative event may also be interpreted as having had positive consequences and having changed the individual in positive ways, for example becoming a more sensitive person. The latter sequence has been termed a redemption story and is prominent in life stories of individuals experiencing high degree of well-being (McAdams, Reynolds, Lewis, Patten, & Bowman, 2001).

While studies on redemption testify to the adaptiveness of meaning-making, studies showing that negative meaning-making may be

associated with reduced well-being are beginning to emerge. Lilgendahl and McAdams (2011) showed that a greater tendency to interpret life story events negatively was associated with poorer well-being. Similarly, Banks and Salmon (2013) found that participants reported more negative affect when their life stories included descriptions of how important events had affected them negatively. Based on this analysis, we conceptualized meaning-making as being potentially both positive and negative, and examined how positive and negative meaning-making in life stories was related to trait anxiety and depressive symptoms.

2. Life stories and trait anxiety

Life stories can be viewed as dynamic aspects of individuals' personalities that develop as new events are incorporated and interpretations of past events change through autobiographical reasoning (Habermas & Bluck, 2000; McAdams, 2001). This autobiographical reasoning process may be affected by more stable aspects of personality, such as personality traits (McAdams & Pals, 2006). Trait anxiety refers to "a predisposition to appraise stimuli as threatening and respond with anxiety" (p. 647, Elwood, Wolitzky-Taylor, & Olatunji, 2012) and has been associated with depressive symptoms (Elwood et al., 2012). While, to the best of our knowledge, no previous studies have examined relations between trait anxiety and meaning-making in life stories, there are reasons to expect that trait anxiety may be related to more negative meaning-making. First, trait anxiety has been found related to a negative bias in information processing (Elwood et al., 2012) and this may also extend to negative interpretations in life stories. Second, trait anxiety is highly correlated with neuroticism (Scheier, Carver, & Bridges, 1994), and individuals high in neuroticism have been shown to have more negative life stories (McAdams et al., 2004; Thomsen, Olesen, Schnieber, & Tønnesvang, 2014; Rubin, Boals, & Hoyle, 2014). However, prospective studies examining whether trait negative affect, such as trait anxiety and neuroticism, predict emotional qualities in life stories are lacking (but see Lodi-Smith, Geise, Roberts, & Robins, 2009).

3. Life stories and depressive symptoms

Life stories have been shown to be important to well-being. A recent review found that positive emotional tone and more redemption sequences were related to higher well-being and that life stories explained variance in well-being beyond personality traits (Adler et al., 2015). Patients with depression have also been shown to describe their life stories more negatively than healthy controls (Dalgleish, Hill, Golden, Morant, & Dunn, 2011). The link between negative life stories and depression is consistent with the general idea that depression is associated with negative self-schemata (e.g., "I am worthless") leading to a negative bias in information processing, including negative interpretations of events (Beck, 1976). Such biased interpretations may include negative meaning-making in life stories. Examining life stories may provide information about how depressive symptoms are related not just to self-schemata but also to interpretations of how the self and events unfold over time. We expected that more negative valence of events and meaning-making in life stories would be associated with more depressive symptoms.

4. The present study

We capitalized on a previous study of women undergoing fertility treatment where participants had completed measures of trait anxiety and depressive symptoms. Approximately 10 years after the first study, we invited these women to take part in a study that included a questionnaire on life stories. Our hypotheses were 1) that higher trait anxiety would predict more negative meaning-making in life stories and more depressive symptoms 10 years later, and 2) that more negative meaning-making in life stories would be associated with more concurrent depressive symptoms even after controlling for trait anxiety.

We examined these relationships using a path analysis, where we controlled for relevant demographic variables and depressive symptoms at baseline.

5. Method

5.1. Participants and recruitment

The participants were 272 women with a mean age of 41.26 years ($SD = 3.99$). Most women were married or co-habiting (89.3%); 2.6% had a partner they did not cohabit with; 7.4% were divorced; 0.4% were single; and 0.4% were widowed. Their educational background was as follows: 21.3% had 4 years or more post-high school education; 47.8% had 3–4 years post-high school education; 11.4% had 1–3 years of post-high school education; 14.7% had manual work education; and 1.5% reported no further education after elementary school (3.3% reported "other education" or "don't know"). Most of the women had children, including adopted children and step children (6.3% had no children; 20.6% had one child; 46.0% had two children; 21.7% had three children; and 5.4% had 4 or more children).

The participants were recruited from a sample of 837 women who participated in a study on psychological aspects of fertility treatment (Ebbesen et al., 2009). The data for this study were collected between 2001 and 2006. For the present study, 782 women with available addresses were mailed a letter reminding them of their participation in the previous study and inviting them to take part in a follow-up study. We also included women who had initially indicated an interest in the baseline study, but did not complete the baseline study for different reasons. The letter included a link to an online questionnaire. Two-hundred-and-seventy-two participants (35%) completed the part of the questionnaire concerned with depressive symptoms and life stories. Of these, 230 and 228 participants had completed measures of depressive symptoms and trait anxiety at baseline.

The 272 responders were more likely to be highly educated and had higher income ($X^2(4) = 31.06$ and $X^2(4) = 9.99$, $ps < 0.05$), and responders tended to score lower on trait anxiety and depressive symptoms at baseline, compared with non-responders ($ts(779$ and $780) = 1.91$ and 1.93, $ps = 0.06$ respectively). There was no age difference between responders and non-responders.

5.2. Materials

At baseline, the women completed several questionnaires (see Ebbesen et al., 2009). Only the measures of trait anxiety and depressive symptoms are relevant for the present study. When completing the follow-up 8–13 years later (in 2014), the participants again completed a packet of questionnaires, including measures specifically addressing issues related to infertility and treatment. The packet took approximately 2 h to complete, but only the measures of depressive symptoms and life stories are relevant to the present study.

Trait anxiety (completed at baseline): Trait anxiety was measured using the trait subscale of the State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). The scale consists of 20 items that are answered on 1–4 point scales, with higher scores indicating higher degree of trait anxiety. The scale is widely used and has been shown to have good internal reliability and convergent validity as well as relatively high test-retest reliability (Elwood et al., 2012). In the present study, Cronbach's alpha was 0.91.

Depressive symptoms (completed at baseline and follow-up): Depressive symptoms were measured using Beck's Depression Inventory, second edition (BDI-II, Beck, Steer, & Brown, 1996). The scale consists of 21 items focusing on cognitive-affective and somatic symptoms of depression. Each item is answered using one of several options (scored 0–3) with increasing severity of the specific symptom. Thus higher scores indicate higher degree of depressive symptoms. The BDI-II is widely used to measure depressive symptoms and has been shown to