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Depression-Related Stress Generation: A Longitudinal Study of Black Adolescents

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DEPRESSION-RELATED STRESS GENERATION: A LONGLITUDINAL STUDY OF
BLACK ADOLESCENTS

By
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ABSTRACT

Background: The authors examined Hammen’s (1991) model of stress generation in depression in a Black adolescent population. Methods: The longitudinal sample of 1766 participants entered the study at ages 13-19. Stressful event and depressive symptom occurrence over a 1 year period was analyzed. Results: Results supported the stress generation model. Limitations: Data collected in 1986, although findings remain relevant. Conclusions: Depressive symptoms were associated with an increase in negative stressful events. In addition, the study supported the symptom specificity of stress generation to depression versus anxious and conduct disorder symptoms.
INTRODUCTION

Hammen, Davila and colleagues have documented in a series of empirical studies the phenomenon of stress generation. Hammen (1991) suggested that some subsets of depressed people are exposed to considerable stress by virtue of their condition and their characteristics and behaviors and that to some degree, depressed persons generate the stressors that befall them. The stress generation phenomenon is defined as actively contributing to the occurrence of one’s own negative life events, and serves to remind us that individuals help to create environments for themselves (Hammen, 2000).

This phenomenon was found in Hammen’s (1991) one-year study of women with depression, bipolar disorder, medical illness, or no disorder. The data showed that depressed women, even compared to the women with bipolar disorder and medical illness, experienced more stress to which the women themselves contributed. This finding has been replicated in samples of men and women (Hammen et al., 1992), marital couples (Davila et al., 1997), adolescent women (Daley et al., 1997; Davila et al., 1995), children (Adrian & Hammen, 1993), as well as by other research groups (Potthoff et al., 1995; Simons et al., 1993; Wagner et al., 1998). However, there is a noteworthy lack of information in the stress generation literature. There have been no studies that have attempted to examine this phenomenon specifically in minority cultures.

It has been reported that there may be minimal differences in rates of symptoms across groups of Anglo and African American adolescents (Roberts et al., 1995). Anglo and African American adolescents also exhibited similar depressive factor structure, represented by negative affect, low positive affect, and psychosomatic symptoms (Roberts, 1992). Because there are minimal differences in depression between groups, it may be logical to assume that stress generation occurs similarly in Black adolescents as in other populations. However, according to the DSM-IV-TR, culture can influence the experience and communication of symptoms of depression. If it is the case that minorities may experience and communicate depression differently than majorities do, the question stands as to whether depression in minority populations predicts stress generation.

Hammen (1991) suggested that the stress generation effect was specific to depression, as opposed to generally related to numerous mental disorders. Hammen (1991) found that women with unipolar depression were more likely than women with bipolar disorder, chronic medical illness, or nonill women to experience higher rates of stress generation. Along with establishing the presence of a stress generation effect in a minority population, the question stands as to whether this effect is specific to depression in minority populations.

The main purpose of the present study was to evaluate the presence of stress generation phenomena in a minority adolescent population. The study was longitudinal, using a one-year time frame, and examined self-reported negative life stress and depressive symptoms. The participants were Black adolescents from 10 health care programs throughout the country. We predicted that depressive symptoms reported at time one would be predictive of the number of
negative stressful life events at time two (controlling for negative life events reported at time one). It was also expected that the stress generation effect would be specific to depressive versus non-depressive symptoms, such as anxious or conduct disorder symptoms. Because both anxious and conduct disorder symptoms are associated with depressive symptoms (Meller & Borchardt, 1996), a finding of stress generation that occurs only in relation to depressive symptoms would provide support for the specificity of stress generation to depression.

**Method**

**Participants and Procedure**

1766 African-American adolescent participants (13-18 years of age; average age was 16.3, SD = 1.14) were drawn from 10 health care programs throughout the country. At Time 1 there were 476 males and 1500 females; at Time 2 there were 418 males and 1348 females. The participants were interviewed in the order that they presented at clinics for care. Only those participants completing all assessments in the initial interview and follow-up interview were included in the analysis (N = 1766). The 210 participants who were excluded did not differ from those included in age, sex, stressful events, depression symptoms, anxiety symptoms, or non-aggressive conduct disorder symptoms. The only difference between the two groups on study variables was that those who did not return had significantly more aggressive conduct disorder symptoms than those who returned. Lewinsohn et al. (1993) reported a similar finding of higher attrition rates for subjects who had a history of disruptive behavior disorders in the Oregon Adolescent Depression Project. Participants were initially interviewed in 1984-1985 and were followed up in 1985-1986. (see Earls, 1989; Stiffman, Earls, Robins, Jung, & Kulbok, 1987 for more information on data collection procedures.)

**Materials**

Data were collected using a structured closed-ended interview schedule to obtain information on participants’ reasons for attending the clinic, other health services used, physical and mental health status, family background, school adjustment, peer relations, stressful events, social adjustment and supports, heath practices and extracurricular activities. Portions of the Diagnostic Interview for Children and Adolescents (DICA) were included as part of the interview schedule to examine aggressive or antisocial traits. The DICA is a valid and reliable instrument for both clinical and research purposes (Welner et al., 1987). In addition, portions of the Diagnostic Interview Schedule (DIS) were included in the interview schedule to assess symptoms such as depression and anxiety. The DIS appears to be a reasonably satisfactory instrument for making psychiatric diagnoses (Robins et al., 1981).

Hammen (1991) and Daley et al. (1997) found evidence for the stress generation effect in participants with a depression diagnosis. The current study, like that of Davila et al. (1995), assessed the generality of stress generation to depressive symptoms. The depressive symptoms assessed in the interview included the time-period criteria of feeling depressed for more than 2 weeks (a key criterion for current depression) or 2 years (a key criterion for dysthymia) for major depression and dysthymia, respectively. The other depressive symptoms that were assessed
include work suffering, change in appetite and sleep, loss of energy and interest, worthlessness, trouble thinking, emotional changes, and thoughts of death.

The stressful events assessed in the interview focused on events that occurred in the past year, and included fighting at home, respondent’s involvement with fighting at home, big money worries, living with a handicapped person, someone cared about died, someone at home drinks a lot, someone at home has problems with the police, anyone hurt or threatened respondent, anyone hurt another household member, and anyone knew well killed. Each stressful event was individually assessed from a structured list by an interviewer, and was rated as either present or absent within the last year by the interviewer. The interview-based assessment of stress used in the study is the preferred assessment approach, and has accrued good reliability and validity data (e.g., McQuaid et al., 2000). Hammen (1991) suggests that the interview-based collection of life stress data is preferable because of the insensitivity of questionnaire assessments to the personal significance of events and the occurrence of idiosyncratic events.

Results

It was predicted that depressive symptoms reported at time one would be predictive of the number of negative stressful life events at time two (controlling for negative life events at time one), and that this effect would be specific to depressive symptoms. To test this hypothesis, a regression equation was constructed. For the equation, Time 2 total number of negative events was used as the dependent variable. Next, Time 1 total number of negative events was entered into the regression equation, thereby creating residual change scores in number of negative events from baseline to follow-up (Cohen & Cohen, 1983). The total number of depressive symptoms, conduct disorder symptoms, and anxiety symptoms that were endorsed were entered as predictors. If, as hypothesized, depressive symptoms precede negative life stress, then depressive symptoms will emerge as a significant predictor in the regression equation. If this effect is specific to depressive symptoms, anxiety and conduct disorders symptoms will emerge as non-significant predictors of changes in negative life stress.

As can be seen in Table 1, this was, in fact, the finding. Overall, depressive symptoms at time one were associated with increases in negative life stress from time one to time two (partial correlation $\beta = .13$, $t_{1760} = 5.77$, $p < .001$). It thus appears that depression may be involved in the development and persistence of stress. It is also important to note that anxiety and conduct disorder symptoms were not significantly associated with increases in the number of negative life events (see Table 1). Accordingly, we suggest that the stress generation phenomenon shows some specificity to depressive vs. other symptoms.

Table 1

<table>
<thead>
<tr>
<th>Order of Entry of Set</th>
<th>Predictors in Set</th>
<th>t for within-Set F for set Predictors df</th>
<th>Partial Correlation (PR/pr) Model R²</th>
</tr>
</thead>
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3
Dependent variable = Time 2 Stress Symptoms

<table>
<thead>
<tr>
<th></th>
<th>Time 1stress</th>
<th>288.82</th>
<th>16.10**</th>
<th>1 1764</th>
<th>.375</th>
<th>0.14</th>
</tr>
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<tbody>
<tr>
<td>2</td>
<td>Time 1 depression sx</td>
<td>70.49</td>
<td>5.78**</td>
<td>4 1760</td>
<td>.136</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>Time 1 anxiety sx</td>
<td>70.49</td>
<td>1.58</td>
<td>4 1760</td>
<td>.038</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>Time 1 aggressive cd sx</td>
<td>70.49</td>
<td>1.85</td>
<td>4 1760</td>
<td>.044</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td>Time 1 nonaggressive cd sx</td>
<td>70.49</td>
<td>1.34</td>
<td>4 1760</td>
<td>.032</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Note. $\rho r = \text{partial correlation for within-set predictors. sx = symptoms. cd = conduct disorder.}$

**$p < .01$**

Discussion

The current study replicated and extended work on the stress generation effect reported by Hammen, Davila and colleagues (e.g., Hammen, 1991) to a Black adolescent population. Furthermore, to our knowledge, this study is only the second study to evaluate the specificity of stress generation to depressive symptoms, and symptom specificity was clearly supported, at least as regards anxious and conduct disorder symptoms. Among Black adolescents, like in other groups (Hammen, 1991), depressive symptoms predicted increases in subsequent experience of stressful life events.

The current study not only supported the generality of stress generation to a minority population, but it supported the generality of stress generation to diverse stressors and settings as well. Events experienced by the participants in the present study may have been qualitatively different than events experienced by participants in previous studies, because current participants were of a different race and socioeconomic status than many participants in previous studies. Moreover, participants in this study were from different programs throughout the U.S., supporting the generality of findings to various settings and regions. Our findings thus represent compelling support for the resilience of the stress generation effect – it occurred in an understudied group across various settings and across various stressors.

In the current study stress generation appeared to occur regardless of the distinction between independent and dependent events, suggesting that in this population, depression predicts stress in general (as opposed to dependent stress in particular; see Footnote 3). From stress generation theory (Hammen, 1991), it is clear why stress generation occurs with regard to dependent stressors (i.e., people struggling with depressive symptoms may behave in ways that produce stress). It is less clear why stress generation may occur with regard to independent stressors, and indeed, past work has suggested that depressive symptoms tend not to induce independent stressors.

However, in our study, depressive symptoms were at least as related to independent as to dependent stressors (see Footnote 3). These findings could be due to the fact that the negative life events assessed in our study did not precisely differentiate between dependent and independent stress. It is also a possibility that in people without chronic depression, depression predicts not just contingent events, but stress in general. Interestingly, Hammen’s (1991) study on stress generation in depression focused on women with chronic forms of depression. Future empirical work on this specific issue may wish to determine whether our findings on independent
stressors are specific to this sample. Future conceptual work may wish to reconsider the
distinction between dependent and independent events. It is possible that stressors fall on a
continuum from clearly dependent to absolutely independent or fateful, and that stress generation
processes may affect larger segments of the continuum in given samples. It is also important to
note that many of the stressful events evaluated in this study were interpersonal events.
Depression and stress generation may be related to general interpersonal stressful events in this
population (and, at least in some samples, stress generation processes may be operative with
regard to interpersonal events in general, as opposed to dependent interpersonal events in
particular).

Our symptom specificity results support the view that processes and features specifically
associated with depression lead to increased stress, and, whatever these processes and features
are, they are not as operative with regard to anxious and conduct disordered symptoms. The
delineation of these features and processes represents another area in need of future work (cf.
Davila et al., 1995). We offer one speculation that may guide future work: Negativism,
pessimism, and hopelessness (more associated with depressive than anxious or conduct
symptoms) may, due to their embittering and stultifying effects, produce views of depressed
people in the minds of others that are negative and change-resistant (see Sacco, 1999 for a full
articulation of this view). Others’ negative views may, in turn, subserve critical communications
from others to the depressed person (one form of life stress). Importantly, such communications
have been shown to be strong predictors of depression and its recurrence (Hooley & Teasdale,

It would be of interest, of course, to replicate this study and focus on depression
diagnoses as opposed to symptoms among Black adolescents. Regarding other limitations, it
should be noted that non-returners at Time 2 had significantly more aggressive conduct disorder
symptoms than those who returned. A similar finding was apparent in the Lewinsohn et al.
(1993) Oregon Adolescent Depression Project. While this difference in attrition rate should be
considered, we do not believe it substantially affected our results or conclusions.

That the data analyzed in this study were collected in 1985-1986 could be considered a
drawback. In addressing this concern it is important to note the similarity of definitions of
depression (and other disorders) since the DSM-III in 1980. In versions from the DSM-III to the
DSM-IV-TR the criteria for major depressive episode include depressed mood, loss of interest or
pleasure, change in appetite and weight, insomnia or hypersomnia, psychomotor agitation or
retardation, loss of interest or pleasure in usual activities, fatigue or loss of energy, feelings of
worthlessness or excessive or inappropriate guilt, diminished ability to think or concentrate, and
recurrent thoughts of death, suicidal ideation or suicide attempt. Because of the strong
similarities of the description of depression since the time the data were collected, we suggest
that the findings of the current study remain relevant.

Hammen (1991) suggested that there are important implications of stress generation,
including that people both create and respond to their environments. Depressive symptoms and
behaviors may serve to generate stressful conditions and events, which in turn, may lay the
groundwork for future depressive symptoms, and may partially explain depression chronicity
(Joiner, 2000). People with depressive symptoms and characteristics may contribute to the
occurrence of negative events, and may also find themselves in unstable social circumstances
and high-risk situations in which certain stressors may be likely to occur. Therapeutics that
specifically develop skills for managing and muting life stress (McCullough, 2000; Rudd et al.,
2001) may thus truncate stress generation cycles, which appear operative across a wide range of people.
AUTHOR NOTES

We would like to thank the Henry A. Murray Research Center and Dr. Felton Earls for the use of data and materials.

This research used the Adolescent Health Care Evaluation Study data set [made accessible in 1990, machine-readable data files]. These data were collected by F. Earls and are available through the archive of the Henry A. Murray Research Center of the Radcliffe Institute for Advanced Study, Harvard University, Cambridge, Massachusetts (Producer and Distributor).
FOOTNOTES

1This research used the Adolescent Health Care Evaluation Study data set, collected by F. Earls and available through the archive of the Henry A. Murray Research Center of the Radcliffe Institute for Advanced Study, Harvard University, Cambridge, Massachusetts.

2A focus on symptoms (as opposed to diagnoses) is not only legitimate in context of past work (e.g., Davila et al., 1995), the “continuity-category” debate (see Ruscio & Ruscio, 2000; Vredenburg, Flett, & Krames, 1993), and the pernicious qualities of sub-clinical depressive symptoms (Judd, 2000), but also given the features of the data set (from which symptoms counts are readily available, but from which diagnostic status is more difficult to establish).

3The stressful event questions did not distinguish between dependent and independent events. Much of the stress generation literature focuses on dependent events, or events to which a person actively contributes. When the dependent events in this study (respondent’s involvement with fighting at home, anyone hurt or threatened respondent) were analyzed separately, the stress generation effect was still present. Depression predicts dependent stressful events (t [1759] = 4.21, p < .001). The data also suggest that depression predicts independent stressful events (t [1759] = 4.93, p < .001).

4Results were generally similar among men and women. Depressive symptoms at time one were associated with increases in negative life stress from time one to time two (Men: partial correlation [pr] = .15, \( t [412] = 3.14, p = .002 \), Women: partial correlation [pr] = .13, \( t [1342] = 4.91, p < .001 \)).
REFERENCES


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Expressed emotion, marital distress, and perceived criticism. J. Abnorm. Psychol. 98, 229-235.


BIOGRAPHICAL SKETCH

LaRicka R. Wingate

Education

2001 - present  Florida State University  Tallahassee, Florida

1997 - 2001  Florida State University  Tallahassee, Florida

- Cumulative GPA 3.97, major GPA 4.0,
- B S Degree, Psychology, summa cum laude with honors  April 2001
- Phi Beta Kappa
- A A Degree, Psychology  May 1999

Honors and Awards

McKnight Doctoral Fellowship 2001-present

Howard D. Baker Undergraduate Research Award, Second place, 2001

Admiral Travers Navy and Marine Corps Relief Society Scholarship 1997-2001

Talented Tenth Award – For being one of the ten most active members of the W.E.B. Dubois Honor Society

Publications


**LaRicka R. Wingate, & John C. Brigham.** Own-Race Bias in Relation to Facial Recognition. *Southeastern Psychological Association, Undergraduate Poster Session 2001 – poster presentation.*

**LaRicka R. Wingate, & John C. Brigham.** Own-Race Bias in Relation to Facial Recognition. *Honors in the Major*
Symposium 2001 – oral presentation.


Fall 2002-Present Florida State University Psychology Clinic
- Outpatient community mental health facility. Conducted individual and group therapy. Supervisor: Bryan Loney, Ph.D.

Fall 2002-Present Florida State Hospital
- Inpatient facility for the chronically mentally ill. Conduct individual therapy. Member of suicide and self-injury prevention committee. Supervisor: Larry Annis, Ph.D.

Clinical Experience

Directed Individual Studies
2000 Summer Memory Research
- Researched information on facial recognition. Focused on information that relates target skin tone and attractiveness to facial recognition.

1999 Summer Teaching Social Psychology
- Worked as teaching assistant to Dr. Ned Megargee. Graded student class work, took class notes, assisted students, and lead class review sessions.

1999 Summer Victim Counseling
- Interned at a local domestic violence shelter. Regularly facilitated group counseling at a residential substance abuse treatment program. Performed an intake interview, contacted clients, and provided community education.

1999 Spring Language and Memory
- Worked as a research assistant in the cognitive language and memory lab. Processed participants and conducted computer experiments testing spatial cognition.