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Positive or negative change in outlook on life following sexual assault and associations to PTSD severity

Nina Beck Hansen, Maj Hansen, Louise Hjort Nielsen and Ask Elklit

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ABSTRACT
In a sample of female victims of sexual assault (n = 122) this study examined the possibility of a positive or negative change in outlook on life 3 and 12 months following the assault and associations to posttraumatic stress disorder (PTSD). The majority of women reported a negative change or no change in outlook on life following the sexual assault. The group of women who reported a negative outlook on life 3 months following the sexual assault had a significant higher level of PTSD severity 12 months following the assault. More research is needed to enhance our understanding of the causal relationship between life changes and psychological distress following sexual assaults.

KEYWORDS
Sexual assault; rape; outlook on life; posttraumatic stress disorder; life changes

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Introduction
Traumatic experiences can have significant consequences on the person’s life, expectations for the future, and psychological well-being (Helgeson, Reynolds, & Tomich, 2006; Kessler, Sonnega, Bromes, Hughes, & Nelson, 1995). Previously, research has focused on the negative consequences following traumatic events such as posttraumatic stress disorder (PTSD) and depression (e.g. Kessler et al., 1995). However, during the last 20 years an increasing amount of studies suggest that people can also experience different positive outcomes following trauma such as increased meaning in life, enhanced life satisfaction, and a feeling of personal growth (Calhoun & Tedechi, 2006; Helgeson et al., 2006). Thus, it is suggested that the study of posttraumatic adaption must include both negative and positive outcomes (Joseph & Linley, 2008a; Joseph, Williams, & Yule, 1993; Joseph et al., 2005).

A change in outlook on life refers to the possibility of victims reappraising their lives and expectations for the future following a traumatic experience (Joseph et al., 1993, 2005; Linley, Joseph, & Goodfellow, 2008). The concept of outlook on life is related to the theory of schematic changes following trauma exposure (Janoff-Bulman & Frieze, 1983; Joseph et al., 2005). According to Janoff-Bulman and Frieze (1983) traumatic experiences can influence the victim’s basic assumptions of the world in three ways: The belief in
personal vulnerability, the perception of the world as meaningful, and the perception of oneself as positive. The original perspective by Janoff-Bulman and Frieze (1983) focused on the negative schematic changes following trauma exposure but newer studies have shown the development of positive schema changes and a more positive outlook on life following trauma exposure (Joseph et al., 1993, 2005; Linley et al., 2008).

However, most research on life changes following traumatic experiences has been conducted with patients of critical illnesses or disasters whereas only a few studies have investigated both negative and positive life changes following sexual assault (Helgeson et al., 2006; Joseph & Linley, 2008b). Especially, there seems to be a lack of research examining the potential positive life changes following a sexual assault. In a systematic literature review on 39 studies investigating positive life changes following trauma exposure (Linley & Joseph, 2004), only two studies were based on samples of victims of sexual assault (Frazier, Conlon, & Glaser, 2001; Thompson, 2000). In addition, to the best of our knowledge no known studies have assessed the possibility of a positive or negative change in outlook on life following sexual assault in specific. It is, however, suggested that sexual assaults might differ from other traumas (Frazier & Berman, 2008). Being the victim of a sexual assault is associated with higher rates of PTSD than many other traumas (Kessler et al., 1995), and it might be more difficult to experience positive life changes following a sexual assault because of the interpersonal harm and stigma of the experience (Frazier & Berman, 2008; Janoff-Bulman, 1985).

Furthermore, research examining the associations between negative and positive changes following trauma and PTSD is scant. A systematic review identified only eight studies that have investigated the association between positive changes and aspects of posttraumatic stress. Only one of these studies was prospective and also included a measure of PTSD (Linley et al., 2008). Negative life changes following trauma have been associated with a higher level of PTSD (Frazier & Berman, 2008; Janoff-Bulman & Frieze, 1983; Joseph et al., 1993, 2005), but the association between positive life changes and PTSD seems more uncertain. Some studies have found a negative association between positive life changes and distress (Frazier & Berman, 2008; Linley et al., 2008), whereas others have found no correlation (Joseph et al., 1993) or a positive correlation (Dekel, Ein-Dor, & Solomon, 2012).

The current study addresses the above mentioned research gaps by investigating the possibility of a perceived positive or negative change in outlook on life 3 and 12 months following a sexual assault. In addition, we examined whether perceived negative or positive outlook on life 3 months following a sexual assault was associated with PTSD severity 12 months following the assault. When investigating this relationship, we also controlled for the effect of other potential risk factor for PTSD severity. The selected risk factors were age at the time of the assault, perceived social support, and PTSD severity at 3 months post assault. These variables were selected based on other studies on risk-factors for PTSD (Andrews, Brewin & Rose, 2003; Brewin, Andrews, & Valentine, 2000) and the theoretical model of trauma reactions by Janoff-Bulman (1992). Research indicates that whether or not social support constitutes a protective factor for posttraumatic symptoms depends on the quality of and the satisfaction with the social support rather than simply the availability of social support (Andrews et al., 2003; Elkliit & Brink, 2004). Studies have also found that positive aspects of social support were protective against the development of posttraumatic symptoms, while negative aspects of social support were risk factors for...
posttraumatic symptoms (Elklit, 2002; Hansen & Elklit, 2011, 2013; Richards, 2000). Thus, we controlled for the potential influence of perceived positive social support, perceived negative social support, and social support satisfaction.

**Method**

**Participants**

The current study was based on a sample of 122 female victims of sexual assault recruited from a Danish regional Center for Rape Victims (CRV; see Bramsen, Elklit & Nielsen, 2009). The included women were in an age range of 12—58 years. Most women (59%) had experienced a completed rape and the remaining women had been exposed to attempted rape (12%), other sexual acts (20%), or they could not recall the specific details of the assault they had been subjected to (9%).

**Data collection**

The study was part of a larger, ongoing study conducted at the CRV (see Bramsen et al., 2009; Elklit & Christiansen, 2013). The included women had a self-report questionnaire mailed to them by post by an administrative staff member working for the CRV at 3 and 12 months following the assault. Each questionnaire included a stamped return envelope for the women to return by mail. The women were offered psychological assistance to fill out the questionnaires, if they found them too difficult to answer. Participation was voluntary and the women could decline further participation in the study at any time. The study was carried out adhering to the ethical principles contained in the Declaration of Helsinki, and was approved by the Danish Data Agency. Data was treated and anonymized according to the agency’s guidelines.

**Measures**

Perceived change in outlook on life was assessed at 3 and 12 months following the assault using the same single question as Joseph et al. (1993) when they developed the Change in Outlook Questionnaire (CiOQ): “Do you feel that the assault has changed your outlook on life in a positive or negative way?” The victims’ answers were coded into the three following categories: negative change, no change, and positive change.

PTSD severity was assessed at 3 and 12 months following the assault using the Danish version of the Harvard Trauma Questionnaire (HTQ; Mollica et al., 1992). The HTQ measures the intensity of the three core symptom groups of PTSD (intrusion, avoidance, and arousal) and consists of 30 items, 16 of which correspond to the DSM-IV. The answers are scored on a 4-point Likert-type scale (1 = not at all, to 4 = all the time). Possible total HTQ scores are in the range of 32—128. The Danish version of the HTQ has shown good reliability and validity (Bach, 2003). In the present study, the Cronbach’s alpha value for the total HTQ scale at treatment start was .94.

Perceived social support post-assault was assessed 3 months following the assault using the Danish version of the Crisis Support Scale (CSS; Joseph, Andrews, Williams, & Yule, 1992). The scale is comprised of the following seven items: (1) perceived availability of
someone to listen; (2) contact with people in a similar situation; (3) the ability to express oneself; (4) received sympathy and support; (5) practical support; (6) the experience of being let down; and (7) general satisfaction with social support. In accordance with previous studies (Andrews et al., 2003), the summated score of the first five items is used as a measure of positive support, item six is used as a single measure of negative support (feeling let down), while item seven is used as a single measure of overall satisfaction with received social support. Responses are rated on a 7-point Likert-type scale (1 = never, to 7 = always). The Danish version of the CSS has shown good reliability and validity (Elklit, Pedersen & Jind, 2001). In the present study, the inter-item correlation was .23.

**Statistical analyses**

The percentages of missing values were low (.00%–8.3%). Thus, the expectation-maximization (EM) algorithm was used for imputing missing values. Correlation analyses were conducted for the included variables. The strengths of the associations were assessed according to Cohen’s guidelines (Cohen, 1988). A hierarchical regression analysis was used to investigate the impact of outlook on life 3 months following the sexual assault on PTSD severity 12 months after the assault. The three life outlook groups (i.e. negative, no change, and positive) were dummy coded into two variables that represent the distinction between the comparison group (group with no change) and the two other groups in questioning. We controlled for the impact of age at the time of the assault and perceived social support at 3 months post assault. The dependent variable (PTSD severity 12 months post assault) was normally distributed and there were no problems with multicollinearity. All analyses were conducted using the Statistical Package for Social Sciences (SPSS) version 21.

**Results**

**Perceived outlook on life**

Table 1 presents the descriptives of the sample and the means and standard deviations of the main study measures. The majority of women reported that their outlook on life had changed in a negative way (43.4%) or had not changed (39.3%) following the sexual assault. There was an increase in the number of women who reported a more positive outlook on life following the assault from 3 to 12 months post assault. Also, there was a

<table>
<thead>
<tr>
<th>Table 1. Descriptives of the study’s main measures.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (SD) 23.98 (10.19) 23.98 (10.19)</td>
</tr>
<tr>
<td>Age (SD) 23.98 (10.19) 23.98 (10.19)</td>
</tr>
<tr>
<td>Outlook on life</td>
</tr>
<tr>
<td>Negative change (%) 53 (43.4%) 44 (36.1%)</td>
</tr>
<tr>
<td>No change (%) 48 (39.3%) 53 (43.4%)</td>
</tr>
<tr>
<td>Positive change (%) 21 (17.2%) 25 (20.5%)</td>
</tr>
<tr>
<td>HTQ total (SD) 38.53 (9.94) 35.58 (10.16)</td>
</tr>
<tr>
<td>CSS NEG (SD) 4.18 (2.05) 3.72 (1.97)</td>
</tr>
<tr>
<td>CSS POS (SD) 18.83 (4.12) 22.25 (4.98)</td>
</tr>
<tr>
<td>CSS SAT (SD) 5.78 (1.42) 5.69 (1.35)</td>
</tr>
</tbody>
</table>

Note: CSS NEG (feelings of being let down), CSS POS (positive social support), CSS SATISFAC (social support satisfaction), HTQ (PTSD severity).
decrease in the number of women who reported that the assault had a negative effect on their outlook on life from 3 to 12 months post assault.

**Correlation analyses**

Table 2 shows correlation analyses between the study variables and PTSD severity at 3 and 12 months post assault. A more positive outlook on life, more perceived positive support, and more perceived social support satisfaction 3 months post assault were associated with less PTSD severity 3 months post assault. The associations were in the medium range ($r = -0.37$ to $-0.47$, $p < .001$). A more positive outlook on life at 3 and 12 months post assault as well as more perceived positive support and more perceived social support satisfaction 3 months post assault were associated with less PTSD severity 12 months post assault. The associations were in the small to medium range ($r = -0.25$ to $-0.36$, $p < .001$)

**Outlook on life and PTSD severity**

Table 3 shows the regression coefficients for the outlook on life groups and the selected risk factors. Age and perceived social support were entered at Step 1, explaining 14.7% of the variance in PTSD severity. After entry of outlook on life groups at Step 2, the total variance explained by the model as a whole was 19.9%, $F(6,115) = 4.75$, $p < .001$. Outlook on life explained an additional 5% after controlling for age at the time of the assault and perceived social support, $R^2$ change = .05, $F$ change (2,115) = 3.94, $p < .05$. In the final model, only level of perceived social support satisfaction and negative outlook on life

**Table 2. Correlations between the study variables and PTSD severity.**

<table>
<thead>
<tr>
<th></th>
<th>HTQ total 3 months</th>
<th>HTQ total 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outlook on life 3 months</td>
<td>$-.37^{**}$</td>
<td>$-.31^{**}$</td>
</tr>
<tr>
<td>Outlook on life 12 months</td>
<td>$-.13$</td>
<td>$-.25^{*}$</td>
</tr>
<tr>
<td>Age</td>
<td>$-.03$</td>
<td>$-.06$</td>
</tr>
<tr>
<td>CSS NEG</td>
<td>$-.04$</td>
<td>$-.03$</td>
</tr>
<tr>
<td>CSS POS</td>
<td>$-.34^{*}$</td>
<td>$.25^{*}$</td>
</tr>
<tr>
<td>CSS SAT</td>
<td>$-.47^{*}$</td>
<td>$-.36$</td>
</tr>
</tbody>
</table>

Note: CSS NEG (feelings of being let down), CSS POS (positive social support), CSS SATISFAC (social support satisfaction), HTQ (PTSD severity).

$^{*}p = < .01$

$^{**}p = < .001$, two-tailed.

**Table 3. Hierarchical multiple regression analysis. Predicting PTSD severity 12 months following sexual assault.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>$B$</th>
<th>$SE$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>48.50</td>
<td>4.741</td>
<td>—</td>
<td>10.22</td>
<td>.000</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.08</td>
<td>.09</td>
<td>.08</td>
<td>.94</td>
<td>.439</td>
</tr>
<tr>
<td>CSS NEG</td>
<td>.58</td>
<td>.45</td>
<td>.12</td>
<td>1.28</td>
<td>.348</td>
</tr>
<tr>
<td>CSS POS</td>
<td>-.22</td>
<td>.28</td>
<td>-.09</td>
<td>-.78</td>
<td>.005</td>
</tr>
<tr>
<td>CSS SAT</td>
<td>-2.27</td>
<td>.79</td>
<td>-.32</td>
<td>-2.86</td>
<td>.203</td>
</tr>
<tr>
<td>(Constant)</td>
<td>43.35</td>
<td>5.11</td>
<td>—</td>
<td>8.48</td>
<td>.000</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative outlook</td>
<td>4.37</td>
<td>1.95</td>
<td>.21</td>
<td>2.25</td>
<td>.027</td>
</tr>
<tr>
<td>Positive outlook</td>
<td>-1.72</td>
<td>2.45</td>
<td>-.06</td>
<td>-.70</td>
<td>.484</td>
</tr>
</tbody>
</table>

Note: CSS POS (positive social support), CSS NEG (feelings of being let down), CSS SATISFAC (social support satisfaction).
were statistically significant with perceived social support satisfaction recording a higher beta value ($\beta = -2.86, p < .01$) than negative outlook on life ($\beta = 2.25, p < .05$).

**Discussion**

This study investigated perceived changes in outlook on life following a sexual assault and associations to PTSD severity. We found that the majority of women exposed to a sexual assault reported that their outlook on life had changed in a negative direction or had not changed both at 3 and 12 months following the assault. It has been suggested that it could be more difficult to experience positive life changes and a positive outlook on life following sexual assaults compared to non-interpersonal traumas such as disasters and illnesses because of the interpersonal aspect involved in these crimes (Frazier & Berman, 2008; Janoff-Bulman & Frieze, 1983). In accordance with this, Shakespeare-Finch and Armstrong (2010) found that a group of bereaved persons reported more positive life outcomes compared to victims of sexual abuse. Frazier and Berman (2008), though, reported that 91% of their sample of victims of sexual assault could report some positive life changes following the assault. However, at the same time 95% of the victims also reported negative life changes. Despite studies in the area being sparse, the few existing studies indicate that a negative outlook on life and the experience of negative life changes are common posttraumatic reactions in women of sexual assault. However, more women reported a positive outlook on life 12 months following the assault than at 3 months. This finding may support the notion that positive posttraumatic life changes develop over time (Calhoun & Tedechi, 1998; Frazier and Berman, 2008; Janoff-Bulman, 2006). Also, Frazier and Berman (2006) reported on a sample of victims of sexual assault that positive changes increased and negative changes decreased over time. Therefore, it is possible that a longer follow-up period would find a higher percentage of women reporting a positive change in outlook on life following a sexual assault.

As hypothesized, we found that the group of women who experienced a negative change in outlook on life following sexual assault had a significant higher level of PTSD severity 12 months following the assault compared to the group of women who reported no change. However, we did not find that the group of women who reported a positive outlook on life had a significant lower level of PTSD severity compared to the group of women who reported no change in outlook on life. This finding, though, is consistent with results reported by Kennedy, Davis, and Taylor (1998) who found that the effect of negative changes in spirituality on psychological distress was larger than the effect of positive life changes on psychological distress based on a sample of victims of sexual assault. Similarly, Joseph et al. (1993) reported that negative changes in outlook following a shipping disaster were associated with more psychological distress, while positive changes in outlook on life were not significantly associated with the level of psychological distress. These results indicate that negative changes following sexual assault seem to hurt more than positive changes help. This seems supportive of the notion by Janoff-Bulman (2006), who suggested that positive life changes following the trauma may develop over time but that the painful negative representation is always present, ready to dominate the survivor’s psychological world.

Also, consistent with the hypotheses we found that outlook on life at 3 months were predictive of longer-term PTSD severity following a sexual assault. This finding lends
support to the argument that the development of positive life changes following traumatic experiences may be a foundation for therapeutic work (Linley & Joseph, 2004; Zoellner & Maercker, 2006). However, considering the finding that especially a negative outlook on life (as opposed to a positive outlook on life) was associated with more PTSD severity could indicate that the important therapeutic target is to hinder the spreading of the negative consequences of the assault to the victims’ world view and expectations for the future rather than the target should be to develop a positive outlook on life following the assault. The current study, though, also found that the effect of outlook on life on PTSD severity was small, with outlook on life explaining 5% of the variance in PTSD severity when controlling for the effect of age, positive social support, negative social support, and social support satisfaction. In this study, social support satisfaction following the sexual assault was just as important variable for PTSD severity as negative outlook on life was.

In the current study, we hypothesized that outlook on life at 3 months would be predictive of longer-term PTSD severity. However, the relationship between life changes and PTSD has been debated (for a review, see Dekel et al., 2012). A group of studies have found that positive changes were related to later reduction in distress (Frazier et al., 2001; Linley et al., 2008). Less researched is the reverse path that the experience of positive or negative life changes is the outcome of the level of psychological distress following the trauma. As such, Dekel et al. (2012) found that PTSD predicted positive life changes in a sample of Israeli ex-prisoners. The small effect of outlook on life at 3 months following the assault on PTSD severity at 12 months could be explained by the possibility that it is PTSD severity which predict outlook on life and not vice versa. However, in the current study we only found a significant correlation between outlook on life 3 months post assault and PTSD severity at 12 months post assault whereas the correlation between PTSD severity 3 months post assault and outlook on life at 12 months post assault was not significant. This could indicate that outlook on life following a sexual assault is affecting PTSD severity although the effect in this sample was in the smaller range. At the moment, though, research in the area is sparse and most studies have been conducted on cross-sectional study designs (Helgeson et al., 2006). Further studies are needed in order to explore the relationship between psychological distress and life changes following trauma exposure before any firm conclusions can be drawn.

Limitations

The current study has several limitations. First, the sample consisted of female victims of sexual assault and results are therefore only applicable to this gender. In addition, the study was conducted based on a convenience sample and limited to the women who returned questionnaires and thereby participated in the study. This introduces the risk of sampling bias and the results may not be representative of all female victims of sexual assaults.

Furthermore, we only controlled for the effect of perceived social support and age at the time of assault. Some of the women in this sample also received psychotherapy which we were not able to assess the effect of. Other variables are also likely to influence the experience of change in outlook of life. As stated by Tedechi & Calhoun (2004), positive posttraumatic life experiences develop through the personal experience of struggling with a traumatic event. Variables such as personality traits, coping mechanisms, and the
severity of the assault are likely to influence the personal consequences of a traumatic event. Future studies would benefit from controlling for the effect of these variables. More knowledge of the variables that affect the final outcome or what type of trauma that affects the outcome regardless of the personal variables is important information for future studies.

Finally, outlook on life was assessed with a single item and not a standardized measure such as the CiOQ (Joseph et al., 1993). This study was conducted in relation to a larger study and therefore the length of the questionnaire was a factor in the choice of measurement instrument. It is possible that this single item does not represent the total concept of life outlook and therefore the inferences which can be drawn from this question are also limited. A more nuanced measure (such as the CiOQ) would have increased the validity of the participants’ responses and should preferable be used in future studies. However, the single item used in this study was similar to the item from which the CiOQ was originally generated (Joseph et al., 1993) and hopefully we were able to assess some of the aspects of the concept of outlook on life with this single question.

Conclusions

Despite its limitations, the current study adds to the limited amount of existing research on positive and negative life changes following sexual assault. Our results indicated that the majority of female victims of sexual assaults reported a negative change or no change in outlook on life at 3 and 12 months post assaults. Results also indicated that the experience of a negative outlook on life was a risk factor for a higher level of PTSD severity following a sexual assault whereas positive life changes were not significantly associated with PTSD severity. However, more research is needed to enhance our understanding of the causal relationship between life changes and psychological distress following trauma exposure in general and sexual assaults in specific. Personal posttraumatic consequences develop though complex interactions between the personal characteristics, the characteristics of the trauma and the social surroundings. Research investigating these interactions are needed.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

*Nina Beck Hansen* is a PhD fellow at the Department of Psychology at the University of Southern Denmark. Her dissertation research examines how going through the judicial system affects victims of rape and sexual assault.

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*Louise Hjort Nielsen* is a PhD fellow at the Department of Psychology at the University of Southern Denmark. Her dissertation research examines how the legal, medical, and mental health systems
respond to the needs of victims of rape and sexual assault and how this contact affects victims of rape and sexual assault.

Ask Elklit is a professor of psychology at the University of Southern Denmark and the head of the National Centre for Psychotraumatology. His research covers a wide array of areas in the field of psychological trauma, crisis intervention, and crisis management. He is currently involved in several major studies regarding domestic violence, war veterans, traumatized immigrants, sexual assault, and detecting traumas in infants, among many other projects.

References


