

Girls' and Boys' Disclosure about Problems as a Predictor of Changes in Depressive Symptoms Over Time

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Abstract Gender differences consistently emerge in adolescents' friendships, with girls disclosing to friends about troubles and concerns more than boys. Although theories regarding possible emotional benefits of catharsis, as well as everyday assumptions, suggest that talking about problems makes people feel better, research regarding the impact of disclosure about problems on depressive symptoms has not been conclusive. In the current study, 79 early adolescent high school students residing in the Southeastern United States (73% European American) were observed talking about problems with a friend. Of primary interest was whether disclosure to friends predicted changes in self-reported depression over 6 months for girls and boys. Although girls disclosed to friends about problems (especially interpersonal problems) more than did boys, disclosure did not buffer girls from the development of depressive symptoms over time. In contrast, boys' disclosure predicted their experiencing fewer depressive symptoms 6 months later. Results suggest that talking to friends may not be an especially effective method of coping with problems for girls.

Keywords Disclosure · Gender · Depression · Friendship · Adolescence

Introduction

The current study contributes to the literature by testing gender differences in the impact of disclosure about problems to friends on changes in depressive symptoms over time among early adolescent high school students in the Southeastern United States. Given that the current study was conducted with US adolescents, our review of the literature and development of hypotheses draw primarily on other studies conducted with US samples (and any studies reviewed based on non-US samples are noted). In this cultural context, past research clearly indicates that friendships are important in the lives of both girls and boys (Bukowski et al. 1996), but that there also are important gender differences in friendships (e.g., Buhrmester and Furman 1987; see Rose and Rudolph 2006).

One of the strongest and most consistent gender differences in friendships involves girls' greater tendency to disclose personal thoughts and feelings (see Rose and Rudolph 2006). Disclosure may have particularly important implications for youths' adjustment when it focuses on problems, as talking about problems with close others is a common way youth cope with troubles (Buhrmester and Prager 1995). As such, the current study focuses on how disclosure about problems to friends influences the development of depressive symptoms among girls and boys over 6 months using an observational and prospective design. The study also aims to replicate previous research regarding mean-level differences between girls and boys in regards to disclosure and depressive symptoms.

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Disclosure and Depressive Symptoms Among Girls and Boys

Gender segregation emerges very early in childhood as children begin to interact with peers of their same gender more than other peers (e.g., Moller and Serbin 1996, Canadian sample; see Mehta and Strough 2009, for a review). Importantly, in these groups of girls and boys, differences in interactional styles develop (see Rose and Smith 2009). Almost certainly there are a number of causal factors underlying the development of girls' and boys' interactional styles with peers. Some have suggested that biological factors are important (see Golombok and Hines 2002), and clearly socialization plays an important role. Parents socialize gender-typed behavior in their children (see Ruble et al. 2006), and, at least in young children, peer socialization also is present as peers respond more positively to gender-typed behavior than to gender-atypical behavior (e.g., Martin and Fabes 2001). Little attention has been paid to peer socialization of gender-typed behavior later in development, but some research suggests that peers may reinforce gender-typed behavior in adolescence as well (Hibbard and Buhrmester 1998). Not surprisingly, then, youth report feeling pressure to engage in gender-typed behaviors, and these pressures are felt especially strongly by boys (Carver et al. 2003; Egan and Perry 2001).

Girls and boys also likely experience differential socialization in regards to disclosure in particular. Parents of young children tend to discuss emotions with daughters more than sons, including most negative emotions (e.g., Adams et al. 1995; Fivush et al. 2000). Given that parents' communication style with children has been found to influence and resemble their children's communication style with peers (Kahen et al. 1994), perhaps it not surprising that by middle childhood girls disclose to friends more than do boys, including about problems and concerns (e.g., Parker and Asher 1993; Rose 2002). In fact, girls' greater tendency to self-disclose is one of the most robust gender differences in children's friendships, and the gender difference becomes even stronger at adolescence (see Rose and Rudolph 2006). Little is known about how this gender difference is reinforced among peers. However, it has been suggested that boys may feel considerable pressure from peers to be stoic and avoid emotional expression and vulnerability (Pollack 1998). Given the high levels of disclosure among girls, it also seems plausible that disclosure is expected from girls by their friends.

In the current study, gender differences in disclosure are examined among early adolescents. Most previous research indicating a gender difference in self-disclosure has used self-report measures. However, a strength of the current

study is that an observational design was used. Youth were observed discussing a personal problem with a friend, and girls were predicted to disclose to friends more than boys in this context (Hypothesis 1).

In addition, the current study considers the type of problems that girls and boys discuss with friends. At least in Western cultures, females tend to be more interpersonally oriented than males (e.g., more interdependent, more focused on relationships; see Cross and Madson 1997; Rose and Rudolph 2006), and girls are more likely than boys to be concerned about interpersonal problems (Blatt et al. 1993; Kuperminc et al. 1997). As such, in the current study, girls were expected to be more likely than boys to talk with friends about interpersonal problems (e.g., romantic problems, problems with parents), whereas boys were expected to be more likely than girls to talk about non-interpersonal problems (e.g., academic problems, sports problems; Hypothesis 2).

Also, at each of the two time points of the study (6 months apart), youth completed a self-report measure regarding their depressive symptoms. Although girls typically do not report greater depressive symptoms than boys in childhood, this gender difference increases with age such that girls tend to report greater depression than boys by mid- to later-adolescence (Twenge and Nolen-Hoeksema 2002). Given that youth in the current study were early- to mid-adolescents (ages 14–15 years old), girls were expected to report more depressive symptoms than boys (Hypothesis 3), but whether the difference would reach significance was not clear.

Disclosure in Friendship as a Predictor of Changes in Depressive Symptoms over Time Among Girls and Boys

Everyday assumptions suggest that people feel better if they talk about problems (i.e., “get them off their chest”) or, stated differently, that disclosure about problems positively impacts adjustment. These assumptions fit with theories suggesting that expressing negative feelings is cathartic and has emotional benefits (Derlega and Grzelak 1979; Mahoney 1995). Also, among youth, disclosure is related to feelings of closeness and connection with friends (e.g., Camarena et al. 1990), which may be protective. For adolescents, considering the link between disclosure with friends about problems and emotional well-being is important because friends are central sources of support at this age (see Rubin et al. 2006).

However, surprisingly few studies have examined the impact of disclosure on depression, especially in adolescence, and the results are not conclusive. The studies generally used survey measures and examined concurrent relations. They also tended to focus on adults. In one study

of adults (Langan-Fox et al. 2009) using a self-report measure of disclosure that did not specify the topic of disclosure or the target to whom disclosure was directed, disclosure and depressive symptoms were unrelated. In two other studies of adults that focused on disclosure about negative emotions or events but also did not assess the target of the disclosure (Kahn and Garrison 2009; Rude and McCarthy 2003), disclosure was related to lower depression. However, in a study of adults assessing self-reported disclosure about negative emotions to friends (Cuming and Rapee 2010, Australian sample), disclosure was not related to depression.

Moreover, very little is known about the association between disclosure about problems and depressive symptoms in the friendships of youth. One study of disclosure (Oldenburg and Kerns 1997) did indicate that fifth- and eighth-grade youth who reported greater disclosure in friendships reported somewhat lower depressive symptoms, but the relations were small and not significant in all of the grade/gender groups (the relation was significant only for fifth-grade girls, but the magnitude of the relations was nearly identical across all grade/gender groups). Notably, the disclosure measure did not focus specifically on problems or negative emotions (for example, the measure included items about sharing secrets).

Clearly, results of past studies are mixed, potentially due to methodological differences between studies and methodological weaknesses. As compared to past studies, the current study provides methodological extensions that should allow for a stronger test of whether disclosure to friends about problems impacts the development of depressive symptoms for girls and boys. First, the current study uses an observational assessment of girls' and boys' disclosure about problems. Given that disclosure is more common among girls, it is possible that girls and boys perceive and evaluate similar levels of disclosure differently when responding to self-reports. Observation also may be especially important when considering associations with depressive symptoms given possible biases in how depressed youth perceive and report on interpersonal experiences (De Los Reyes and Prinstein 2004; Rudolph and Clark 2001). Moreover, the current study uses a prospective design. The studies described previously examined concurrent relations, making it impossible to know whether disclosure predicts changes in depressive symptoms, depressive symptoms predict changes in disclosure, or neither variable predicts change in the other (e.g., they are associated due to relations with a third variable). In contrast, the current design tests whether disclosure does in fact predict changes in depressive symptoms over time.

As such, the primary purpose of the current study was to test whether the impact of disclosure about problems to

friends on the development of depressive symptoms over 6 months differed for girls and boys. In prior self-report studies of concurrent associations, the relations were similar across genders (Cuming and Rapee 2010; Kahn and Garrison 2009; Oldenburg and Kerns 1997) or gender differences in the relations were not tested (Langan-Fox et al. 2009; Rude and McCarthy 2003). However, given the observational, prospective design, the current study provides a particularly strong test of whether disclosure about problems to friends impacts the development of depressive symptoms differently for girls and boys.

In fact, as described in detail in the following paragraphs, the effect of disclosure on changes in depressive symptoms over time was expected to differ for girls and boys (Hypothesis 4). Specifically, disclosure was expected to protect boys from the development of depressive symptoms but to be unrelated to changes in depressive symptoms for girls or even possibly to increase girls' risk for depression. The basis for this proposal is that girls' and boys' disclosure may be associated with different behaviors, cognitions, and/or meanings that have different implications for depressive symptoms.

In regards to behaviors, girls may be more likely than boys to fall into maladaptive conversational patterns when they disclose. For example, girls are more likely than boys to co-ruminate or engage in excessive, speculative, negatively-focused conversations about problems, and doing so confers risk for internalizing symptoms (e.g., Rose et al. 2007). Although the current study assesses normative disclosure about problems, even normative disclosure may increase the chances that girls will fall into co-ruminative conversations. In contrast, boys' disclosure about problems may be less repetitive and more focused on finding solutions, which may be more protective against depressive symptoms.

Also in regards to behavior, consider again the prediction that girls will be more likely than boys to discuss interpersonal problems. Because interpersonal problems are often difficult to resolve, discussing them may not be particularly helpful. Moreover, given that interpersonal problems also are often ambiguous, discussing them may bring to light even more aspects of the problems. As such, conversations about interpersonal problems may exacerbate distress about problems and fail to protect against the development of depressive symptoms. In contrast, disclosing about non-interpersonal problems, for which straightforward solutions might be identified, may be more helpful and protective, leading to fewer depressive symptoms for boys.

In addition, disclosure about problems may elicit different cognitions in girls and boys that have different implications for depressive symptoms. Research suggests

that girls tend to take greater personal responsibility for problems than do boys (e.g., Pomerantz and Ruble 1998). If this is the case, then girls' distress may be heightened when disclosing about problems makes them especially salient, which may increase risk for depressive symptoms. In contrast, if boys are less likely to be subjected to problematic cognitions, they may be better able to reap the benefits of disclosure.

Third, disclosure may carry a different meaning for girls than boys. For girls, disclosure may be so common and expected in friendships that, in some cases, it becomes habitual or even obligatory rather than representing a true desire to express thoughts and feelings. In contrast, for boys, disclosure more likely represents an active choice. Youth are likely aware that disclosure in friendships is more common among girls than boys, and so, when boys disclose, they are actively resisting the pull of traditional gender roles (see Brown and Gilligan 1992, for related ideas regarding girls and resistance). As such, it may be that the boys who disclose are those who find disclosure most beneficial (e.g., due to their temperament/personality, past positive experiences disclosing, the communication styles of their friends, or other reasons; see Way 2004, for a discussion of boys valuing disclosure). Moreover, it may be that boys only disclose when they have a particular problem about which they feel an especially strong urge to discuss with a friend. As such, disclosure may be especially protective for boys because, when they do choose to disclose, it is especially meaningful to them.

Notably, all of these possibilities converge on the idea that disclosure may be more protective for boys than girls. However, data were not available to test all of these potential explanations. Data were available, though, to test the possibility regarding problem types. As discussed, data were available to test the hypothesis that girls are more likely than boys to discuss interpersonal problems (Hypothesis 2). Therefore, it is possible to test the idea that disclosure about interpersonal problems is less protective than disclosure about non-interpersonal problems (Hypothesis 5), which may help to explain why disclosure about problems is less protective for girls than boys (Hypothesis 6).

In summary, the present study tests six major hypotheses. Consistent with past research (see Rose and Rudolph 2006), girls were expected to engage in greater disclosure about problems than boys (Hypothesis 1; to be tested with a *t* test). Girls also were expected to be more likely than boys to discuss interpersonal problems than non-interpersonal problems (Hypothesis 2; to be tested with a χ^2 test). In addition, girls were expected to report greater depressive symptoms than boys at both time points (Hypothesis 3; to be tested with a mixed-model ANOVA with gender and time as factors). Regarding the impact of disclosure on changes in depressive symptoms over 6 months, disclosure was

predicted to be more protective for boys than girls (Hypothesis 4; to be tested in a regression analysis predicting depressive symptoms with the inclusion of the interaction between gender and disclosure). In addition, talking about non-interpersonal problems was proposed to be more protective than talking about interpersonal problems (Hypothesis 5; to be tested in a regression analysis predicting depressive symptoms with the inclusion of the interaction between problem type and disclosure), which could explain why disclosure would be more protective for boys than girls (Hypothesis 6; to be tested by considering whether the predicted interaction between gender and disclosure becomes non-significant when the interaction between problem type and disclosure is controlled in the regression analysis predicting depressive symptoms).

Method

Participants

Participants were 79 youth (14–15 years old; 35 male, 44 female) who participated with a same-sex friend. Participants were recruited from community-based high schools in two towns in the Southeastern United States. One was a University town (population size around 50,000) and one was a small, more rural town (population size about 5,000) approximately 12 miles from the University town. Both towns were predominately middle class with residents of the University town being somewhat better educated. The sample included 58 European Americans (73.4%), nine African Americans (11.4%), three Asian Americans (3.8%), five Latinos (6.3%), and four mixed-ethnicity/other (5.1%).

Procedure

Target youth were recruited via from the ninth grade of two regular education high schools. Project staff visited physical education classes at the two schools, described the project to the students, and distributed consent forms for students to take home to their parents. Teachers collected the signed consent forms and returned them to project staff. A subset of youth whose parents provided consent for them to be contacted (and contact information), were chosen at random. These families were contacted on the telephone and the youth was invited to participate. If the youth chose to participate, they then nominated a same-sex best friend who they would like to participate with in the study who was within 2 years of their age and school grade and with whom they did not have a familial relationship. At that point, the target youth were asked to have the nominated friend contact project staff directly to a) verify that they were friends with the target adolescent and b) to provide

verbal assent to participate in the study. The friend's parent also provided written consent to participate before the study began. A total of 89% of target adolescents who attended the lab visit came with a friend who was in the same grade and 74% of dyads included two adolescents of the same ethnicity.

The target adolescent, his/her parent, and the nominated friend attended a lab session on the university campus. Upon arrival, target adolescents and friends separately completed several questionnaires, including about recent stressors/problems (see measures below). Then, target youth reviewed with a research assistant a list of recent stressors/problems they had generated on one of the surveys and were asked to select one problem to discuss with their friend.

Next, target adolescents and friends were seated together in a 12'×12' observation room and given several written discussion prompts, each of which was discussed for 5 min. One prompt asked target adolescents to "talk with your friend about this current problem" and included a brief phrase describing the problem that they selected during the questionnaire segment. Youths' interactions were videotaped and coded at a later time.

Target youth were contacted for a telephone interview 6 months after the lab visit. Of the 79 who participated at Time 1, 16 did not complete the Time 2 interview. Girls were more likely than boys to have missing Time 2 data, $\chi^2(1)=5.31$, $p<.05$. However, no significant differences between youth with and without Time 2 data were found for any other variables. Given that Little's test (Little 1988) also was non-significant, $\chi^2(61)=67.08$, $p=.28$, missing data were imputed with an expectation-maximization procedure that utilized all Time 1 observational and survey data. Results from analyses of only available data yielded a similar pattern of results, with associations being in the same direction and of similar magnitude.

Measures

Depressive Symptoms

At Times 1 and 2, participants responded to the Children's Depression Inventory (CDI; Kovacs 1992), a 27-item measure designed to assess depressive symptoms in children and adolescents. For each item, respondents select from one of three statements, scored 0 through 2, that best described their level of depressive symptoms in the previous 2 weeks. The CDI is a reliable and valid index of depressive symptoms (Saylor et al. 1984) and can be used with youth between the ages of 7 and 18 years (Kazdin 1990). Scores were the mean of the items. In the current sample, internal consistency was high at both Time 1, $\alpha=.77$, and Time 2, $\alpha=.82$.

Problem Generation Questionnaire and Problem Topic Coding

At Time 1, youth completed the Problem Generation Questionnaire (Rose et al. 2005). Youth were presented with the questionnaire that included the text "List three problems that you have." No a priori definition of a "problem" was given to youth so that they could respond according to their perceptions of what their problems were. After listing three problems, youth were asked to identify one problem that they would be comfortable talking about with their friend.

Observational Coding

Two trained coders separately coded each videotaped interaction using the Relationship Processes Coding System (Heilbron and Prinstein 2005) adapted from the original Conversation Topic Code (Poe et al. 1990) and the Autonomy and Relatedness Coding System (Allen et al. 1998). Specifically, the extent to which target adolescents disclosed about their problem was coded. Each minute of the 5-minute interaction was coded for the degree to which youth disclosed using a five-point scale (1, 1.5, 2, 2.5, and 3). For each 1-minute segment, higher disclosure scores reflected a higher level of expression of thoughts and feelings related to the problem, much elaboration regarding details of the problem, and few, if any, off-topic (i.e., non-problem-related) comments. The disclosure of a youth earning a score of 3 would include all of these elements. Youth whose conversations were characterized by somewhat lower levels of these elements and/or whose conversations were mixed in terms of these elements (e.g., much elaboration but somewhat less time spent on the problem) would score toward the midpoint of the scale. Youth earning scores of 1 engaged in minimal dialogue regarding the problem and typically had conversations characterized by superficial statements about the problem that lacked expression of thoughts, feelings, and details. Total disclosure scores were the sum of the five codes given for each of the 1-minute segments.

Before the interactions were coded independently, the coders participated in extensive training for approximately 3 months and reliability was confirmed. Interrater reliability was calculated based on both coders coding 30% of the interactions. The Cohen's kappa ($\kappa=.70$) was acceptable (Landis and Koch 1977).

Problem Type Coding

In addition, all problems that youth chose to discuss were coded as interpersonal (e.g., making friends in a new school; desiring a romantic partner) or non-interpersonal

(e.g., getting bad grades). A third category was used for problems that had both interpersonal and non-interpersonal implications (e.g., insecurity about body size; being with a friend caught shoplifting). All problems were coded independently into these three categories by two of the study authors and the agreement was 100%. Of the 79 problems that target youth discussed, 62 were classified as clearly interpersonal or not interpersonal and were included in analyses.

Results

Mean-Level Gender Differences in Disclosure and Depressive Symptoms

In this section, gender differences were tested for observed disclosure, the type of problem chosen for discussion, and depressive symptoms. Girls' and boys' observed disclosure scores are presented in Table 1. A *t* test was conducted to determine whether girls were observed to disclose more than boys (Hypothesis 1). In fact, greater disclosure was found among girls, $t(77)=2.83, p<.01$.

Next, a chi square analysis was conducted to test whether girls were more likely than boys to discuss interpersonal problems (Hypothesis 2). Of youth who chose a problem for discussion classified as interpersonal or not ($n=62$), girls were more likely to discuss interpersonal problems than were boys, $\chi^2(1)=14.20, p<.01$. Of the 34 girls, 29 (85.3%) discussed interpersonal problems. Of the 28 boys, 11 (39.3%) discussed interpersonal problems.

Finally, a 2 (Gender) \times 2 (Time Point) Mixed-Model ANOVA was conducted to test whether girls reported greater depressive symptoms (Hypothesis 3). Mean depressive symptoms scores for girls and boys are presented in Table 1. Of interest was whether the gender effect was significant and whether it was moderated by time. Consistent with hypotheses (Hypothesis 3), girls' scores were somewhat higher than boys' scores at both time points. The main effect for gender across time points was marginally significant, $F(1, 77)=3.72,$

$p=.06$, and was not moderated by a significant Gender \times Time Point interaction, $F(1, 77)=.04$.

Gender as a Moderator of the Effect of Disclosure on Change in Depressive Symptoms

A regression analysis then was conducted to test whether the effect of disclosure on changes in depressive symptoms over time differed for girls and boys (Hypothesis 4). Prior to conducting the analyses for this and all other regression models, multicollinearity was tested for each regression model. In all models, tolerance values fell within acceptable ranges (Pedhauzer 1997). For the first model, Time 2 depressive symptoms served as the dependent variable. Time 1 depressive symptoms were entered on the first step as a control variable. Disclosure (centered for the regression analyses) and gender were entered on the second step. The Disclosure \times Gender interaction was entered on the third step. The results of these analyses are summarized in Table 2. As expected, Time 1 depression predicted Time 2 depression. Neither the main effect of disclosure nor gender was significant. However, on the third step, the interaction between gender and disclosure was significant, $\beta=-.42, p<.05$. Simple slope analyses (Aiken and West 1991; Holmbeck 2002; see Fig. 1) indicated that the effect of disclosure for boys was significant, $\beta=-.24, p<.05$, such that greater disclosure at Time 1 predicted fewer depressive symptoms at Time 2. However, the effect of disclosure was not significant for girls, $\beta=.13, p=.24$.

Problem Type as a Moderator of the Effect of Disclosure on Depressive Symptoms

A second regression analysis then tested the hypothesis that the effect of disclosure on changes in depressive symptoms would be moderated by problem type (Hypothesis 5; see Table 2). Time 2 depressive symptoms served as the dependent variable. Time 1 depressive symptoms were entered on the first step. The main effects of disclosure and problem type were entered on the second step. The

Table 1 Descriptive statistics for observed disclosure and depression for whole sample and separately by gender

	Whole sample		Girls		Boys	
	<i>N</i>	<i>M</i> (SD)	<i>N</i>	<i>M</i> (SD)	<i>N</i>	<i>M</i> (SD)
Observed disclosure	79	6.49 (2.99)	44	7.31 (2.84) _a	35	5.47 (2.88) _b
Time 1 depressive symptoms	79	.33 (.19)	44	.36 (.18) ₁	35	.28 (.18) ₂
Time 2 depressive symptoms	79	.23 (.18)	44	.26 (.18) ₁	35	.18 (.17) ₂

Possible observed disclosure scores could range from 0 to 15. Possible depressive symptoms scores could range from 0 to 2. Means for girls and boys with different letters as subscripts differed significantly from each other according to a *t* test. Means for girls and boys with different numbers as subscripts are marginally different ($p=.06$) according to the main effect of gender from a 2 (Gender) \times 2 (Time Point) Mixed-Model ANOVA

Table 2 Regression analyses predicting Time 2 depressive symptoms

DV = T2 Depression		DV = T2 Depression		DV = T2 Depression			
β	t value	R^2	$R^2 \Delta$	β	t value	R^2	$R^2 \Delta$
Step 1:		.53***	–	Step 1:		.51***	–
T1 Depression	.73	.54***	.01	T1 Depression	.71	.51***	.00
Step 2:				Step 2:			
Disclosure	–.04	.49		Disclosure	–.02	.51***	
Gender	–.09	1.06		Problem Type	.10		
Step 3:		.57***	.03*	Step 3:		.53***	.03
Disclosure × Gender	–.42	2.31*		Disclosure × Problem Type	.351		
				Problem Type	.31		
				Disclosure × Gender	–.46	.58***	.05*
				Disclosure × Prob. Type	.17		
					.63		

Girls were coded as 0, boys were coded as 1. For problem type, interpersonal problems were coded as 0, non-interpersonal problems were coded as 1

* $p < .05$. *** $p < .001$

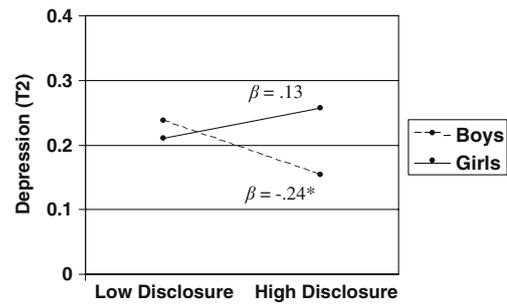


Fig. 1 Effect of disclosure on Time 2 depressive symptoms for boys and girls. Range of possible scores for depressive symptoms was 0–2. Low disclosure was operationalized as 1 SD below the full sample mean for disclosure. High disclosure was operationalized at 1 SD above the full sample mean for disclosure. The standardized betas were computed using simple slope analyses (Aiken and West 1991; Holmbeck 2002) for the regression analysis in which Time 2 depressive symptoms (the DV) were predicted from Time 1 depressive symptoms (Step 1), gender and disclosure (Step 2), and the interaction between gender and disclosure (Step 3)

Disclosure × Problem type interaction was entered on the third step. Time 1 depressive symptoms were a positive predictor of Time 2 depressive symptoms. Neither disclosure nor problem type were significant predictors. Contrary to predictions, the interaction between disclosure and problem type also was not significant. For exploratory purposes, simple slope analyses were conducted. When youth disclosed about non-interpersonal problems, Time 1 disclosure was associated with fewer depressive symptoms at Time 2 but the effect was not significant, $\beta = -.20, p = .24$. When youth disclosed about interpersonal problems, the effect of Time 1 disclosure on Time 2 depressive symptoms was near zero, $\beta = .06, p = .58$. Although the direction of effects was consistent with hypotheses, the associations were not significant.

Testing Whether Problem Type Accounts for the Gender Moderation Effect in Regards to the Impact of Disclosure on Changes in Depressive Symptoms

A final regression analysis then was conducted to test whether the Disclosure X Problem Type interaction helped to explain why gender moderated the effect of disclosure on depressive symptoms (Hypothesis 6). Although this seemed unlikely given that the problem type interaction was not significant, the planned analysis was conducted nonetheless. In this model, Time 2 depressive symptoms were predicted from Time 1 depressive symptoms (step 1), the main effects of disclosure, gender, and problem type (step 2), and the Disclosure × Gender and Disclosure × Problem Type interactions (step 3, see Table 2). Although the Disclosure × Problem Type interaction again was non-significant, the gender interaction remained significant and was similar in magnitude to the effect found when the

problem type interaction was not controlled. This finding indicates that girls' tendency to disclose about interpersonal problems did not explain why Time 1 disclosure predicted fewer depressive symptoms at Time 2 for boys but not girls.

Discussion

The current study contributes to our understanding of the role of disclosure in the friendships of girls and boys. First, girls were observed to disclose to friends more than boys. Although this finding replicates many other studies indicating greater disclosure in the friendships of girls (see Rose and Rudolph 2006), the finding is especially significant when it emerges in an observational, laboratory design given that it has been argued that gender differences are minimized when girls and boys are placed in the same context and the same behavior is elicited (Leaper 2000). In addition, girls discussed interpersonal problems more than boys. This finding was noteworthy given that, although previous research indicates that girls are more distressed by interpersonal problems than boys (Blatt et al. 1993; Hankin et al. 2007), studies had not tested whether girls talk with friends more than boys about interpersonal problems.

The most critical findings, though, were those that addressed the impact of disclosure on the depressive symptoms of girls and boys. For boys, disclosing about problems to friends predicted fewer depressive symptoms 6 months later. This fits with work suggesting that talking about problems is cathartic and provides emotional benefits (e.g., Mahoney 1995). The result also fits with common perceptions that talking about problems makes people feel better. In contrast, for girls, disclosure about problems was not related to depressive symptoms 6 months later. Finding that disclosure was not protective for girls was particularly meaningful given that girls were observed to disclose about problems significantly more than boys.

One possible explanation for this gender difference was tested. As noted, girls were more likely than boys to discuss interpersonal problems. It also was hypothesized that discussing interpersonal problems would be less protective than discussing non-interpersonal problems, which could help to explain why disclosure would be less protective for girls. In fact, disclosure about interpersonal problems was unrelated to later depressive symptoms. Although disclosure about non-interpersonal problems did predict somewhat fewer depressive symptoms, the effect was not significant. Moreover, controlling for the interaction between disclosure and problem type did not decrease the effect of the interaction between disclosure and gender.

As such, a crucial direction for future research is to examine other factors that may explain why disclosure is

protective for boys but not girls. In the following paragraphs, we speculate about the different behaviors, cognitions, and/or meanings for girls and boys that undermine the protective value of disclosure for girls. In terms of behaviors, in addition to considering the different types of problems that girls and boys discuss, future research should examine whether girls' disclosure about problems is tied to other conversational processes that undermine the potential buffering effect of disclosure. In the current study, disclosure was defined broadly (i.e., the degree to which youth disclosed about the problem to the friend) rather than in a more nuanced manner (i.e., specific subtypes of disclosure were not coded). This was, in part, because the observation was 5 min, which may not have been long enough to accurately classify disclosure into subtypes. Longer observations might have revealed that youth high in disclosure (primarily girls) are particularly susceptible to engaging in conversational processes that are linked with internalizing symptoms. For example, the repetitive, speculative, and negatively-focused conversations that characterize co-rumination are not only more common among girls (e.g., Hankin et al. 2010; Rose 2002) but predict depressive symptoms over time especially strongly for girls (Rose et al. 2007). Youth high in disclosure also may be more likely to engage in excessive reassurance seeking (i.e., repeatedly asking others if one is truly cared for; Joiner et al. 1992), which also is more common among females (Weinstock and Whisman 2007) and is linked with elevated depressive symptoms (Prinstein et al. 2005). Importantly, the current study did not suggest that normative disclosure predicted *greater* internalizing symptoms for girls. However, it may be that disclosure was not more protective for girls overall at least in part because some girls high in disclosure also engage in conversational processes that confer risk for internalizing symptoms. In contrast, when boys disclose, they may be more likely to engage in behaviors like direct problem solving that are more effective in regards to buffering youth against depression.

Additionally, girls' disclosure may be tied to cognitions that interfere with the potential protective benefits of disclosure. For example, given that girls tend to take greater personal responsibility for problems than do boys (Pomerantz and Ruble 1998), talking about problems might heighten girls' distress about experiencing or not being able to solve them if the discussions make the problems more salient. Girls also are more likely than boys to exhibit a depressogenic attributional style (i.e., to attribute negative life events to internal, global, and stable causes; see Hankin and Abramson 2001). If talking about problems makes them more salient, girls' attributions regarding the problems might undermine the potentially protective value of disclosure. As such, although girls and boys both may reap

benefits of disclosure such as emotional catharsis and feelings of connection in friendship, the protective value of these benefits may be diminished for girls due to their cognitions. It may be that these protective and risk factors cancel each other out, which could result in the null effect of disclosure on depressive symptoms found for girls in the present study.

Finally, considering jointly in future studies socialization processes for disclosure and the meaning that disclosure holds for girls and boys may be important. Future research should examine individual differences in socialization pressures regarding disclosure, including the degree to which parents foster disclosure and the degree to which friends elicit or discourage disclosure. Girls who experience the most socialization pressure to disclose would be expected to disclose the most. However, among girls high in disclosure, there may be individual difference in how valuable they consider disclosure to be. Although it is likely that some girls disclose because they value disclosure and feel that they benefit from the cathartic expression and the connection with friends, others may not find disclosure particularly meaningful or helpful but simply do so because they feel pressure to disclose. When considering all girls together, then, disclosure may not emerge as a significant predictor of fewer depressive symptoms because some girls who disclose may not find the experience especially valuable or beneficial. In contrast, for boys, disclosure involves actively resisting the pull of traditional gender roles and risking negative responses from others. One possibility, then, is that boys only disclose if disclosure holds a positive meaning and high value for them personally. This would contribute to finding a buffering effect of disclosure on depressive symptoms for boys. Individual differences in both socialization pressure for disclosure and the perceived meaning and value of disclosure should be assessed in future studies to address these possibilities.

In regards to depressive symptoms, although girls reported somewhat greater symptoms than boys, the gender difference was only marginally significant. This may be because the youth were early adolescents, and gender differences in depression are more consistently found by mid-adolescence (Twenge and Nolen-Hoeksema 2002). Moreover, the current findings may help to explain why girls experience a greater increase in depressive symptoms than boys after the transition to adolescence. A variety of risk factors for depression that are especially common among girls have been identified (Nolen-Hoeksema and Girgus 1994). The current findings suggest that girls disclosing to friends about these stressors will not protect them from the development of depressive symptoms. In contrast, boys' disclosures to friends are more likely to buffer them from the development of depression.

Clearly, working to better understand the mechanisms that explain why disclosure to friends about problems is more protective for boys than girls is a vital direction for future research. There also are other limitations of the research that should be addressed. Replicating the findings with additional and larger samples will be important. In addition, the short time frame was a limitation. Following youth over longer periods of time and including more than two assessments will be necessary to gain a fuller understanding of how the associations between disclosure and depressive symptoms unfold over time for girls and boys. Replicating the findings with other assessments of disclosure will be useful too. The observational method provides a "snapshot" assessment of conversations in friendships. The assumption is that the observed behavior reflects friends' typical conversational styles. This assumption could be confirmed with daily diary, telephone interview, or hand-held computer assessments that assessed typical friendship interactions across days or weeks. Studying more diverse samples also will be important in order to test the generalizability of the findings. Finally, future studies should take into account friends' responses to girls' and boys' disclosures. Studies with longer observational assessments could examine the interplay between youths' disclosures and friends' responses and their impact the development of depressive symptoms, which may differ for girls and boys.

Despite these important future directions, the current study does have potentially significant applied implications. Adults in adolescents' lives, including parents and teachers, likely are comforted when youth have a close friend with whom they can share problems and concerns. Ironically, we may be particularly comforted when adolescent girls have a confidant given that having someone to talk to may seem especially important to girls. However, the current findings suggest that girls may not feel better as a result of talking to friends about problems, at least in terms of the development of depressive symptoms. More work is needed to understand *why* disclosure about problems may be less protective for girls, and that work will inform prevention and intervention efforts. In the meantime, adults might be advised to encourage adolescent girls not to rely solely on talking with friends to cope with problems but instead to engage in other strategies that have been demonstrated to benefit emotional adjustment (Weisz et al. 2003), such as reframing negative cognitions and engaging in direct problem-solving attempts.

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