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Negative life events, distress, and coping among adolescents in Botswana[1]

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ABSTRACT

This study examined the potential mediating and moderating effects of different ways of coping on the impact of negative life events (NLE) on psychological health among adolescents, 63 boys and 66 girls, in Botswana. *Distraction* as a way of coping and *seeking social support* were found to reduce the impact of NLE on psychological health concerns. *Rumination* was associated with increased distress and less satisfaction with life. Future studies could focus on the use of distraction and seeking social support as coping strategies to reduce the effects of NLEs on psychological distress.

Keywords: adolescent, coping, life events, psychological well-being

INTRODUCTION

Negative life events (NLE) experienced by adolescents increase their vulnerability to substance use (e.g., Gau, Stice, Rohde, & Seeley, 2012; Wills, Vaccaro, & McNamara, 1992) and worsening psychological health through distress (Bouma, Ormel, Verhulst, & Oldehinkel, 2008; Gau et al., 2012; Johnson, Whisman, Corley, Hewitt, & Rhee, 2012; Rosario, Schrimshaw, & Hunter, 2011).It is important to identify factors that relieve or exacerbate distress when adolescents are confronted with NLEs.

NLEs are negatively associated with life satisfaction (McKnight, Huebner, & Suldo, 2002), a variable that has been theorized to mediate the impact of an NLE on psychopathological behaviour. Using satisfaction with life as a mediator, however, has resulted in inconsistent findings (e.g., McKnight et al., 2002; Suldo & Huebner, 2004). Thus, in the present study, both satisfaction with life and distress are used as indicators of psychological health.

Several protective factors have been identified for the NLE-psychological health relationship: (a) social support in both adult (Thorsteinsson & Brown, 2009; Thorsteinsson & James, 1999) and adolescent samples (Rosario et al., 2011; Wills et al., 1992); and (b) absence of parental depression (Bouma et al., 2008). In addition, coping mechanisms

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undertaken by the adolescent may influence the impact of NLEs on distress and psychological health. Adolescents' ability to use behavioural and cognitive methods to cope with stressful situations has been studied extensively (see a review by Compas, Connor Smith, Saltzman, Thomsen, & Wadsworth, 2001), and it is clear that coping has the potential either to reduce or augment the effects of an NLE. Murberg and Bru (2005) found that aggressive coping was related to depressive symptomatology and that anger coping sustained depression, perceived stress, and use of illicit substances. "Acting out" or anger coping has been implicated in many studies as a risk factor for depressive symptomatology (Galaif, Sussman, Chou, & Wills, 2003; Murberg & Bru, 2005), as has coping through rumination (Skitch & Abela, 2008). Based on a longitudinal study, Seiffge-Krenke and Klessinger (2000) reported that avoidant coping was consistently associated with higher levels of depressive symptoms while approach oriented coping was not. Optimistic explanatory coping (e.g., external attribution style when explaining a NLE) has been shown to reduce the effects of NLEs on suicide ideation (Hirsch, Wolford, Lalonde, Brunk, & Parker-Morris, 2009). These combined findings indicate that maladaptive coping such as acting out and rumination may adversely influence adolescents' depressive symptomatology, while adaptive and approach coping, such as the use of optimism, seems to have the opposite effect. Psychological health may also be affected through the relationship between NLE and substance use. For example, smoking, as a way of coping augments the effects of NLEs on distress (Rosario et al., 2011).

The examination of the effects of different ways of coping among adolescents has been extensive but has mainly been focused on 'western' countries. This does not provide data from adolescents in non-western cultures. In non-Western countries, different NLEs are encountered where, for instance, adolescents face increased rates of poverty (e.g., Good, 1999) and HIV(e.g., Dyer, Roby, Mupedziswa, & Day, 2011; G. Thupayagale-Tshweneagae, 2010; Jayeoba et al., 2012; Nitza, Chilisa, & Makwinja-Morara, 2010; Rotheram Borus, Stein, & Lin, 2001; Underwood, Skinner, Osman, & Schwandt, 2011), as well as barriers to receiving high quality education (e.g., Tella & Akande, 2007). Cultural context must be considered (Gelhaar et al., 2007; Ntsayagae, Sabone, Mogobe, Seboni, Sebego, & Brown, 2008). Findings and theoretical frameworks from the West need to be tested and examined in non-western cultures. Western research consistently shows that how adolescents cope with life events has an impact on their psychological well-being (Carleton, Esparza, Thaxter, & Grant, 2008; Galaif et al., 2003; Murberg & Bru, 2005; Sontag, Graber, Brooks-Gunn, & Warren, 2008). However, few if any studies have been conducted to examine the effects of different coping strategies on the relationship between *the impact of NLEs* and *psychological well-being (distress)* in adolescents outside western countries. Furthermore, there is a lack of quality cross-culturally valid measures for adolescent coping strategies (Sveinbjornsdottir & Thorsteinsson, 2008).

In light of the current lack of knowledge about (a) NLEs commonly experienced by adolescents in non-western countries, (b) coping mechanisms used to deal with NLEs and their outcomes in non-western countries, and (c) whether measures designed for western cultures are suited for use in non-western cultures, there is a need for research that examines these factors. A result might be the development of high quality interventions to assist adolescents in managing NLEs. The present study was conducted in Botswana.

Hypotheses

Although clearly there are discrepancies between NLEs more typically encountered by western versus non-western adolescents, it is likely that there are NLEs that are universally experienced during adolescence. Therefore, in line with research conducted in the West, the first hypothesis was that adolescents who employed maladaptive coping would report greater psychological distress and less satisfaction with life than adolescents who employed adaptive coping. The second hypothesis predicted that the relationship between NLEs and *psychological well-being* (i.e., life satisfaction and distress) would be moderated by coping (adaptive and maladaptive).

A secondary aim of the research was to explore the prevalence of various NLEs experienced by adolescents in Botswana.

METHOD

Participants

The participants were 128 eighth and twelfth grade students from junior high schools and senior high schools in the capital city of Botswana and surrounding villages. The participants included 63 boys and 66 girls aged from 13 to 19 (males $M = 15.87$, $SD = 1.27$; females $M = 16.32$, $SD = 1.54$). There were 58 participants living in the capital city and 70 living in rural areas; 82 were in junior high school and 46 were in senior high school. Participants lived with five other people on average (mode = 4, median = 5, $M = 5.19$, $SD = 2.52$), ranging from 1 to 14 people. Mothers' highest level of education was none or primary for 23%, junior secondary 39%, senior secondary 11%, and tertiary 28% (101% in total due to rounding). Fathers' highest level of education was none or primary for 17%, junior secondary 24%, senior secondary 17%, and tertiary 43% (101% in total due to rounding). Level of education indicated a large range in socio economic status among participants. Originally study information and consent forms were sent home with 200 students to obtain parental/guardian approval for participation in the study. Of these 135 were returned. Seven students with approved consent were excluded from data analyses as they failed to complete one of more of the scales.

Measures

Each participant was asked about his/her age, sex, and place of residence. An item on family composition asked the number of people the participant lives with and the level of education for mother and father. All questions were in Setswana.

Impact of NLE was measured using a modified version of the Negative Life Events Inventory (NLEI; Wills et al., 1992). For cultural reasons three additional stressors were added to the NLEI: (a) a friend had an illness (experienced by 13% of our sample), (b) a friend died (experienced by 11% of our sample), and (c) I got arrested by the police (experienced by 4% of our sample). The NLEI identifies stressors and level of stress over the past year. It includes 11 events that occurred to family members (e.g., "Somebody in my family had a serious illness") and 9 events that occurred to the adolescent (e.g., "I had a serious illness").

Participants followed a two-step process. First, each participant answered "yes" or "no" to the question of whether the particular event "happened to you." Second, participants were then asked to rate the perceived stressfulness of each experienced event (i.e., the extent to which the event affected the participant's life) on a 4-point Likert scale ranging from 0 "*not at all*" to 3 "*extremely severe.*" Items that were answered with "no" got a 0 rating. The NLEI score was the mean impact rating of all 23 items. In the present study internal reliability as measured by Cronbach's Alpha was .77. The NLEI was used as a predictor of psychological well-being, *not* the *number* of NLE. NLEI has been found to be a more accurate predictor of psychological well-being than the *number* of NLE (Nezu, 1986).

Five *coping strategies* were measured using the Measure of Adolescent Coping Strategies (MACS; Sveinbjornsdottir & Thorsteinsson, 2012). This is a new adolescent coping scale that has demonstrated better validity than previous scales, including some cross-cultural validity (Sveinbjornsdottir & Thorsteinsson, 2008; Sveinbjornsdottir & Thorsteinsson, 2012). Participants were asked to think of a stressful situation that has occurred in their life. They were then asked to circle numbers in response to statements such as "I tried to be or stay happy" and "I tried to harm myself" on a 4-point Likert scale ranging from 0 "*I did not use*" to 3 "*I used almost all the time*".

The MACS has five factors: (a) distraction (e.g., "I tried to stay happy" and "I made a decision not to think too much about it"); (b) acting out (e.g., "I yelled or screamed at people who were not involved in the situation" and "I tried to make myself feel better by drinking alcohol, smoking, using drugs or medications"); (c) rumination (e.g., "I had angry thoughts about myself" and "I thought of the problem all the time"); (d) social support (e.g., "I talked to someone to find out more about the situation" and "I let people know what I needed"); and (e) self-care (e.g., "I tried to look after my health by eating food that was good for me" and "I drew on my religious faith"). The MACS is two dimensional. One dimension includes adaptive factors (see a, d, and e) and the other includes maladaptive factors (see b and c). It has good cross-cultural validation and test-retest reliability coefficients compared with other adolescent coping scales. Internal consistency in the Botswana version as measured by Cronbach's Alpha was satisfactory for *distraction* (.67), *seeking social support* (.75), and *self-care* (.69). However, internal consistency was low for *rumination* (.55) and *acting out* (.62), reducing confidence in results related to rumination and acting out, the two maladaptive coping strategies.

The Setswana version of the 12 items of the English version of the General Health Questionnaire (GHQ; Goldberg, 1972) was used to measure *non-psychotic distress* (e.g., "Have you recently felt constantly under strain ?", "Have you recently lost much sleep over worry", and "Have you recently been able to face up to problems?"). Wissing and Vorster (2000) found that the Setswana GHQ version compared favorably with the English version and reported internal reliability using Cronbach's Alpha ranging from .70 to .86. In the present study it was.79.

The Setswana version of the *Satisfaction with Life scale* (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993) was designed to assess self-reported global judgment of one's quality of life. The SWLS includes five items such as "So far I have gotten the important things I want in life" and "I am satisfied with my life" scored on a 7 point Likert type scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). The SWLS has been found to be valid and reliable in both young and old participants (Pavot & Diener, 1993). Cronbach's Alpha reliability reported with the Setswana version of the Satisfaction with life varies between .79 and .84 (Diener et al., 1985; Pavot & Diener, 1993). In the present study it was .74.

Procedure

Permission for involvement in the study was requested from Heads of schools, and Ethics approval was obtained from a University Human Ethics committee in the research administrating university prior to proceeding. Participants were recruited from schools in the capital of Botswana and surrounding villages. Written consent to participate in the study was obtained from parents of students. Participants were then asked to complete a set of questionnaires. All questions were in Setswana. MACS was translated specifically for this project from English to Setswana. The scale was first translated to Setswana independently by two Setswana speakers with knowledge of psychological terms and fluent in English. It was then translated back to English by two people who had no knowledge of the original version of the scale. Comparisons of the back translated scale were made with the original scale and modifications made to minimize discrepancies between the original and back-translated version.

Statistical Analyses and Interpretation

SPSS version 20 was used for statistical analyses. Multiple linear regression was used to determine potential moderators of the NLE-psychological health relationships. Moderation was tested using centered moderators and independent variables to calculate an interaction term (i.e., independent variable by moderator). This interaction term was entered with the independent variable and moderator in the regression equation, with a statistically significant

interaction term indicating a statistically significant moderation. An SPSS syntax was used to get further results in relation to interaction related slopes and plots (O'Connor, 1998).

Three slopes were produced for each moderator at one standard deviation above and below the mean and at the mean. The independent variable (x-axis) shows values two standard deviations below and above the mean. The convention of small (0 to 0.2), medium (0.2 to 0.8), and large (> 0.8) was used for effect sizes in standard deviation units (Cohen, 1988). The standard deviation unit reported here is d which is the same as unbiased Hedges' g and similar to Cohen's d (see Borenstein, Hedges, Higgins, & Rothstein, 2009). The corresponding partial eta squared values were small for 0 to .01, medium for .01 to .14, and large for .14 to 1.

RESULTS

Table 1 shows the impact of different NLE for participants. Table 2 shows that there were statistically significant effects for sex differences on acting out, rumination, and seeking social support. As a result, sex was included in the relevant initial regression models but dropped from the reported model due to small effects. Furthermore, there were no statistically significant differences between urban and rural adolescents but there was a moderate effect size difference for acting out and self-care. Age was not significantly associated with any coping style; *r* values ranged from .01 to .13. The most prevalent NLE were low grades (59%), death of a relative (57%), sickness of a relative (47%), parents' financial problems (32%), and relative involved in a serious accident (24%). The first hypothesis was only partly supported (see Table 3). The maladaptive coping strategy of rumination was positively associated with distress and negatively with satisfaction with life. However, acting out was

Table 1: Mean (SD) Impact of Negative Life Events, from 0 to 3, Reported by Botswana Adolescents

Event	Percentage reporting impact	*M*	*SD*
Low grades	59	1.67	1.43
Relative died	57	1.54	1.41
Sick relative	47	1.21	1.40
Parents had financial problems	32	0.70	1.12
Relative involved in a serious accident	24	0.63	1.18
Parent left work	23	0.59	1.12
Problems with appearance	21	0.46	0.95
Broke up with girl/boyfriend	20	0.48	1.00
Friends left me	19	0.48	1.03
Did not get into desired group	19	0.41	0.91
Misunderstanding between parents	17	0.50	1.11
Relative arrested by police	16	0.34	0.81
Moved house	16	0.35	0.87
Argument with parents	16	0.37	0.90
I got very sick	15	0.41	1.01
Friend got ill	13	0.32	0.88
Parents separated	12	0.35	0.95
Friend died	11	0.29	0.84
I had a serious accident	10	0.27	0.84
New person in family	9	0.14	0.51
Arrested by police	4	0.11	0.55
Step parent	3	0.07	0.40
Expelled from school	1	0.02	0.18

not associated with either one of these outcome variables. Self-care was positively associated with satisfaction with life and negatively with distress.

The second hypothesis examined the impact of potential moderators (i.e., distraction, acting out, rumination, social support, and self-care) of the NLE-life satisfaction and NLE-distress relationships. The NLE-distress relationship was found to be moderated by distraction and seeking social support. Table 4 shows the results. The more individuals used distraction and seeking social support the less impact of NLE on distress. See Figures 1 and 2 for results.

Table 2: Means and standard deviations for different coping strategies, with comparisons by sex and location

Coping	Male (n = 62)	Female (n = 66)	t (df=126)	p (two-tailed)	d [$CI_{95\%}$]
Distraction	1.44 (0.66)	1.56 (0.51)	1.17	.25	0.20 [-0.14, 0.55]
Acting out	0.32 (0.42)	0.47 (0.51)	1.91	.06	0.32 [-0.03, 0.67]
Rumination	1.28 (0.60)	1.57 (0.51)	2.98	.00	0.52 [0.17, 0.87]
Seeking social support	1.12 (0.69)	1.48 (0.66)	2.97	.00	0.53 [0.18, 0.88]
Self-care	1.81 (0.65)	1.91 (0.63)	0.92	.36	0.16 [-0.19, 0.50]
Impact of NLE	0.52 (0.40)	0.50 (0.40)	0.30	.77	-0.05 [-0.40, 0.30]
Satisfaction with life	4.43 (1.52)	4.35 (1.25)	0.35	.72	-0.06 [-0.40, 0.29]
Distress	0.79 (0.44)	0.86 (0.55)	0.82	.42	0.14 [-0.21, 0.49]
	Urban (n=58)	Rural (n=70)	t (df=126)	p (two-tailed)	d [$CI_{95\%}$]
Distraction	1.51 (0.62)	1.49 (0.57)	0.18	.85	-0.03 [-0.38, 0.31]
Acting out	0.45 (0.49)	0.35 (0.46)	1.17	.24	-0.21 [-0.56, 0.14]
Rumination	1.44 (0.65)	1.43 (0.52)	0.09	.93	-0.02 [-0.37, 0.33]
Seeking social support	1.26 (0.70)	1.34 (0.69)	0.67	.50	0.11 [-0.23, 0.46]
Self-care	1.78 (0.62)	1.93 (0.65)	1.39	.17	0.23 [-0.11, 0.58]
Impact of NLE	0.51 (0.41)	0.51 (0.39)	-0.09	.93	0.00 [-0.35, 0.35]
Satisfaction with life	4.40 (1.32)	4.37 (1.44)	0.12	.91	-0.02 [-0.37, 0.33]
Distress	0.86 (0.50)	0.80 (0.50)	0.69	.49	-0.12 [-0.47, 0.23]

Note. NLE = negative life events.

Table 3: Correlation Matrix of all key variables (N = 128)

Measure	1	2	3	4	5	6	7
1. Distraction							
2. Acting out	.09						
3. Rumination	.38**	.27**					
4. Seeking social support	.43**	.03	.38**				
5. Self-care	.42**	-.21**	.22**	.62**			
6. Impact of negative life events	-.06	.19*	.17*	.02	.03		
7. Distress	-.09	.12	.14*	-.08	-.16*	.24**	
8. Satisfaction with life	.09	.09	-.17*	.01	.25**	-.30**	-.30**

* $p < .05$ (one-tailed). ** $p < .01$ (one-tailed).

Table 4: Moderating effects of Distraction and Seeking Social Support on the relationship between Negative Life Event and distress (N = 128)

Predictor	*b*	95% *CI*	β	*r*	*sr*
Impact of NLE	0.21	[-0.01, 0.43]	.17	.24	.16
Distraction	-0.10	[-0.25, 0.05]	-.12	-.09	-.11
Distraction x Impact of NLE	-0.51	[-0.96, -0.06]	-.21	-.24	-.19
Fit for model R^2 = .10, Adjusted R^2 = .08, $F(3, 124) = 4.54$, $p = .005$					
Impact of NLE	0.24	[-0.02, 0.46]	.19	.24	.19
Seeking social support	-0.06	[-0.18, 0.07]	-.08	-.08	-.08
Seeking social support x Impact of NLE	-0.32	[-0.65, 0.01]	-.17	-.23	-.16
Fit for model R^2 = .09, Adjusted R^2 = .07, $F(3, 124) = 4.13$, $p = .008$					

Note. NLE = negative life events. The semi-partial (*sr*) correlation is the *Part* correlation in SPSS. The *r* is the zero-order correlation. Models using sex and location as predictors in step one were also examined. However, sex and location did not significantly alter the outcome and neither was a statistically significant predictor in any of the models examined.

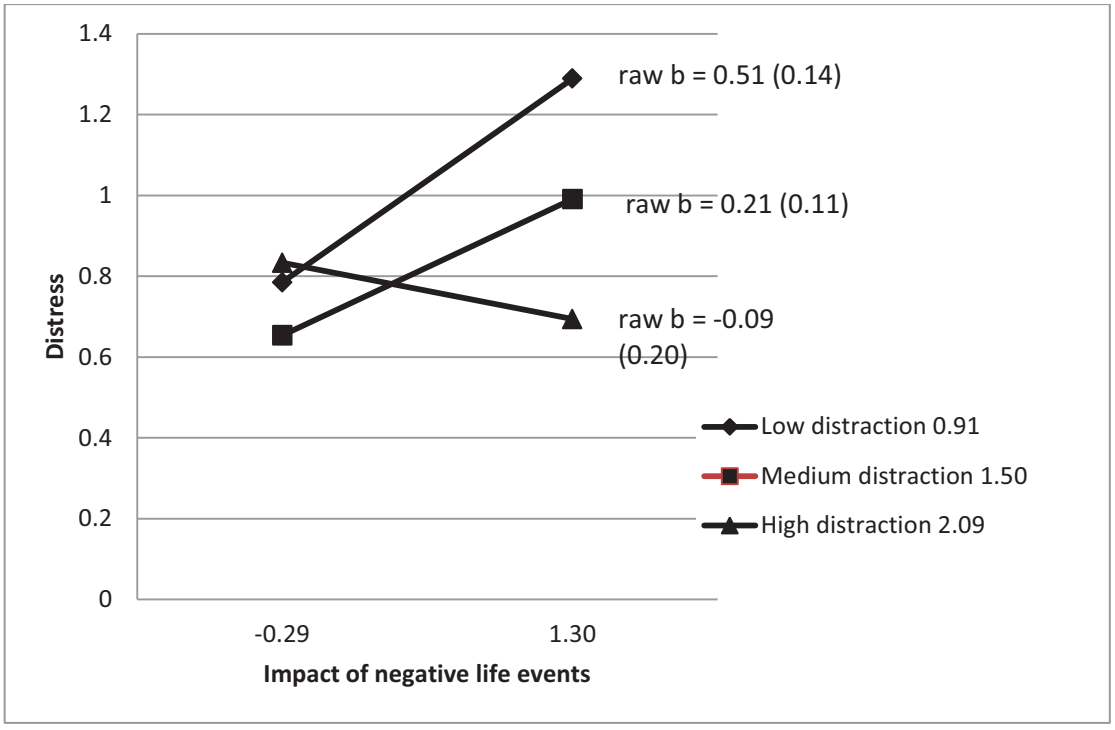


Figure 1. Interaction between *Impact of negative life events* and *Distraction*; mean raw values (SE) reported for easier reference back to respective scales.

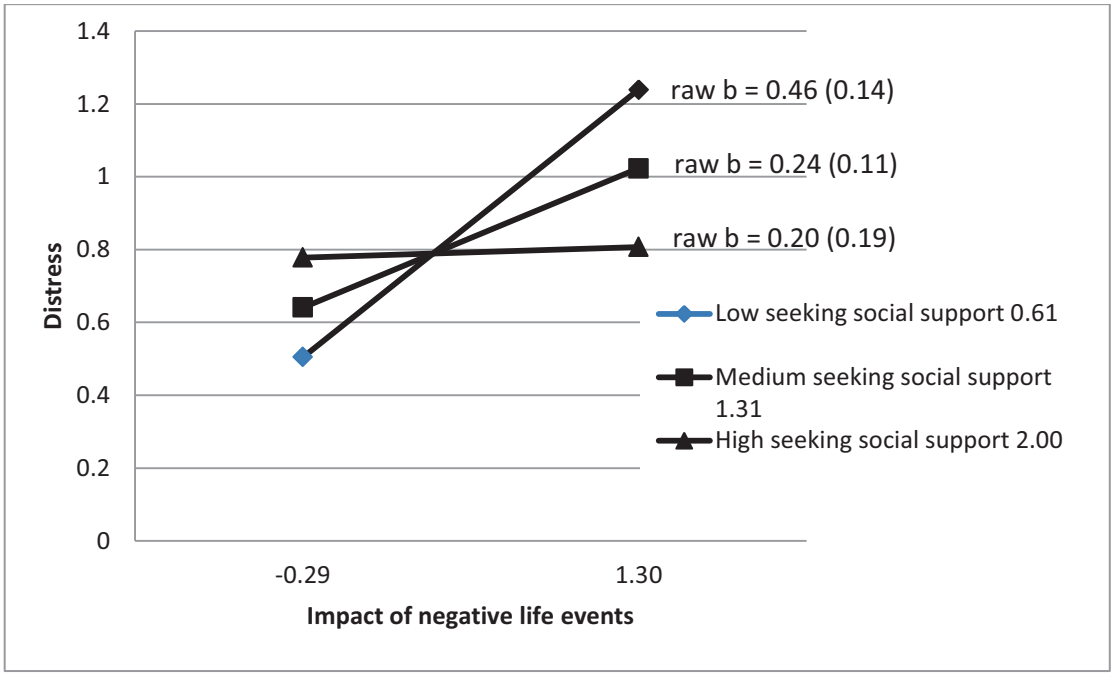


Figure 2. Interaction between *Impact of negative life events* and *Seeking social support*; mean raw values (SE) reported for easier reference back to respective scales.

DISCUSSION

The purpose of this study of adolescents in Botswana was to examine the effects of coping on the impact of NLE on psychological health as captured by the factors of satisfaction with life and distress. The first hypothesis was partially supported (with medium effect sizes), showing that rumination was positively associated with distress and negatively with satisfaction with life. Self-care was positively associated with satisfaction with life. The second hypothesis was also partially supported, showing that the use of distraction and seeking social support reduced the impact of NLE on distress.

The results suggest that it is important for adolescents in Botswana to reduce rumination and to increase the use of self-care, distraction, and seeking social support to help deal with the impact of NLE. The moderating effects of distraction on reducing the effects of high impact NLE on psychological distress suggest that adolescents who stay calm and in control in the face of NLE experience less psychological distress. If a situation is uncontrollable, distraction as a coping mechanism may be the only solution, even if it does not address the causes of the NLE.

The present findings add support to previous findings regarding the impact of NLE on psychological health (e.g., Bouma et al., 2008; Gau et al., 2012; Johnson et al., 2012; McKnight et al., 2002; Rosario et al., 2011; Votta & Manion, 2003) and the potential effects of coping as moderators of these effects (e.g., Hirsch et al., 2009; Rosario et al., 2011). However, the present findings suggest that different ways of coping may have different moderating effects. These findings may help to build a theoretical model that may help to design intervention programs.

The findings from the study provided an understanding of the stressors that impinge upon Botswana adolescents. The stressful incident reported by the largest group of participants was obtaining low grades. This finding is consistent with studies conducted in Europe (e.g., Tyszkowa, 1990) and China (e.g., Liu, Kurita, Uchiyama, Okawa, Liu, & Ma,

2000) that found that a drop in school achievement and bad grades were major issues for adolescents. Wigfield, Eccles, Mac Iver, Reuman, and Midgley (1991) postulated that school related problems might arise because of a decrease in achievement and/or a decrease in motivation. Given the cross cultural similarities of stressors, the use of coping strategies might also be expected to be similar across cultures.

However, there are specific stressors facing the adolescents from Botswana as revealed by the high percentage of participants reporting concerns with parental financial difficulty, and sickness, or even death, of a relative. One possible explanation for this is the high prevalence of HIV/AIDS in Botswana (WHO, 2008, 2010). Few lives would be untouched by this disease. It is estimated that 50% of all households are likely to have one HIV infected member (Botswana Institute for Development Policy Analysis, 2000). Although adolescents in Botswana may share similar NLE to their counterparts in Europe, US, and Asia, they also experience NLE that are unique to them and their counterparts in other parts of Africa.

The results presented here should be interpreted with caution. First, despite the common practice of using moderation analyses on cross-sectional data for model building, models based on cross-sectional data cannot predict the respective model based on longitudinal data (Maxwell & Cole, 2007), with neither design properly addressing cause and effect relationships. Cross sectional studies can be used for theoretical model building that may then be used as a basis for experimental and longitudinal studies (see for example Caples & Barrera, 2006). Second, the participants were students who were present on the day the study was distributed. Students who were not included were those who have dropped out of school, who were absent from school on that day, who refused to participate, or who were not given permission to participate by parents or guardians. It is possible that among these students were some with a greater number of NLE and psychological problems. Students with psychological problems are more likely to drop out of school or have school attendance problems (Connelly, Blackstock, Brown, Johnston, & Mackay, 1993), with low perceived satisfaction with life also predicting school drop-out (Liem, Lustig, & Dillon, 2009).

The present study provides some understanding of how ways of coping affect the relationship between NLE and psychological health (distress and satisfaction with life) in adolescents in Botswana. The study sheds light on areas in which adolescents from Botswana may differ from western adolescents with regard to NLEs and coping mechanisms.

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