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Letting Oneself Go Isn't Enough: Cognitively Oriented Expressive Writing Reduces Preadolescent Peer Problems

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Peer problems are a stressor for many early adolescents, and simple cost-effective tools for managing peer stress are needed. Expressive writing (EW) may be one such tool. With a sample of middle school children aged 12–14 years (n = 119; 53% males), this research evaluates whether cognitively oriented expressive writing (CEW), which focuses more on psychological self-distancing, improves personal well-being better than traditional EW, which focuses more on emotional disclosure. CEW—compared with EW—slightly enhanced long-term social adjustment for the entire sample, and increased positive affect for those early adolescents that reported more peer problems at baseline. These findings suggest that structured writing instructions with early adolescents may be key to improvements.

Peer relationships are of growing importance during adolescence. Healthy interpersonal relationships are a significant source of social support and personal adjustment, whereas unhealthy interpersonal relationships are a significant source of social stress, anxiety, and depression from the early stages of life (e.g., La Greca, Davila, & Siegel, 2008, with specific reference to the period of adolescence; Wentzel, Barry, & Caldwell, 2004, with specific reference to the period of early adolescence).

How early adolescents cope with interpersonal problems matters. Hampel and Petermann (2006) found that in early adolescence (11–14 years), active and cognitively oriented coping strategies such as positive self-instructions and positive distraction reduced interpersonal stress, whereas passive avoidance, rumination, and resignation increased interpersonal difficulties. Early adolescents with a passive or, conversely, impulsive attitude toward their peer problems are more likely to experience negative emotions, low self-esteem, and feelings of social rejection (Schwartz, 2000; Schwartz, Proctor, & Chien, 2001). Peer problems such as victimization can undermine the development of effective emotional self-regulation and coping strategies such as the ability to appraise and modify emotional reactions (Rudolph, Troop-Gordon, & Flynn, 2009; Southam-Gerow & Kendall, 2002).

Adolescents, even those that have good coping resources, could use additional tools for managing peer stress (K. L. Goodman & Southam-Gerow, 2010); especially for those at risk, these tools should not be based solely upon active help seeking, which can make an adolescent feel even more vulnerable (Clarke, 2006; Kochenderfer-Ladd & Skinner, 2002).

In this study, we experimentally compare traditional expressive writing (EW) with cognitively oriented expressive writing (CEW) as they affect coping strategy effectiveness for early adolescent peer problems. We begin by discussing EW in general and then move to EW among adolescents with special attention given to highlight the differences between early and late adolescence.

Expressive Writing: General Issues

Disclosing one's thoughts and feelings through writing may be an easy, yet powerful tool in facilitating an adolescent's attempt to emotionally and cognitively appraise stressful events (Margola, Facchin, Molgora, & Revenson, 2010) and to select more functional coping responses (Giannotta, Settanni, Kliewer, & Ciairano, 2009). Expressive writing (Pennebaker & Beall, 1986) is a brief,

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cost-effective intervention technique where people write about stressful or traumatic experiences in three to five sessions of 15–20 min each, over three to five consecutive days (Pennebaker, 2004) or over several weeks (Smyth, 1998). EW has shown small but consistent benefits for a variety of mental and physical health outcomes among college students and adult populations (Frattaroli, 2006; Pennebaker, Facchin, & Margola, 2010).

How does EW confer these benefits? Lepore, Greenberg, Bruno, and Smyth (2002) suggested that EW allows people to observe themselves approaching their stressors by disclosing and appraising their negative emotions.[1] During the writing process, upsetting situations should appear more controllable, resulting in a sense of emotional mastery and in better adjustment on several health domains. In particular, three basic mechanisms (i.e., *emotional*, *cognitive*, and *exposure*) have been proposed (see Baikie & Wilhelm, 2005; Fivush, Marin, Crawford, Reynolds, & Brewin, 2007; Lepore et al., 2002; Margola et al., 2010; Sloan & Marx, 2004, for a more in-depth discussion of these three mechanisms). The *emotional* mechanism refers to confrontation and catharsis through venting of negative feelings with disinhibition, resulting in increased emotional self-regulation. The *cognitive* mechanism refers to mental processing based on meaning-making enhancement as well as improved causal-explanatory, resulting in improved narrative coherence. Finally, the *exposure* mechanism refers to techniques that promote prolonged contact with and consequent habituation to aversive stimuli or negative experiences in a secure environment. It should be noted that these mechanisms have a high degree of overlap and mutual influence, and how these mechanisms confer their benefits is not fully known (Frattaroli, 2006; Pennebaker et al., 2010; Smyth & Pennebaker, 2008).

Expressive Writing: Adolescents

Expressive writing with early adolescents has only recently been studied. A meta-analytic review by Travagin, Margola, and Revenson (2015) evaluated the effects of EW among adolescents aged 10–18 and found small yet significant effects for a variety of outcome domains related to emotional and social adjustment. The comparison between early and older adolescents emerged as a potential moderator of the EW effects (Travagin et al., 2015). Further, the presence of negative effect sizes at the individual level, in particular for samples with early adolescents, may suggest that the EW protocol should be adjusted for adolescents aged 11–14 to reduce the potential detrimental effects and enhance its efficacy.

Analysis of the written essays in the studies of adolescents reveals that EW often elicits concerns about peer relationships such as friend and romantic relationship conflicts as well as episodes of social exclusion, bullying, or teasing at school (Fivush et al., 2007; Horn, Pössel, & Hautzinger, 2010; Reynolds, Brewin, & Saxton, 2000). This makes the writing technique feasible and meaningful for early adolescents' personal experiences. Despite this, only one study (Giannotta et al., 2009) has experimentally tested EW's effectiveness for adolescent peer problems. Giannotta et al. found that EW led to positive reappraisal and distraction for those adolescents who had experienced high levels of peer victimization. Writing about conflicts with peers led adolescents to increased self-awareness toward their problems, and promoted the use of adaptive coping. Nevertheless, no main effect of EW on adolescent emotional adjustment was found.

Analyzing the linguistic writing patterns of 20 high school students who were dealing with the death of a classmate, Margola et al. (2010) demonstrated that some students revealed a persistent inhibition in their cognitive efforts and remained emotionally distressed even after writing, whereas for others the writing resulted in a more stable and positive adjustment trajectory. In a secondary analysis of the written patterns of 112 early adolescents during an EW intervention, Fivush et al. (2007) showed that those in the EW condition who spent more time explaining or negatively evaluating their experiences showed an (unexpected) increase in internalizing problems postintervention. In contrast, participants who spent more time attempting to cope with their problems reported fewer somatic symptoms at follow-up.

Considering this contrasting evidence from a developmental perspective, it is possible that the individual processes employed by early and middle adolescents through written disclosure may reflect different (and evolving) emotional and cognitive abilities. As adolescents differ in their ability

[1]It is noteworthy that the emotion regulation processes advanced by Lepore et al. (2002) regarding EW, that is, attention, habituation, and cognitive restructuring, echo what Freud (1914) identified—a century ago—as the key factors in dealing with trauma and in the concept of resistance, through his famous essay "Remembering, Repeating and Working-Through".

to regulate emotions (Huizinga, 2006; Luna, Garver, Urban, Lazar, & Sweeney, 2004), to deal with negative experiences through narrative processes (Fivush et al., 2007; McLean, Breen, & Fournier, 2010; Sales, Fivush, Parker, & Bahrick, 2005), and to reach habituation after exposure processes (Baker, Den, Graham, & Richardson, 2014; Drysdale et al., 2014; Pattwell, Lee, & Casey, 2013), EW may not be always suitable in its standard unstructured and emotion-focused format (Fivush et al., 2007). Although some adolescents may be able to deal with recalling emotional experiences through a nondirected writing task, others may need a more structured writing task that gives them examples, suggestions, or lines of reasoning. Because structured directions lead to self-distancing processes (vs. mere avoidance) and supply a framework of reference (Ayduk & Kross, 2010; Kross, Duckworth, Ayduk, Tsukayama, & Mischel, 2011), a structured writing task may help adolescents focus less on recounting their experiences and more on rearranging these experiences in ways that provide a sense of psychological mastery and resolution (Kross & Ayduk, 2008; Kross, Ayduk, & Mischel, 2005). This could be particularly relevant in the case of early adolescents dealing with severe interpersonal stressors (e.g., peer victimization) who often feel emotionally overwhelmed and hopeless (e.g., Schwartz, 2000; Schwartz et al., 2001).

The Current Study

This study represents one of the few to test the effectiveness of two types of EW that differ in terms of writing instructions (for a comparison of traditional writing instructions with benefit-finding instructions, see Facchin, Margola, Molgora, & Revenson, 2014). Specifically, we compared traditional EW with CEW in terms of coping strategy effectiveness for adolescent peer problems. Traditional EW focuses on disclosure of deepest thoughts and feelings, whereas CEW focuses less on disclosure and more on rearranging experiences to provide insight and a sense of psychological resolution via psychological self-distancing (Kross, Ayduk, & Mischel, 2005).

Cognitively oriented expressive writing may trigger processes that are particularly adaptive among early adolescents. Psychological self-distancing is used by youth as a strategy to reduce their emotional reactivity in appraising a stressful situation (Kross et al., 2011). Mere disclosure of negative memories may be too emotionally arousing for some adolescents, resulting in rumination and not resolution (Dundas, 2000; Kross et al., 2011). Thus, writing in a more self-distancing fashion may provide a way for early adolescents to assess the emotional context of their problems without becoming overwhelmed (Clarke, K. L. 2006; Goodman & Southam-Gerow, 2010; Kochenderfer-Ladd & Skinner, 2002).

Because the effect of coping strategies on youth adjustment appears to be moderated by interpersonal stressor characteristics (Clarke, 2006; Giannotta et al., 2009; Kochenderfer-Ladd & Skinner, 2002), peer problems preintervention were considered a putative moderator. Positive and negative affect and contact with peers were used as indicators of emotional and social adjustment outcomes, respectively. Positive and negative affect measures are used in EW studies both with adults and with youth populations as a proxy for emotional adjustment (see Frattaroli, 2006; Travagin et al., 2015). Contact with peers represents the frequency of positive interactions with friends, which is hypothesized to represent a protective factor for social adjustment in early adolescents (Allen, Porter, McFarland, Marsh, & McElhaney, 2005). We predicted that CEW would be more effective than EW in the longer term (2 months after the last writing session, T3) than in the short term (2 weeks after the last writing session, T2) because the effects of written disclosure are often more pronounced 2–3 months after treatment (Frattaroli, 2006; Sloan, Feinstein, & Marx, 2009). This could be particularly true for early adolescents who need more time to finalize the cognitive and/or emotional processes elicited in the writing task (Fivush et al., 2007; Travagin et al., 2015). For similar reasons, we also predicted that both CEW and EW would be more effective in the longer (T3) than in the shorter term (T2) for adolescents experiencing greater peer problems when compared with a control group of participants not performing any writing task. For adolescents dealing with greater emotional stress, the writing intervention may be an appropriate tool to cope with stress, having stronger effects later in time (Giannotta et al., 2009; Travagin et al., 2015).

METHOD

Participants

Students from one middle public school in northern Italy participated in the study. After the school agreed to participate, parents received a letter with an explanation of the study, a permission form, and

a consent form for their child. Inclusion criteria were as follows: age of 11–14 years and ability to proficiently read, write, and process information in Italian. Students with a condition interfering with the writing task, for example, history of suicidal ideation or other diagnosed clinical conditions (based on routine screenings provided by the school), would have been excluded although no student was. Suspected imminent risk such as suicidal ideation was not detected in any of the students' essays. Of 121 eligible students, 119 were given parental permission to participate, and all 119 provided assent. The sample was composed of 63 males and 56 females. Mean age was 12.68 (SD = 0.69; range 12–14 years). Most participants were Italian (n = 111) with the remaining being Brazilian (n = 3), Romanian (n = 2), or other (n = 3).

Procedure

A quasi-experimental design with three conditions was used. Seventy-eight participants from four classrooms were randomly assigned, within blocks created by gender and classrooms, to one of two writing conditions: EW (n = 38) or CEW (n = 40). The 41 students from the other two classrooms were assigned to the control condition (assessment-only). The RANDBETWEEN function of Microsoft Excel 2007 (version 12.0) was used to generate random numbers for assignment.

Participants completed the Positive and Negative Affect Scales (PANAS; Watson, Clark, & Tellegen, 1988), Degree of Peer Activity List (DPAL; Wissink, Dekovic, & Meijer, 2009), and the Peer Problems (PP) subscale of the Strengths and Difficulties Questionnaire (SDQ; R. Goodman, Meltzer, & Bailey, 1998) prior to writing on the same day of the first session (i.e., baseline or T1). The PANAS and DPAL were administered again 2 weeks after the last writing session (T2) and 2 months after the last writing session (T3).

Expressive writing and CEW participants wrote about peer problems in their classroom and during regular school hours for four 15-min sessions spaced 1 week apart. It should be noted that traditionally, EW writing sessions are completed on three consecutive days (Pennebaker, 1997), but several researchers have found that increasing the interval between sessions is more beneficial for young adolescents because it provides them with more time to make sense of the situation and reduce fatigue arising from the emotional and cognitive involvement in writing (see Travagin et al., 2015). The writing instructions were typed and given to participants. Participants wrote individually without talking to one another. Control condition participants completed the study measures at times equivalent to the writing conditions' baseline (T1) and follow-ups (T2 and T3), but without performing any writing task. Instead, they attended their scheduled lessons during those times. To prevent expectations about the aims of the study, research assistants were not aware of research hypotheses, and participants in all conditions were simply told that we were "interested in the lives of students, especially in their peer relationships."

Materials

EW and CEW. Because Frattaroli's meta-analysis (2006) demonstrated that EW interventions with focused instructions had a larger effect on psychological health than those with less focused instructions, participants in both writing conditions were asked to write about a specific peer problem (i.e., "a recent problem with one or more of your peers"), but the instructions differed between the EW and CEW conditions.

The EW instructions, adapted from Pennebaker (1997), were designed to foster emotional disclosure by asking participants to focus on their deepest thoughts and feelings related to a peer problem:

> We are asking you to write about your very deepest thoughts and feelings regarding a recent problem with one or more of your peers, especially one you did not reveal to anybody. The important thing is that you let go and explore your very deepest emotions and thoughts. You might tie your topic to your past, your present, or your future. All of your writing will be completely confidential. Do not worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, continue to do so until your time is up.

The CEW instructions, adapted from Nazarian and Smyth (2013), focused on cognitive processes and insight about an experienced peer problem (Broderick, Junghaenel, & Schwartz, 2005; Ullrich & Lutgendorf, 2002). Participants in this condition were asked to write about what their peer problem meant to them, how they tried to solve the problem and make sense of it, and how the situation would be changed in the future. The instructions were:

> We are asking you to write about a recent problem with one or more of your peers,

especially one you did not reveal to anybody. We are particularly interested in understanding how you have tried to make sense of this situation and what you told yourself about it to help you deal with it. If the situation you are describing is not resolved yet or is difficult to deal with, how are you still trying to do that? How are you trying to make sense of it? How do you think the situation will change in the future? All of your writing will be completely confidential. Do not worry about spelling, sentence structure, or grammar. The only rule is that once you begin writing, continue to do so until your time is up.

Positive and negative affect. Positive affect and negative affect were assessed with the Italian version (Terracciano, McCrae, & Costa, 2003) of the PANAS (Watson et al., 1988). The PANAS has 20 items that measure positive and negative emotional engagement and has been widely used in EW studies of adolescents (e.g., Horn et al., 2010; Soliday, Garofalo, & Rogers, 2004; Stice, Shaw, Burton, & Wade, 2006). Participants were asked on a 5-point Likert-type scale how they felt usually "in the past few weeks" (1 = *very slightly/not at all*, 5 = *extremely*) in terms of 10 positive adjectives, for example, *determined*, *active*, *interested*, and 10 negative adjectives, for example, *afraid*, *upset*, *nervous*. Item scores were summed within each scale, with higher values indicating higher levels of positive or negative affect. Internal consistency reliabilities at T1 were $\alpha = .68$ for positive affect and .81 for negative affect. The 2-month test–retest reliability was $r = .63$, $p < .001$ for positive affect and $r = .65$, $p < .001$ for negative affect.

Social involvement. Social involvement was measured with the DPAL (Wissink et al., 2009). The DPAL is a six-item questionnaire answered on a 6-point Likert-type scale (1 = *never*, 6 = *every day*) that measures the frequency of pleasant activities shared with friends (e.g., "How often do you see your friends outside school?", "How often do you play a sport with friends?"). Item scores were summed with higher scores indicating higher involvement with peers. Internal consistency reliability at T1 was $\alpha = .70$, and the T1–T3 test–retest reliability was $r = .68$, $p < .001$.

Peer problems. Peer problems at study entry (T1) were assessed with the Italian child version (Riso et al., 2010) of the PP subscale of the SDQ (Goodman et al., 1998). The PP subscale is a five-item questionnaire using a 3-point Likert-type response format (0 = *not true*, 1 = *somewhat true*, and 2 = *certainly true*). Two items are positively worded (e.g., "I have one good friend or more") and three are negatively worded (e.g., "Other children or young people pick on me or bully me"). Responses to the positively worded items were reversed so that higher scores indicate more peer problems. Internal consistency reliability at T1 was $\alpha = .60$.

Manipulation Check of Essay Content

To check whether the two sets of writings (CEW vs. EW) differed in ways that reflected the writing instructions, we compared the proportions of words in written essays reflecting emotions (e.g., sad, happy) and cognitive processes (e.g., know, think) using the Linguistic Inquiry and Word Count program (LIWC; Pennebaker, Booth, & Francis, 2006). Consistent with Nazarian and Smyth (2013), we expected a greater use of cognitive words and fewer emotional words in CEW compared with EW.

Data Analysis Strategy

Baseline differences between the three conditions on demographic variables, outcome measures, and peer problems were examined using chi-squared analyses for categorical variables and univariate analyses of variance (ANOVAs) for continuous variables.

The effects of writing condition on the outcome variables were examined with a series of multivariate analyses of covariance (MANCOVAs). The independent variable was condition (EW, CEW, control) and the dependent variables were the scores of each outcome variable at short-term (T2) and long-term (T3) follow-up. Baseline scores of the outcome variables (T1) were included as covariates in all analyses. When the Pillai's[2] trace revealed significant effects of condition, separate univariate ANOVAs for short- and long-term scores were computed as a post hoc examination. However, because univariate ANOVAs may not detect significant relationships between the

[2]Pillai–Bartlett trace (V) is a test statistic in MANOVA denoting the sum of the proportion of explained variance on the discriminant functions: "As such, it is similar to SSM/SST, which is known as R^2" (Field, 2009, p. 602).

dependent variables (Field, 2009), multivariate statistics were followed up with discriminant analyses.

Hierarchical multiple regression analysis was used to examine the moderator effects of baseline peer problems on the outcomes by entering the predictors (CEW, EW, control) and moderator variable (baseline peer problems) on Step 1, followed by the product terms (conditions × peer problems) on Step 2 (Frazier, Tix, & Barron, 2004).

RESULTS

Attrition Rate

In total, 119 students completed the questionnaire at baseline (T1). Nearly all (115 participants, or 97%) completed both the baseline (T1) and follow-up (T2 and T3) questionnaires. The four participants who did not complete a questionnaire at Time 2 completed the writing task, but did not complete some of the follow-up measures due to their absence from school, and were almost equally allocated between conditions (EW: $n = 1$; CEW: $n = 2$; control: $n = 1$). Of the 78 participants assigned to the writing conditions (vs. the 41 assigned to the control nonwriting condition), 59 completed the four writing sessions, 18 (EW: $n = 8$; CEW: $n = 10$) completed three writing sessions, and one single student assigned to the CEW condition completed only two writing sessions. Primarily, following a conservative intent-to-treat approach (Hollis & Campbell, 1999), all cases were included in the analyses.

Preliminary Analyses

Table 1 reports means and standard deviations for all variables by time (T1, T2, T3) and condition (EW, CEW, control). There were no significant differences among conditions in terms of gender [$\chi^2(2) = 0.77$, $p = .68$], baseline peer problems [$\chi^2(2) = 3.99$, $p = .14$], baseline scores of positive affect [$F(2,105) = 0.30$, $p = .74$] negative affect [$F(2,105) = 0.67$, $p = .52$], or contact with peers [$F(2,105) = 2.40$, $p = .10$]. Participant age differed significantly between conditions [$F(2,105) = 24.74$, $p < .001$]: Participants in the control condition ($M = 12.17$, $SD = 0.50$) were younger ($p < .01$) than those in the EW ($M = 12.82$, $SD = 0.64$) or CEW conditions ($M = 13.00$, $SD = 0.49$). However, all the participants were early adolescents, and the small age difference between conditions—a few months—is unlikely to reflect the differences in psychosocial and emotional development that would affect the outcome of the intervention. No age difference between EW and CEW participants was found ($p = .50$).

TABLE 1
Means and Standard Deviations for Outcome and Moderator Variables by Time and Condition

	Control		*EW*		*CEW*	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*
Positive affect (PANAS-PA)						
T1	32.78	5.17	32.91	5.22	33.68	5.11
T2	32.71	5.92	31.67	5.48	33.70	5.06
T3	33.31	6.23	27.84	5.47	32.74	5.99
Negative affect (PANAS-NA)						
T1	20.29	6.21	21.67	6.53	22.00	7.77
T2	20.97	6.48	20.97	6.10	21.64	7.55
T3	20.28	5.48	24.00	8.29	22.91	8.88
Social involvement (DPAL)						
T1	3.75	0.89	3.34	0.91	3.72	0.78
T2	3.90	0.88	3.50	0.90	3.82	0.86
T3	3.77	0.93	3.63	1.01	4.27	0.68
Peer problems (PP)						
T1[a]	1.83	0.86	2.12	0.96	2.35	1.25

Note. EW, expressive writing; CEW, cognitively oriented expressive writing; PANAS, Positive and Negative Affect Scales; DPAL, Degree of Peer Activity List.

T1 = before the first writing session (on the same day); T2 = 2 weeks after the last writing session; T3 = 2 months after the last writing session.

[a]Peer problems were assessed only at T1 as a putative moderator.

Adherence to Writing Instructions

Content analysis of the written essays showed that adherence to the writing instructions was good. The analysis was conducted by two independent raters for the most frequently named themes in the writing. Cohen's kappa (Cohen, 1960) was .86, indicating good agreement between coders. Disagreements between raters were discussed and resolved with the study authors.

Sixty-seven of the 78 participants assigned to the EW and CEW conditions wrote about a problem experienced with peers. Typical examples were arguing with friends ($n = 40$), being bullied or teased ($n = 12$), dealing with a difficult romantic relationship ($n = 8$), being rejected or excluded by peer group ($n = 5$), or physically fighting with a peer ($n = 2$). Six participants (8%) wrote about emotional problems related to academic achievement, conflicts with parents, or their own identity. Five essays (6%) were judged not to have complied

with the writing instructions. In these essays, although some general references to negative issues were reported, participants wrote mainly about neutral topics such as hobbies or sport. Because the primary aim of this study was to examine the effects of writing about peer problems and a critical outcome measure was social involvement with peers, the noncompliant cases (i.e., writing about emotional yet not peer-related problems or writing about neutral topics) were excluded from the final analyses.

Text analyses (LIWC) indicated that the CEW writings compared to the EW writings had more cognitive words (CEW $M = 7.63$, $SD = 1.99$ vs. EW $M = 2.32$, $SD = 0.96$; $t(53.86) = 2.54$, $p < .001$) and fewer emotional words (CEW $M = 2.32$, $SD = 0.96$ vs. EW $M = 3.27$, $SD = 1.11$; $t(65) = 3.73$, $p < .001$), as predicted.

Effect of Conditions

MANCOVAs analyzing the effects of condition (EW, CEW, control) on each outcome variable (contact with peers, positive affect, negative affect) at short-term (T2) and long-term (T3) follow-up were performed using baseline scores of the outcome variables as covariates (T1). These analyses failed to find a significant effect of condition for negative affect [$V = 0.06$, $F(4,196) = 1.66$, $p = .16$, $\eta_p^2 = 0.03$], but found significant effects of condition for positive affect [$V = 0.22$, $F(4,196) = 6.14$, $p < .001$, $\eta_p^2 = 0.11$] and contact with peers [$V = 0.17$, $F(4,196) = 4.64$, $p < .01$, $\eta_p^2 = 0.09$]. Separate univariate ANOVAs revealed a unique significant effect on long-term scores for both positive affect [$F(2,102) = 8.59$, $p < .001$, $\eta_p^2 = 0.14$] and contact with peers [$F(2,102) = 4.80$, $p < .05$, $\eta_p^2 = 0.09$]. When comparing long-term scores adjusted for baseline differences, EW participants had lower positive affect ($M = 28.00$, $SD = 0.81$) than either CEW ($M = 32.30$, $SD = 0.80$) (Cohen's $d = -5.34$) or control participants ($M = 33.52$, $SD = 0.75$) (Cohen's $d = -7.09$). CEW participants reported higher contact with peers ($M = 4.20$, $SD = 0.11$) than EW ($M = 3.85$, $SD = 0.11$) (Cohen's $d = 3.18$) and control participants ($M = 3.66$, $SD = 0.10$) (Cohen's $d = 5.15$).

Given these significant results, discriminant analyses were performed as post hoc examination of MANCOVAs for positive affect and contact with peers at short-term (T2) and long-term (T3) follow-up.

Positive affect. Discriminant analysis revealed two distinct vectors for the outcome variable of positive affect. The first vector explained 94.7% of the variance (canonical $R^2 = .41$), whereas the second explained only 5.3% (canonical $R^2 = .11$). In combination, these discriminant vectors yielded a significant difference between conditions [$\Lambda = 0.82$, $\chi^2(4) = 19.60$, $p < .01$], yet removing the first vector yielded a nonsignificant difference [$\Lambda = 0.99$, $\chi^2(1) = 1.12$, $p = .29$]. Thus, only the first vector was examined.

Correlations between short- and long-term outcome scores and the discriminant vector revealed that the vector was more highly related to the long-term scores ($r = .89$) than to the short-term scores ($r = .31$), indicating a specific effect on positive affect 2 months postintervention. Further, mean loadings on the vectors for each condition revealed that the first vector differentiated the EW condition (=−.65) from the control (=.38) and CEW conditions (=.21). Combining this information with the mean short- and long-term scores of positive affect adjusted for baseline differences in each condition (Figure 1), students in the EW condition reported significantly lower positive affect 2 months after writing than the other two conditions.

Contact with peers (social involvement). Discriminant analyses revealed two distinct vectors for the outcome variable of contact with peers. The first vector explained 83.3% of the variance (canonical $R^2 = .41$), whereas the second explained 16.7% (canonical $R^2 = .20$). In combination, these discriminant vectors yielded a significant difference between the conditions [$\Lambda = 0.80$, $\chi^2(4) = 22.16$, $p < .001$], but removing the first vector yielded a nonsignificant difference [$\Lambda = 0.97$, $\chi^2(1) = 3.94$, $p = .05$]. Thus, only the first vector was examined.

Correlations between short- and long-term scores and the discriminant vectors revealed that the vector was negatively related to short-term scores ($r = -.01$), but positively related to long-

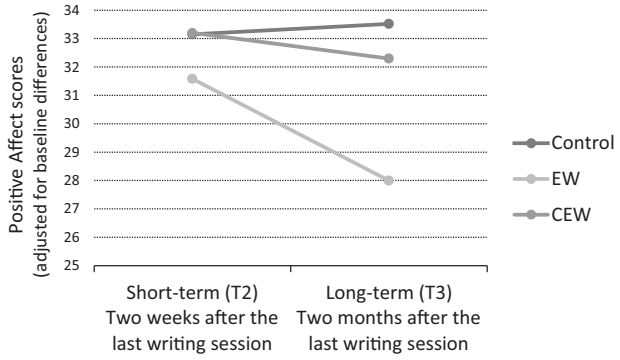

FIGURE 1 Short- and long-term scores of positive affect by condition (from T2 to T3, adjusted for T1 scores as covariate).

term scores (r = .61), indicating an opposite effect on contact with peers at 2 weeks and 2 months postwriting. Further, mean loadings on the vectors for each condition revealed that the first vector differentiated the CEW condition (=.61) and EW condition (=−.11) from the control condition (=−.45). Combining this information with the mean short- and long-term adjusted scores of contact with peers by condition (Figure 2), students in the control condition had greater peer contact 2 weeks following the intervention compared with the other conditions; in contrast, students in the CEW and EW conditions had greater peer contact at the 2-month follow-up compared with students in the control condition.

Moderator Effects of Peer Problems

Preintervention peer problems moderator effects were examined by regressing short- and long-term scores of peer contact, positive and negative affect on conditions, peer problems at baseline, and their interaction. To compare the CEW condition with EW and control conditions, two dummy variables ($D1$ and $D2$) were created contrasting, respectively, the mean of CEW (as reference group) with EW ($D1$) and control groups ($D2$). Because the peer problems variable was skewed (skewness = 1.2), it was transformed into a dichotomous variable by dividing participants into two groups based on the mean (2.00). One group (n = 84) reflected very few peer problems (range 0–1), whereas the other group (n = 24) had medium scores (range 2–5). No participants reported extreme values (range 6–10) of peer problems. Given the unequal sample size of the resulting two groups (i.e., 84 vs. 24), the dichotomized peer problems variable was included as moderator using weighted effects coding (West, Aiken, & Krull, 1996). Two product terms that represented the interactions between a predictor (respectively, $D1$ and $D2$) and the moderator (*peer problems*) were created by multiplying each dummy variable with the moderator variable. Scores at short-term (T2–T1) and long-term (T3–T1) follow-up were used as the dependent variable. Hierarchical multiple regression equations were conducted by entering the predictors and moderator variable on Step 1, followed by the product terms on Step 2. If a product term was significant, the test of the simple slopes representing the effects of predictor on the dependent variable as a function of baseline peer problems was performed with two additional regression analyses. These analyses were similar to the previous ones, with the peer problems variable recoded into a dummy variable, testing separately the effects of the predictor for the low vs. medium peer problems groups.

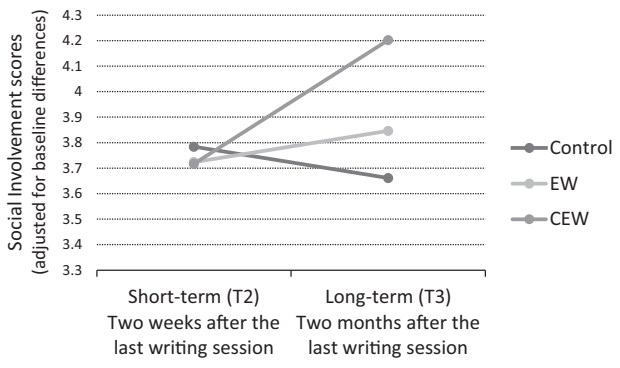

FIGURE 2 Short- and long-term scores of social involvement (i.e., contact with peers) by condition (from T2 to T3, adjusted for T1 scores as covariate).

Only the equation for long-term positive affect yielded significant results, as shown in Table 2. Including both interaction terms in the model produced a small yet significant increase in the explained variance (ΔR^2 = .13, $p < .001$). Separate regression analyses tested the simple slopes for the low and medium peer problems groups. For students reporting *few* peer problems prior to writing, participants in the CEW condition had lower long-term positive affect scores than control condition participants (B = 2.95, SE = 1.46, $p < .05$). For students with *medium* peer problems, the opposite occurred: Participants in the CEW condition had higher long-term positive affect scores compared with both EW (B = −13.56, SE = 2.61, $p < .001$) and control condition participants (B = −8.47, SE = 3.09, $p < .01$).

Summary of Results

Among the six effects tested (short- and long-term positive affect, negative affect, and contact with peers), we found only two significant main effects of condition, that is, positive affect and contact with peers 2 months after the writing intervention. No significant difference between conditions 2 weeks after writing was found. However, discriminant analysis revealed a marginal trend such that control participants had the highest contact with peers scores 2 weeks after writing, which decreased by the 2-month follow-up. CEW participants had higher contact with peers 2 months postwriting, compared with the EW and control participants. Contrary to our predictions, EW participants showed a significant decrease in positive affect at the 2-month follow-up compared with

TABLE 2
Hierarchical Multiple Regression Analyses on Long-Term Scores of Positive Affect

Step and variable		*B*	*SE*	*B*	*95% CI*		ΔR^2
		Weighted effects coding (Low PP = 1, Medium PP = −3.41)					
1	Constant	32.45	0.95		30.56	34.34	
	*D*1 (CEW vs. EW)	−4.30	1.37	−.31**	−7.03	−1.58	
	*D*2 (CEW vs. Control)	0.41	1.33	.03	−2.22	3.05	
	Peer problems (PP)	−1.49	0.48	−.44**	−2.44	−0.54	
2	*D*1 × Peer problems (PP)	2.64	0.68	.47***	1.29	4.00	.13***
	*D*2 × Peer problems (PP)	2.54	0.76	.38**	1.03	4.04	
		Dummy coding (Low PP = 0, Medium PP = 1)					
1	Constant	30.96	1.11		28.76	33.16	
	*D*1 (CEW vs. EW)	−1.66	1.60	−.12	−4.83	1.52	
	*D*2 (CEW vs. Control)	2.95	1.46	.23*	0.06	5.85	
	Peer problems (PP)	6.71	2.15	.44**	2.44	10.98	
2	*D*1 × Peer problems (PP)	−11.90	3.06	−.53***	−17.98	−5.82	.13***
	*D*2 × Peer problems (PP)	−11.42	3.42	−.38**	−18.20	−4.64	
		Dummy coding (Low PP = 1, Medium PP = 0)					
1	Constant	37.67	1.85		34.00	41.33	
	*D*1 (CEW vs. EW)	−13.56	2.61	−.99***	−18.74	−8.38	
	*D*2 (CEW vs. Control)	−8.47	3.09	−.65**	−14.60	−2.34	
	Peer problems (PP)	−6.71	2.15	−.44**	−10.98	−2.44	
2	*D*1 × Peer problems (PP)	11.90	3.06	.66**	5.82	17.98	.13***
	*D*2 × Peer problems (PP)	11.42	3.42	.84**	4.64	18.20	

Note. EW, expressive writing; CEW, cognitively oriented expressive writing; PANAS, Positive and Negative Affect Scales; DPAL, Degree of Peer Activity List.
*$p < .05$; **$p < .01$; ***$p < .001$.

participants in the other two conditions (CEW and control).

The effect of the CEW condition on positive affect was moderated by baseline levels of peer problems. For those with low peer problems at baseline, CEW participants showed smaller long-term scores compared with the control participants. In contrast, for those with medium peer problems, CEW participants reported higher long-term scores compared with both the EW and the control participants. No other moderating effects of peer problems were found.

DISCUSSION

In the current research, early adolescents wrote about problems experienced with their peers using one of two EW techniques—either a CEW or traditional EW. The former was designed to enhance cognitive restructuring, causal-explanatory, and meaning making of the situation, whereas the latter was designed to increase emotional disclosure. Participants in the traditional EW condition showed a decline in positive affect over time, whereas participants in CEW and control conditions showed no change. It is possible that the immediate decrease in positive affect for the EW condition was due to a negative memory activation (2-week follow-up), but this cannot explain the continued decrease at the 2-month follow-up nor the fact that a parallel increase in negative affect was not found. Thus, it is likely that the traditional EW instructions may not arouse negative emotions but do lower participants' engagement and positive activation (Jacques & Mash, 2004). This explanation is supported by the fact that early and, to some extent, middle adolescents are less efficient than late adolescents in regulating their emotional reactions through meaning-making processes (McLean et al., 2010). Thus, a lower positive activation may represent a pattern of greater cognitive effort over time (Kross et al., 2011).

Both EW and CEW enhanced early adolescent adjustment in peer relationships, as both were associated with increased peer contacts at T3 compared to controls. It is interesting to note that control participants who did not write at all reported greater peer contact 2 weeks after the intervention compared to EW and CEW participants, but this effect deteriorated by the 2-month follow-up. Thus, our study provides evidence that EW of any type may have long-term positive effects. Throughout the rest of the discussion, we will describe the mechanisms underlying this plausible conclusion.

Experiencing Peer Stress

We assumed that early adolescents with more peer problems would benefit more from CEW relative to those with fewer peer problems. Regression analysis revealed that baseline peer problems moderated the effect of CEW on positive affect. These results are consistent with EW research that revealed greater improvement for participants at risk for contextual stressors in general (Frattaroli, 2006) and for adolescent victimization and traumatization specifically (Giannotta et al., 2009; Parker, Stewart, & Gantt, 2006).

Our data suggest a slight advantage for CEW compared to EW for early adolescents dealing with peer problems. CEW did not increase positive affect or decrease negative affect, as predicted, but neither was it associated with a decrease in positive affect as those in the traditional EW condition experienced. Moreover, CEW did lead to better emotional adjustment 2 months later for participants with medium peer problems at baseline. Therefore, structuring the writing instruction in a cognitive manner could be thought as being preferable to the simple emotional disclosure format and might be preferable with early adolescents.

Participants who had few preintervention peer problem levels in the CEW condition had lower positive affect at the 2-month follow-up. Combining this fact with the finding that those in traditional EW had lower positive affect at this longer term follow-up, we can surmise that retelling a negative peer experience while focusing on the emotional aspects of the experience or without having specific emotional issues to disclose may interfere with the normal psychological distancing processes often used by adolescents (Kross et al., 2011; Nelson, Bein, Huemer, Ryst, & Steiner, 2009). In other words, among those adolescents without significant peer problems, emotional disclosure (even in a cognitive format) may create distress rather than resolve it. Without accompanying positive affect, adolescents may not use the coping strategies of positive activation, acceptance, or even distractions such as constructive denial, or general cognitive reframing including wishful thinking that might increase well-being or prevent emotional declines (Jaser, Champion, Dharamsi, Riesing, & Compas, 2011; Soliday et al., 2004). Conversely, the combination of existing peer problems and a cognitively oriented intervention may potentially activate cognitive coping strategies. Thus, writing without "rules" about emotional concerns with peers or even writing cognitively when there are no existing concerns may invoke distress and be potentially detrimental (Lyubomirsky, Sousa, & Dickerhoof, 2006; Travagin et al., 2015). Lyubomirsky et al. (2006) found that the analytic nature of EW may be counterproductive in maintaining positive affect for those individuals dealing with satisfying experiences. The authors suggested that when the memories to be recalled are generally positive, overanalyzing them to determine their causes and meaning may be detrimental. This could be particularly true for highly structured writing tasks such as CEW. However, as data on coping strategies were not collected, this will need to be examined in future research.

The current research indicates that EW slightly improves social involvement in early adolescents and that treatment effects may be stronger if one targets age-specific modes of writing as well as specific stressor types. Further, for young adolescents experiencing heightened peer-related stress, a retelling process may be helpful, but this process will not be elicited with vague writing instructions. At the same time, for early adolescents with satisfying peer relationships, the writing task might raise issues that were not previously salient and thus undermine a process of growth and adjustment. Hence, written disclosure should not be conceived as a broad-spectrum treatment modality. It may be particularly useful for adolescents dealing with specific types of stressors, but the form of the writing instructions may be critical to its success.

Searching for Written Disclosure Mechanisms

We come finally to the basic mechanisms of EW paradigm mentioned in the Introduction. *Exposure habituation* was not directly tested in the present study; however, we can conclude that exposure itself and the process of "letting oneself go" is not universally effective, especially if we consider that adolescents come to a writing intervention with different levels of risk. With young populations, it seems that exposure habituation may not work as well as it does with adult populations (e.g., Frattaroli, 2006; Pennebaker, 2004).

The mechanisms of *emotional disinhibition* and *cognitive enhancement* are not independent. In fact, a writing task that favors cognitive enhancement, which is primary in the CEW condition, has specific effects on emotional disinhibition, for example, positive affect, as well as on social adjustment, for example, peer interaction. Therefore, we cannot conclude that one of these mechanisms explains our results. What we *can* say is that with early

adolescents, what counts is that the type of writing instructions matches the areas in which the adolescent still needs guidance, that is, intensive self-immersion in a narrative that includes stressful memories, causal explanations, metacognitive awareness, and future orientation mastery.

We hypothesized that the CEW would provide a frame of reference as well as curb possible emotionally overwhelming effects of the EW task that can be found with simple disclosure (EW). We know, at least from a theoretical point of view, that CEW facilitates functional self-distancing processes (Ayduk & Kross, 2010; Dundas, 2000; Kross & Ayduk, 2011; Kross et al., 2011). However, this hypothesis was beyond the scope of the current study. Further research should test whether self-distancing is another essential mechanism for continued improvement when disclosing in a written format, at least for adolescents.

Limitations

The most significant limitation of the current research is that we did not include a neutral writing condition. Therefore, we do not know whether writing itself was the cause of the differences between EW and simply writing. One of the potential risks of a neutral writing condition, however, is that it might elicit emotional issues with adolescents without the necessary framework of EW and/or CEW to process them (Soliday et al., 2004).

Another limitation arises from the measures we used. The peer problems and positive affect measures had acceptable internal consistency ($0.6 \geq \alpha \geq 0.7$), but the measure of peer problems was severely skewed and was converted into a dichotomous variable. Moreover, the effects of writing were assessed only for a relatively short time—the longest follow-up being 2 months after the last writing session. It is possible that the effects of writing would have emerged over a longer period, as insights gained from writing may have needed time to be put into practice or, alternately, evaporated without booster writing sessions. Finally, as we focused on the effects of writing on social and emotional adjustment, other potential behavioral and general health outcomes remain unexplored.

Despite these limitations, this study implemented a novel EW task in a real-world setting with early adolescents and showed positive effects on a real-life variable such as contacts with peers that related to the emotional and social adjustment in early adolescence. The results of the current study are indeed promising and argue for future research.

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