Implicit and explicit self-esteem as concurrent predictors of suicidal ideation, depressive symptoms, and loneliness

Daan H.M. Creemers[a,b,*], Ron H.J. Scholte[b], Rutger C.M.E. Engels[b], Mitchell J. Prinstein[c], Reinout W. Wiers[d]

[a] Mental Health Care Institute, GGZ Oost-Brabant, Burg. Kuyperlaan 5, 5461 AA Veghel, The Netherlands
[b] Radboud University Nijmegen, Behavioural Science Institute, 6500 HE Nijmegen, The Netherlands
[c] University of North Carolina at Chapel Hill, Davie Hall, Campus Box 3270, USA
[d] University of Amsterdam, Roeterstraat 15, 1018 WB Amsterdam, The Netherlands

ARTICLE INFO

ABSTRACT

The aim of the present study was to examine whether explicit and implicit self-esteem, the interaction between these two constructs, and their discrepancy are associated with depressive symptoms, suicidal ideation, and loneliness. Participants were 95 young female adults ($M = 21.2$ years, SD $= 1.88$) enrolled in higher education. We administered the Name Letter Task to measure implicit self-esteem, and the Rosenberg self-esteem scale to assess explicit self-esteem. The results indicated that explicit but not implicit self-esteem was negatively associated with depressive symptoms, suicidal ideation, and loneliness. The interaction of implicit and explicit self-esteem was associated with suicidal ideation, indicating that participants with high implicit self-esteem combined with a low explicit self-esteem showed more suicidal ideation. Furthermore, the size of the discrepancy between implicit and explicit self-esteem was positively associated with depressive symptoms, suicidal ideation, and loneliness. In addition, results showed that the direction of the discrepancy is an important: damaged self-esteem (high implicit self-esteem combined with low explicit self-esteem) was consistently associated with increased levels of depressive symptoms, suicidal ideation, and loneliness, while defensive or fragile self-esteem (high explicit and low implicit self-esteem) was not. Together, these findings provide new insights into the relationship of implicit and explicit self-esteem with depressive symptoms, suicidal ideation, and loneliness.

1. Introduction

Developmental change and exploration of possible life directions characterize the transition from late adolescence to early adulthood (Arnett, 2000). During this stage, adolescents make life choices often with long-lasting consequences, and strive for a greater independence from parents, which changes the relationships with parents and friends (Arnett, 2000, 2007). Schulenberg, Bryant, and O'Malley (2004; p.1119) described the developmental task of this period as 'trying to take hold of some kind of life.' For a substantial number of adolescents, this phase is associated with internalizing psychological problems (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). Several theorists have

proposed that explicit self-esteem plays a crucial role in the onset and maintenance of these internalizing problems (Brage & Meredith, 1994; Evans, Hawton, & Rodham, 2004; Harter, 1993; Prinstein & La Greca, 2002). Recently, it has been suggested that implicit self-esteem (De Raedt, Schacht, Franck, & De Houwer, 2006), or the discrepancy between implicit and explicit self-esteem (Schröder-Abé, Rudolph, & Schütz, 2007), could also relate to internalizing problems. However, research on implicit self-esteem and the discrepancy between implicit and explicit self-esteem is still scarce. Therefore, the purpose of this study was to gain more insights into the relationship of explicit self-esteem, implicit self-esteem, and the discrepancy between implicit and explicit self-esteem with internalizing psychological problems in female young adults.

Previous research suggests that various internalizing problems occur frequently during adolescence (Fleming & Offord, 1990; Fergusson, Woodward, & Horwood, 2000; Heinrich & Gullone, 2006). More specifically, three common internalizing problems in this period of life are depression (Fleming & Offord, 1990), suicidal

* Corresponding author. Radboud University Nijmegen, Behavioural Science Institute, 6500 HE Nijmegen, The Netherlands. Tel.: +31 (0)24 3612801; fax: +31 (0)24 3612776.
E-mail address: D.Creemers@pwo.ru.nl (D.H.M. Creemers).

ideation (Fergusson et al., 2000), and loneliness (Heinrich & Gullone, 2006). Compared with childhood, adolescence is associated with significant increases in the prevalence of depressive disorders (Petersen, Kennedy, & Sullivan, 1991). Studies show that one third of all adolescents show significant depressed moods (Petersen et al., 1993) and that the prevalence of clinical depression in adolescence is between 4% and 8% (Birmaher et al., 1996). Furthermore, adolescent depression may have serious consequences. Adolescent depression is associated with depression and anxiety disorders later on in life (Ferguson & Woodward, 2002), poor psychosocial and academic outcome, and an increased risk for substance abuse (Birmaher et al., 1996). In addition, depression is the most frequently reported risk factor associated with adolescent suicide (Pagliaro, 1995).

Furthermore, longitudinal studies suggest that suicidal ideation also increases during adolescence (Fergusson et al., 2000; Kerr, Owen, Pears, & Capaldi, 2008). Suicidal ideation is defined as thoughts that serve as a means to foster one's own death (American Psychiatric Association, 2003). It can vary from thoughts about the worthlessness of life and a death wish to concrete suicide plans and an obsession with self-destruction. Suicidal ideation predicts suicide attempts (Evans, Hawton, Rodham, & Deeks, 2005) and is an important risk factor for completed suicide (King, 1997).

Next, an increased feeling of loneliness in adolescence is common (Sippola & Bukowski, 1999). Loneliness has been defined as an emotional aversive response to the discrepancy between the desired and the perceived interpersonal relationships of the individual (Peplau & Perlman, 1982). Loneliness has an important intrapersonal element because it reflects the discrepancy between the *perception* of one's social relationships and the desired social relationships (Heinrich & Gullone, 2006). Feelings of loneliness are associated with psychological and physical health problems as well as behavioural pathologies (Baumeister & Leary, 1995).

Depression, suicidal ideation, and loneliness are separate but related constructs (Boergers, Spirito, & Donaldson, 1998; Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006). According to cognitive theories, such forms of internalizing problems are the result of dysfunctional (self) schemas existing in memory (Clark, Beck, & Alford, 1999; Ellis, 2006; Mahon, Yarcheski, Yarcheski, Cannella, & Hanks, 2006). Schemas develop based on early life experiences and become stable cognitive structures that shape emotions, thoughts, and behaviour of individuals. Moreover, people tend to process information in a way that is congruent with their perspective of the world and themselves (Beck, 1967). Accordingly, dysfunctional and negative self-schemas bias information processing and lead to negative beliefs towards 'the self', as self-relevant information is processed in a typical negative manner (Clark et al., 1999). To date, research has mainly focused on self-schemas that are explicit in the sense that they are available to conscious introspection. One example is explicit self-esteem. Explicit self-esteem can be defined as an individual's conscious feeling of self-worth and acceptance (Rosenberg, 1965). Consistent with the assumptions and predictions of the cognitive theory, previous studies consistently showed that explicit self-esteem has a strong inverse relationship with depression (Harter, 1993), suicidal ideation (Evans et al., 2004), and loneliness in adolescence (Prinstein & La Greca, 2002).

Recently, it has been suggested that implicit self-esteem could relate to internalizing psychological problems. Implicit self-esteem is defined as relatively automatic, overlearned, and nonconscious evaluation of the self that guides spontaneous reactions to self-relevant stimuli (Greenwald & Banaji, 1995). Moreover, according to dual-process models, we can distinguish between two information-processing modes with different operating principles, the cognitive and the experiential mode (Epstein, 1994). Explicit

self-esteem reflects a product of the cognitive mode, shaped through rational and conscious processing of self-relevant stimuli, whereas implicit self-esteem refers to the experiential mode, shaped through automatic, intuitive processing of affective experiences (Dijksterhuis, 2006; Epstein & Morling, 1995). Schemas in the experiential mode are 'generalizations about what the world and the self are like', based on 'synthesis of emotional significant experiences' (Teglasi & Epstein, 1998). In line with this, the experiential belief (e.g. implicit self-esteem) reflects a relatively automatic, affective evaluation of the self that may exist outside of awareness (Bosson, Swann, & Pennebaker, 2000). Implicit self-evaluations are presumably more automatic, meaning that they are relatively more unconscious, unintentional, efficient, and uncontrollable than explicit self-evaluations (Bargh, 1994). Theorists assume that implicit self-esteem develops earlier and is more primitive than explicit self-esteem (Bosson, Brown, Zeigler-Hill, & Swann, 2003; Koole, Dijksterhuis, & van Knippenberg, 2001), and stems, at least partly, from early social interactions (DeHart, Pelham, & Tennen, 2006). In line with this, implicit self-evaluations are likely to be produced by rather primitive self-enhancement mechanisms, whereas explicit self-evaluations are assumed to be more sophisticated cognitive judgments of the self (Swann & Schroeder, 1995).

Although research on implicit self-esteem is scarce, few studies that do exist have provided valuable information. In contrast to the cognitive theory, high levels of implicit self-esteem seem to be associated with depression in adults (De Raedt et al., 2006; Franck, De Raedt, Dereu, & Van den Abbeele, 2007; Franck, De Raedt, & De Houwer, 2008; Gemar, Segal, Sagrati, & Kennedy, 2001). Similarly, implicit self-esteem, but not explicit self-esteem, has been found to relate positively to future depressive symptoms at six months follow-up (Franck, De Raedt, & De Houwer, 2007). On the other hand, recent findings of Bos, Huijding, Muris, Vogel, and Biesheuvel (2010) suggest there is no association between implicit self-esteem and internalizing problems (e.g. depression and anxiety) in adolescents. To date, the relationship of implicit self-esteem with depressive symptoms, suicidal ideation and loneliness in early adulthood has not received any attention in previous research.

In addition to the unique associations of implicit and explicit self-esteem with indices of internalizing symptoms, it may be of value to consider the discrepancy between implicit and explicit self-esteem as relevant for understanding psychopathology. Implicit and explicit self-esteem are separate but related constructs (Bosson et al., 2000). To understand the role of implicit self-esteem in internalizing problems, the relationship between implicit and explicit self-esteem appears to be important. First, implicit self-esteem might moderate (i.e., buffer or change the nature of) the association between explicit self-esteem and each internalizing outcome. Alternatively, the discrepancy between implicit and explicit self-esteem may be important to consider. Asymmetric changes of self-schemas (for example increases in implicit self-esteem and decreases in explicit self-esteem) may lead to discrepancies between implicit and explicit self-esteem, assuming that different processes influence implicit and explicit self-esteem (Gawronski & Bodenhausen, 2006). More specifically, we can distinguish between two forms of implicit and explicit self-esteem discrepancies: a) defensive (Jordan, Spencer, Zanna, Hoshino-Browne, & Correll, 2003) or fragile self-esteem (Bosson et al., 2003) reflecting high explicit and low implicit self-esteem and b) damaged self-esteem (Schröder-Abé, Rudolph, Wiesner, & Schütz, 2007) consisting of high implicit and low explicit self-esteem.

To explain why discrepancies between implicit and explicit self-esteem are a source of psychological problems, Schröder-Abé, Wiesner et al. (2007) hypothesized that both types of discrepancies

are maladaptive because they indicate a lack of integration in self-representation. Franck, De Houwer et al. (2007) suggested that implicit self-esteem might be indicative of the 'ideal self,' whereas explicit self-esteem may represent the 'actual self.' People with damaged self-esteem feel trapped between their goals and the 'reality.' Due to the discrepancy between their goals and the 'reality,' which is experienced as disturbing, people feel entrapped, which in turn may lead to psychological problems. Furthermore, according to the buffer hypothesis, implicit self-esteem buffers the effects of low explicit self-esteem and functions as a defence mechanism against ego-threats (Bosson et al., 2003). In line with this, Jordan et al. (2003) argued that implicit self-esteem motivates individuals to restore their positive self-views.

Theoretically, it can be expected that not only explicit and implicit self-esteem but also the discrepancy between implicit and explicit self-esteem relate to psychopathology. Indeed, previous studies suggest that discrepancies between implicit and explicit self-esteem relate to defensive behaviour (Schröder-Abé et al., 2007), psychological conflict (Petty, Tormala, Briñol, & Jarvis, 2006), anger suppression, depressive attributional style, and nervousness (Schröder-Abé, Rudolph et al., 2007). To date, research on discrepancies between implicit and explicit self-esteem is scarce, and little is known about the relationship with depressive symptoms, loneliness, and suicidal ideation.

In sum, the aim of the present study was to investigate whether implicit self-esteem, explicit self-esteem and their interaction relate to depressive symptoms, suicidal ideation, and loneliness. Next, we examined the main effects of the discrepancy between explicit and implicit self-esteem and the direction of the discrepancy, as well as the interaction between these measures.

2. Methods

2.1. Participants

Ninety-five female undergraduate students of the College for Higher Education Arnhem/Nijmegen (HAN), in The Netherlands participated in this study. Their mean age was 21.2 years (SD = 1.88, Range = 19–30). Students participated voluntarily to the study.

2.2. Procedure

In order to recruit the College's students for this study, we contacted the principal of the College for Higher Education Arnhem/Nijmegen and asked his consent. After the principal consented, we provided the outline of the study to the teachers in a meeting. The teachers informed all students at the college about the study in advance and told them that their participation was voluntary.

Data were collected during regular class sessions. Participants were seated at private computer stations and were told that the experiment investigated various predictors of human emotion. Participants started with the computerized implicit measure, the Name Letter Task (NLT; Nuttin, 1985). After completing this task, the computerized explicit self-esteem scale was administered. Subsequently, students completed questionnaires on depressive symptoms, suicidal ideation, and loneliness. Students had 60 min to complete the questionnaires. All participants were told that if they became troubled or concerned about themselves after answering the questions in the questionnaires, they could obtain referrals to local therapists. Participants were also told that they could be informed when their scores on depressive symptoms reached clinical levels. No participants asked for a referral or indicated that they wanted to be informed about their scores.

2.3. Measures

2.3.1. Explicit self-esteem

A Dutch version of the Rosenberg self-esteem scale (RSES; Rosenberg, 1965) was used to measure global feelings of self-esteem (e.g., "I feel I do not have much to be proud of"). This instrument consists of 10 items measured on a 4-point scale (totally agree–totally disagree). Past research demonstrated the validity and test-retest reliability of the RSES (Franck, De Raedt, Barbez, & Rosseel, 2008). Cronbach's α was .87 for the present sample.

2.3.2. Implicit self-esteem

To measure implicit self-esteem, a computerized version of the Name Letter Task (NLT; Nuttin, 1985) was administered. In random order, each letter of the alphabet was displayed once separately in the centre of the screen with the question: "How much do you like this letter?" Participants evaluated each letter on a 7-point scale (dislike very much–like very much). Participants were instructed to work quickly and to follow their first intuitive reactions. There was no response window. The Name Letter Task is based on the assumption that the initials of an individual's name are closely associated with the self (Nuttin, 1985), and that the relative liking of one's own initials in comparison with the liking of the other letters of the alphabet therefore reflects someone's implicit self-attitudes. Because participants are unaware of the logic behind the task, the evaluation of people's own initials can be qualified as an index of implicit self-esteem, (Greenwald & Banaji, 1995). Past research has demonstrated the reliability and validity of the NLT (Bosson et al., 2000; Koole & Pelham, 2003). The experiment in the present study was programmed using Inquisit Millisecond software.

The Self-corrected algorithm (S-algorithm) was used to compute the index of implicit self-esteem (LeBel & Gawronski, 2009). In this algorithm, we computed the difference scores between the participants' mean ratings of their initials and the participants' mean ratings of non-initials. The mean rating of their initials was computed from participants' scores on the first letter of their first- and last name. The mean ratings of participants' non-initials were subtracted from the mean ratings of their initials. Higher scores indicated higher levels of implicit self-esteem. This algorithm controls for individual differences in positive or negative affect (Watson, 1988) and rating tendencies or transient mood states (Schwarz, 1990).

2.3.3. Depressive symptoms

A Dutch translation of the Beck Depression Inventory (BDI-II; Beck, Steer, & Brown, 1996; Van der Does, 2002) was used to assess the existence and severity of depressive symptoms. Past research demonstrated good validity and psychometric properties of this scale (Van der Does, 2002). The instrument consists of 21 self-report items measured on a 4-point scale, each item ranging from 0 to 3. Cronbach's α was .89 for the present sample.

2.3.4. Suicidal ideation

A Dutch translation of the questionnaire developed by Heilbron and Prinstein (2010) was used to measure active suicidal ideation. The instrument was designed to assess suicidal thoughts in adolescents and young adults (e.g., "I thought that killing myself would solve my problems") and consists of 16 items measured on a 5-point scale (never - almost every day). This abbreviated measure includes a subset of items drawn from the Suicidal Ideation Questionnaire (SIG; Reynolds, 1988) and the NIMH-DISC-IV (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). Higher scores indicate higher levels of suicidal ideation. Cronbach's α was 0.89 for the present sample.

2.3.5. Loneliness

Participants completed a short version (R-ULS-8, Roberts, Lewinsohn, & Seeley, 1993) of the revised UCLA Loneliness Scale (R-ULS; Russell, Peplau, & Cutrona, 1980). Higbee and Roberts (1994) found satisfactory construct validity and reliability in other adolescent populations. The R-ULS-8 was translated into Dutch according to the guidelines of the International Test Commission (Hambleton, 1994). This scale consists of 8-items (e.g., "I feel left out") measured on a 5-point scale *(I totally disagree − totally agree)*. Higher scores indicate higher levels of loneliness. Cronbach's α was .84 in the present sample.

2.4. Data analyses

To examine whether implicit and explicit self-esteem relate to suicidal ideation, depressive symptoms, and loneliness, we conducted a series of hierarchical multiple regression analyses with explicit self-esteem and implicit self-esteem entered in step 1 and their interaction in step 2. The interaction was tested using the procedure proposed by Aiken and West (1991). All variables were centered before being entered into the equation.

Subsequently, we examined whether the discrepancy between implicit and explicit self-esteem (cf., Briñol, Petty, & Wheeler, 2006) relates to suicidal ideation, depressive symptoms, and loneliness. To determine this discrepancy, we computed the absolute value of the difference between the standardized explicit and implicit measure of self-esteem. High scores on this variable indicate a larger discrepancy between implicit and explicit self-esteem. The discrepancy index indicates where people fall within the distribution of participants in examining the implicit versus explicit measures. Discrepancies could be in either direction; higher implicit than explicit self-esteem (indicating a negative discrepancy) or higher explicit than implicit self-esteem (indicating a positive discrepancy). In the present study, 44 participants had higher implicit than explicit self-esteem, and 51 participants had higher explicit than implicit self-esteem. Next to analyzing the size of the discrepancy, we included a variable that indicated the direction of the discrepancy (implicit < explicit or implicit > explicit; dummy code). To examine whether the discrepancy between implicit and explicit self-esteem is associated with suicidal ideation, depressive symptoms, and loneliness, we conducted a series of hierarchical multiple regression analyses with the size of the discrepancy and the direction of the discrepancy (dummy) entered in step 1 and their interaction in step 2. The use of discrepancy scores, the dummy variable, and the interaction between them has been found to be an appropriate manner of specifically testing the relative difference between implicit and explicit measures (Briñol et al., 2006; Schröder-Abé, Rudolph et al., 2007). The interaction effects were tested using the procedure proposed by Aiken and West (1991). The discrepancy score (size of the discrepancy) was centered before being entered into the equation.

3. Results

3.1. Demographic characteristics

Table 1 displays the descriptive statistics of all primary variables. Paired samples *t*-test showed that the mean ratings of the participants' non-initials differed significantly from the ratings of their initials, *t* (94) = 17.26, *p* < .001. This indicates that participants evaluated the initials of their names more positively than they evaluated non-initials. Table 2 includes intercorrelations among all study measures. The data on suicidal ideation did not have normal distribution. A logarithmic transformation was used to reduce the

Table 1
Descriptive statistics for measures of implicit and explicit self-esteem, depressive symptoms, suicidal ideation, and loneliness.

	Mean	SD	Range	Min	Max
Implicit self-esteem	1.71	.97	−6 to 6	−0.19	4.08
Explicit self-esteem	30.65	4.42	10 to 40	18.00	40.00
Depressive symptoms	8.29	7.32	00 to 63	0.00	34.00
Suicidal ideation	8.47	1.72	16 to 80	8.00	21.00
Loneliness	14.49	5.46	8 to 40	8.00	30.00

positive skewness of suicidal ideation. Implicit self-esteem was uncorrelated with any other variables. Explicit self-esteem correlated negatively with depressive symptoms, loneliness, and suicidal ideation. Depressive symptoms, suicidal ideation, and loneliness correlated positively with each other.

3.2. Associations with explicit and implicit self-esteem

To examine whether explicit and implicit self-esteem were associated with depressive symptoms, suicidal ideation, and loneliness, we conducted a series of hierarchical multiple regression analyses. The results of step 1 show a negative association of explicit self-esteem with depressive symptoms ($\beta = -0.70$, $p < 0.001$), suicidal ideation ($\beta = -0.38$, $p < 0.001$), and loneliness ($\beta = -0.68$, $p < 0.001$). Furthermore, the results showed that there was no significant direct association (i.e. main effect) of implicit self-esteem with depressive symptoms ($\beta = 0.04$, ns.) suicidal ideation ($\beta = 0.16$, ns.), and loneliness ($\beta = -0.11$, ns.). Table 3 presents the results of the multiple hierarchical regression analyses. These results indicate that lower levels of explicit self-esteem, and not implicit self-esteem, were associated with higher levels of depressive symptoms, suicidal ideation, and loneliness.

3.3. Associations of the interaction between implicit and explicit self-esteem

To test whether the interaction between implicit and explicit self-esteem relates to depressive symptoms, suicidal ideation, and loneliness, we entered the interaction in step 2 of the same multiple hierarchical regression analyses as were reported on in the previous paragraph. Table 3 summarizes the results of the multiple hierarchical regression analyses. The results of step 2 show no significant associations of the interaction between implicit and explicit self-esteem with depressive symptoms ($\beta = -0.04$, ns.) and loneliness ($\beta = -0.07$, ns.). The interaction between implicit and explicit self-esteem associated significantly with suicidal ideation ($\beta = -0.28$, $p < 0.01$). Fig. 1 presents the predicted values for the interaction between implicit and explicit self-esteem. Comparison of the slopes of the regression lines representing low (−1 SD), medium (average), and high explicit self-esteem (+1 SD) indicated that the associations between implicit self-esteem and suicidal ideation were stronger when the participants had a low explicit self-esteem. When participants had high ($b = -0.007$, SE = 0.008,

Table 2
Correlations among measures of implicit and explicit self-esteem, depressive symptoms, suicidal ideation, and loneliness.

	1	2	3	4	5
1. Implicit self-esteem	−				
2. Explicit self-esteem	−0.08	−			
3. Depressive symptoms	0.09	−0.70**	−		
4. Suicidal ideation	0.18	−0.36**	0.38**	−	
5. Loneliness	−0.07	−0.67**	0.60**	0.29**	−

Note: *p < .05; **p < 0.01.

Table 3
Hierarchical multiple regression analysis: Associations of explicit self-esteem, implicit self-esteem, and the interaction between implicit and explicit self-esteem with suicidal ideation, depressive symptoms, and loneliness.

	Suicidal ideation			Depressive symptoms			Loneliness		
	B	SE	β	B	SE	β	B	SE	β
Step 1									
Implicit self-esteem	0.01	0.01	0.16	0.33	0.57	0.04	−0.65	0.44	−0.11
Explicit self-esteem	−0.01	0.00	−0.38**	−1.15	0.12	−0.70**	−0.84	0.09	−0.68**
Step 2									
Implicit self-esteem * Explicit self-esteem	−0.00	.00	−0.28**	−0.07	0.13	−0.04	−0.09	0.10	−0.07

Note: Suicidal ideation $R^2 = 0.18$ in step 1 ($p = .00$); $\Delta R^2 = 0.08$ in step 2 ($p = 0.00$); Depressive Symptoms $R^2 = 0.49$ in step 1 ($p = .00$); $\Delta R^2 = .00$ in step 2 ($p = 0.58$); Loneliness $R^2 = 0.47$ in step 1 ($p = 0.00$); $\Delta R^2 = 0.01$ in step 2 ($p = 0.38$); *$p < 0.05$ **$p < 0.01$.

$p = 0.39$) or average ($b = 0.011$, SE $= 0.006$, $p = .057$) scores on explicit self-esteem, the level of implicit self-esteem did not relate to suicidal ideation. When participants had a low explicit self-esteem, their implicit self-esteem related significantly ($b = 0.029$, SE $= 0.009$, $p < 0.001$) to suicidal ideation, i.e., participants with a low implicit self-esteem scored low on suicidal ideation but participants with a high implicit self-esteem had the highest scores on suicidal ideation.

3.4. Associations of implicit-explicit discrepancies

Next, we next conducted a series of multiple hierarchical regression analyses to determine whether the size of the discrepancy, the direction of the discrepancy and their interaction relates to depressive symptoms, suicidal ideation, and loneliness[1]. Table 4 summarizes the results of the multiple hierarchical regression analyses. The results of step 1 showed that the size of the discrepancy was positively related to depressive symptoms ($\beta = 0.22$, $p < 0.01$) and suicidal ideation ($\beta = 0.25$, $p < 0.01$). We found no significant association between the size of the discrepancy and loneliness ($\beta = 0.17$, $p = 0.09$). The direction of the discrepancy was significantly related to all three internalizing symptoms (depressive symptoms $\beta = 0.39$, $p < 0.01$; suicidal ideation, $\beta = 0.27$, $p < 0.01$; loneliness, $\beta = 0.29$, $p < 0.01$). In addition, the results of step 2 showed that the interaction between the size of the discrepancy and the direction of the discrepancy was significantly associated with all three internalizing symptoms (depressive symptoms, $\beta = 0.51$, $p < 0.01$; suicidal ideation, $\beta = 0.41$, $p < .01$; loneliness, $\beta = 0.42$, $p < 0.01$, see Figs. 2–4). The consistent pattern across internalizing symptoms was that the associations between the size of the discrepancy and all symptoms was significantly stronger when the participants had a higher implicit than explicit self-esteem (negative discrepancy). When participants had a higher explicit than implicit self-esteem (positive discrepancy), the size of the discrepancy did not relate to any of the internalizing symptoms (all p-values $> .28$). These results indicate that a higher implicit than explicit self-esteem is positively associated with all internalizing symptoms measured.

4. Discussion

The objective of this study was to investigate whether explicit self-esteem, implicit self-esteem and their interaction were

associated with depressive symptoms, suicidal ideation, and loneliness. Subsequently, we examined the main effects of the discrepancy between explicit and implicit self-esteem and the direction of the discrepancy, as well as the interaction between these measures. The results showed that explicit self-esteem has an inverse relationship with depressive symptoms, suicidal ideation, and loneliness. Implicit self-esteem did not relate to these three internalizing symptoms. The interaction between implicit and explicit self-esteem was associated with suicidal ideation but not with depressive symptoms and loneliness. Furthermore, the size of the discrepancy between implicit and explicit self-esteem was positively associated with depressive symptoms and suicidal ideation. In addition to the associations of the discrepancy size of implicit and explicit self-esteem with depressive symptoms, suicidal ideation, and loneliness, results show that the direction of the discrepancy is an important vulnerability marker for these various internalizing symptoms. More specifically, our findings indicate that damaged self-esteem (high implicit self-esteem combined with low explicit self-esteem) is consistently associated with increased levels of all of these internalizing symptoms.
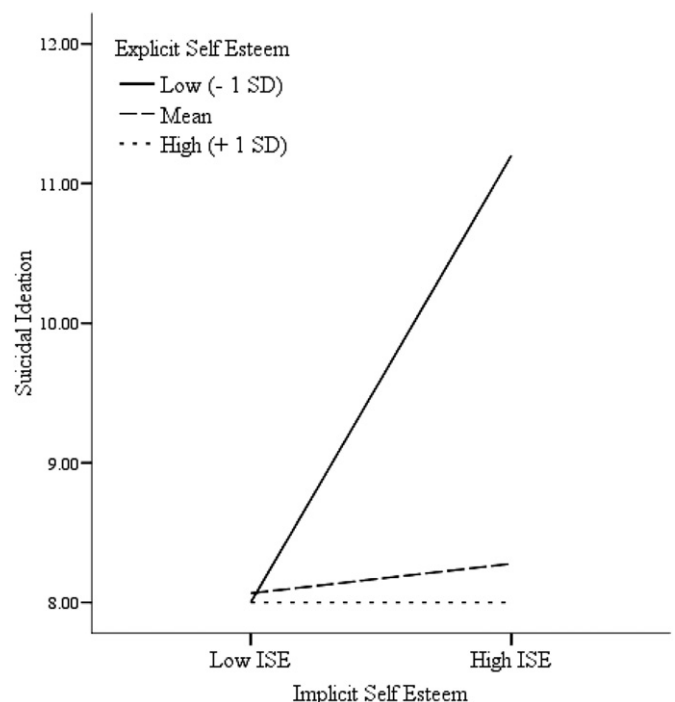

Fig. 1. Predicted values for suicidal ideation, illustrating the interaction between implicit and explicit self-esteem.

---

[1] The conventional regression model and the discrepancy regression model are two separate models and variables of both models need to be examined separately. Including the main effects of implicit and explicit self-esteem within the discrepancy regression model, would have led to a multicollinearity problem and to uninterpretable results. The analysis was therefore not performed and presented here.

Table 4
Hierarchical multiple regression analysis: Associations of the size of the discrepancy, direction of the discrepancy, and the interaction between the size of the discrepancy and the direction of the discrepancy with suicidal ideation, depressive symptoms, and loneliness.

	Suicidal ideation			Depressive symptoms			Loneliness		
	B	SE	β	B	SE	β	B	SE	β
Step 1									
Size of the discrepancy	0.02	0.01	0.25**	1.83	0.79	0.22*	1.07	0.63	0.17
Direction of the discrepancy	0.03	0.01	0.27**	5.66	1.36	0.39**	3.10	1.08	0.29**
Step 2									
Size of the discrepancy * Direction of the discrepancy	0.05	0.01	0.41**	6.46	1.44	0.51**	3.92	1.19	0.42**

Note: Suicidal ideation $R^2 = 0.15$ in step 1 ($p = .00$); $\Delta R^2 = 0.09$ in step 2 ($p = .00$); Depressive Symptoms $R^2 = 0.22$ in step 1 ($p = 0.00$); $\Delta R^2 = 0.14$ in step 2 ($p = 0.00$); Loneliness $R^2 = 0.12$ in step 1 ($p = 0.00$); $\Delta R^2 = 0.09$ in step 2 ($p = 0.00$); *$p < 0.05$ **$p < 0.01$.

First, the inverse relationship between explicit self-esteem on the one hand and depression, suicidal ideation, and loneliness on the other hand is not surprising and is in line with previous research (Brage & Meredith, 1994; Evans et al., 2004; Prinstein & La Greca, 2002). According to Cognitive theory (Clark et al., 1999), individuals with low explicit self-esteem show more internalizing symptoms, which may be due to dysfunctional self-schemas existing in memory. Accordingly, self-relevant information is processed in a typical negative manner, which leads to negative self-evaluations and later to depression, suicidal ideation, and loneliness.

Second, we examined the relationship between implicit self-esteem and depressive symptoms, suicidal ideation, and loneliness. The results show that implicit self-esteem was not directly associated with depressive symptoms, suicidal ideation, and
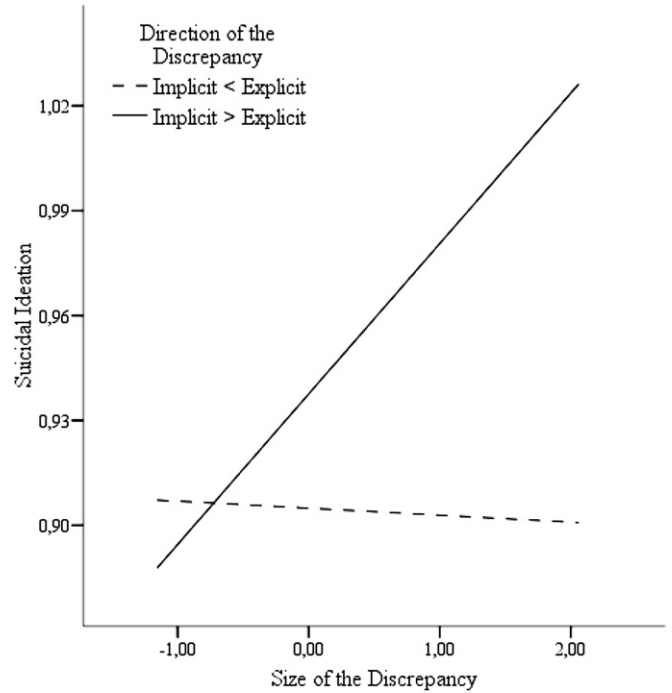

Fig. 3. Predicted values for suicidal ideation, illustrating the interaction between the size of the discrepancy and the direction of the discrepancy.

loneliness (no main effects). These results are consistent with previous research (De Raedt et al., 2006; Franck, Dereu et al., 2007; Franck, De Houwer et al., 2007; Franck, Barbez et al., 2008; Gemar et al., 2001) finding positive implicit self-esteem within (depressed) individuals in the absence of direct associations with depressive symptoms. Recent research conducted with adolescents (Bos et al., 2010) and children (Huijding, Bos, & Muris, 2011) revealed similar
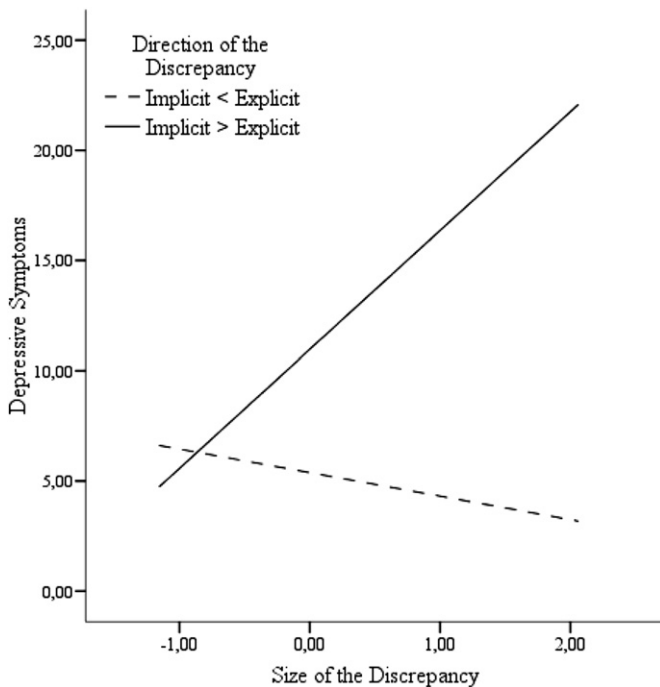

Fig. 2. Predicted values for depressive symptoms, illustrating the interaction between the size of the discrepancy and the direction of the discrepancy.
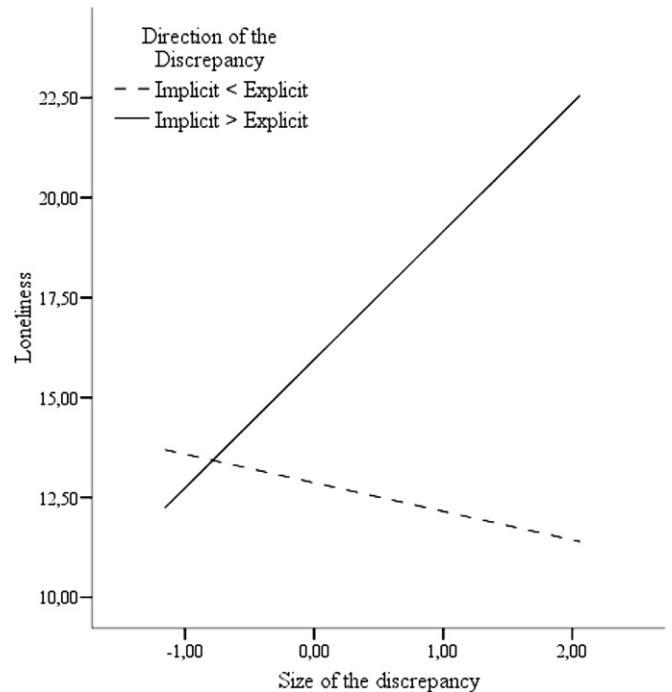

Fig. 4. Predicted values for loneliness, illustrating the interaction between the size of the discrepancy and the direction of the discrepancy.

negative results. Several explanations for the lack of relationship between implicit self-esteem and internalizing problems have been proposed. First, Bos et al. (2010) argued that implicit self-esteem might be less susceptible to temporary development-related stress which is characteristic for adolescence. Research has shown that during adolescence explicit self-esteem tends to decrease (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002) and psychological problems tends to increase (Costello et al., 2003), whereas it might be possible that implicit self-esteem remains stable. As a result, no association might be present. Second, implicit self-esteem is assumed to be a complex, multi-dimensional construct; therefore, various measures of implicit self-esteem may be addressing different facets of this construct (Koole & Pelham, 2003). It might be possible that implicit self-esteem as conceptualized by the NLT may capture an aspect of implicit self-esteem that is different from the IAT, and is therefore not associated with internalizing problems. In line with this, although De Raedt et al. (2006) found similar positively biased implicit self-esteem in depressed individuals with three different measures of implicit self-esteem, other studies have reported that different measures of implicit self-esteem (e.g. IAT, EAST and NLT) are not correlated with each other (Bosson et al., 2000; Rudolph, Schröder-Abe, Schültz, Gregg, & Sedikides, 2008).

Third, we found that the interaction between implicit and explicit self-esteem was associated with suicidal ideation. More specifically, when participants reported a low explicit self-esteem, their implicit self-esteem was positively related to suicidal ideation. This is an important finding as it emphasizes the importance to study the discrepancy between implicit and explicit self-esteem in order to understand the role of implicit self-esteem in internalizing problems (e.g., suicidal ideation). To our knowledge, this is the first study that investigated the association of the interaction of implicit and explicit self-esteem with suicidal ideation in a non-clinical sample. The results are in line with Franck, Dereu et al. (2007) who found high implicit and low explicit self-esteem in depressed individuals with suicidal ideation. In order to explain these results (see also Franck, Dereu et al., 2007) from the perspective of the entrapment hypothesis (Williams & Pollock, 2000) and the dual-process framework (Brandstädter & Rothermund, 2002), suicidal ideation can be conceptualized as a way of assimilative coping (active coping). It might be possible that people feel entrapped between their goals (i.e., implicit self-esteem) and perceived reality (i.e., explicit self-esteem) and instead of engaging in accommodative coping efforts (adapt goals), they may engage in suicidal ideation as an active way to re-establish an escape route. In support of this, damaged self-esteem (high implicit and low explicit self-esteem) has found to be associated with maladaptive forms of perfectionism (Zeigler-Hill & Terry, 2007) characterized by high fixed goals and standards. Furthermore, suicidal people often show high standards or expectations combined with recent failure (Baumeister, 1990).

Furthermore, the discrepancy between implicit and explicit self-esteem was positively associated with depressive symptoms and suicidal ideation. Thus, young female adults with a larger discrepancy between their implicit and explicit self-esteem showed more depressive symptoms and suicidal ideation. These results are consistent with previous research (Briñol et al., 2006; Schröder-Abé et al., 2007; Petty et al., 2006) illustrating that discrepancies between implicit and explicit self-esteem relate to dysfunctional outcomes. These significant associations could have important implications for theorizing about self-esteem because conceptual models that only include implicit or explicit self-esteem neglect the effects of the discrepancies between implicit and explicit self-esteem. Further, these findings support the finding of Schröder-Abé, Rudolph et al. (2007), which suggested that the effect of implicit self-esteem depends on the levels of explicit self-esteem of an individual. Results further showed that the *direction* of the discrepancy is an important vulnerability marker for all measured internalizing symptoms. Damaged self-esteem (high implicit self-esteem combined with low explicit self-esteem) was consistently associated with increased levels of all these internalizing symptoms. This is in line with previous research (Franck, De Houwer et al., 2007; Franck, Dereu et al., 2007; Franck, Barbez et al., 2008) indicating that specifically damaged self-esteem was associated with former depression, current depression, and depression with suicidal ideation. To explain why damaged self-esteem is associated with these internalizing problems, it is possible that the discrepancy between self-relevant goals (i.e., implicit self-esteem) and perceived reality (i.e., explicit self-esteem) form a basis for negative outcomes. More specifically, young adults with suicidal ideation may have high goals (i.e., implicit self-esteem) leading to suicidal thoughts as assimilative coping (cf., Franck, Dereu et al., 2007). With regard to depressive symptoms, these female college students might be able to adjust their goals (accommodative coping) after numerous attempts to change the situation; however, they might have nothing left to strive for if depressive symptoms are the result (cf., Franck, Dereu et al., 2007). Regarding loneliness, which has an important intrapersonal element as it reflects the discrepancy between the *perception* of one's social relationships and the desired social relationships (Heinrich & Gullone, 2006); implicit self-esteem may be indicative of the desired social relationships (goals), whereas explicit self-esteem may represent the actual social relationships. Future research is needed to examine mechanisms that further explain associations between implicit self-esteem and internalizing problems.

The present study had a number of limitations. First, due to the cross-sectional design of the study, we cannot draw conclusions about causality. Second, our sample consisted only of healthy female college students and future research should reveal whether our findings could be generalized to other groups. Despite these caveats, our study provides new insight into factors that are related to internalizing symptoms.

The present study provides new avenues for future research. Research on self-esteem has focused mainly on explicit self-esteem; however, implicit self-esteem and the discrepancy between implicit and explicit self-esteem has shown to be associated with several negative outcomes. These findings provide further support that implicit self-esteem is an important construct of self-esteem; therefore, conceptual models that include only explicit self-esteem and neglect the effects of implicit self-esteem need to be re-evaluated. In line with this, we emphasize that future research should focus on examining the effect of implicit self-esteem and the discrepancy of implicit and explicit self-esteem on internalizing problems and treatment outcome (e.g. CBT). Next, as argued before (De Houwer, Teige-Mocigemba, Spruyt, & Moors, 2009; Roefs et al., 2011; Wiers, Teachman, & De Houwer, 2007) measures of implicit cognitive processes need further refinement and validation, both in methodological sense (psychometric properties) and in their specific applications to psychopathology.

Conflict of interest

None.

Acknowledgements

References

Aiken, L., & West, S. (1991). *Multiple regression: Testing and interpreting interaction*. Newbury Park, CA: Sage.

American Psychiatric Association. (2003). Practice guideline for the assessment and treatment of patients with suicidal behaviors. *American Journal of Psychiatry, 160*, 1–60.

Arnett, J. J. (2000). Emerging adulthood: a theory of development from the late teens through the twenties. *American Psychologist, 55*, 469–480.

Arnett, J. J. (2007). Emerging adulthood: what is it, and what is it good for? *Child Development Perspectives, 1*(2), 68–73.

Bargh, J. A. (1994). The four horsemen of automaticity: awareness, intention, efficiency, and control in social cognition. In R. S. Wyer, Jr., & T. K. Srull (Eds.), *Handbook of social cognition* (2nd ed.). Hillsdale, NJ: Erlbaum.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review, 97*, 90–113.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects*. New York: Hoeber.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Manual for the Beck Depression Inventory* (2nd ed.). San Antonio, TX: The Psychological Corporation.

Birmaher, B., Ryan, S. W., Williamson, D., Brent, D., Kaufman, J., Dahl, R., et al. (1996). Childhood and adolescent depression: a review of the past ten years. *Journal of the American Academy of Child and Adolescent Psychiatry, 3*, 1427–1439.

Boergers, J., Spirito, A., & Donaldson, D. (1998). Reasons for adolescent suicide attempts: associations with psychological functioning. *Journal of the American Academy of Child and Adolescent Psychiatry, 37*, 1287–1293.

Bos, A. E. R., Huijding, J., Muris, P., Vogel, L. R. R., & Biesheuvel, J. (2010). Global, contingent and implicit self-esteem and psychopathological symptoms in adolescents. *Personality and Individual Differences, 48*, 311–316.

Bosson, J. K., Brown, R. P., Zeigler-Hill, V., & Swann, W. B., Jr. (2003). Self-enhancement tendencies among people with high explicit self-esteem: the moderating role of implicit self-esteem. *Self and Identity, 2*, 169–187.

Bosson, J. K., Swann, W. B., & Pennebaker, J. W. (2000). Stalking the perfect measure of implicit self-esteem: the blind men and the elephant revisited? *Journal of Personality and Social Psychology, 79*, 631–643.

Brage, D., & Meredith, W. (1994). A causal model of adolescent depression. *Journal of Psychology, 128*, 455–468.

Brandstädter, J., & Rothermund, K. (2002). The life-course dynamics of goal pursuit and goal adjustment: a two-process framework. *Developmental Review, 22*, 117–150.

Briñol, P., Petty, R. E., & Wheeler, S. C. (2006). Discrepancies between explicit and implicit self-concepts: consequences for information processing. *Journal of Personality and Social Psychology, 91*, 154–170.

Cacioppo, J. T., Hughes, M. E., Waite, L. J., Hawkley, L. C., & Thisted, R. A. (2006). Loneliness as a specific risk factor for depressive symptoms: cross-sectional and longitudinal analyses. *Psychology and Aging, 21*, 140–151.

Clark, D. A., Beck, A. T., & Alford, B. A. (1999). *Scientific foundations of cognitive theory and therapy for depression*. New York: Wiley.

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry, 60*, 837–844.

DeHart, T., Pelham, B. W., & Tennen, H. (2006). What lies beneath: Parenting style and implicit self-esteem. *Journal of Experimental Social Psychology, 42*, 1–17.

De Raedt, R., Schacht, R., Franck, E., & De Houwer, J. (2006). Self-esteem and depression revisited: implicit positive self-esteem in depressed patients? *Behaviour Research and Therapy, 44*, 1017–1028.

De Houwer, J., Teige-Mocigemba, S., Spruyt, A., & Moors, A. (2009). Implicit measures: a normative analysis and review. *Psychological Bulletin, 135*, 347–368.

Dijksterhuis, A. (2006). The emergence of implicit self-esteem. *Netherlands Journal of Psychology, 62*, 19–25.

Ellis, T. E. (2006). *Cognition and suicide: Theory, research, and therapy*. Washington, DC: American Psychological Association.

Epstein, S. (1994). Integration of the cognitive and the psychodynamic unconscious. *American Psychologist, 49*, 709–724.

Epstein, S., & Morling, B. (1995). Is the self motivated to do more than enhance and/or verify itself? In M. H. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp. 9–29) New York: Plenum.

Evans, E., Hawton, K., & Rodham, K. (2004). Factors associated with suicidal phenomena in adolescents: a systematic review of population-based studies. *Clinical Psychology Review, 24*, 957–979.

Evans, E., Hawton, K., Rodham, K., & Deeks, J. (2005). The prevalence of suicidal phenomena in adolescents: a systematic review of population-based studies. *Suicide and Life-Threatening Behavior, 35*, 239–249.

Ferguson, D. M., & Woodward, L. J. (2002). Mental health, educational, and social role outcomes of adolescents with depression. *Archives of General Psychiatry, 59*, 225–231.

Fergusson, D. M., Woodward, L. J., & Horwood, L. J. (2000). Risk factors and life processes associated with the onset of suicidal behaviour during adolescence and early adulthood. *Psychological Medicine, 30*, 23–39.

Fleming, J. E., & Offord, D. R. (1990). Epidemiology of childhood depressive disorders: a critical review. *Journal of the American Academy of Child and Adolescent Psychiatry, 29*, 572–580.

Franck, E., De Raedt, R., Barbez, C., & Rosseel, Y. (2008). Psychometric properties of the Dutch Rosenberg self-esteem scale. *Psychologica Belgica, 48*, 25–35.

Franck, E., De Raedt, R., & De Houwer, J. (2008). Activation of latent negative self-schemas as a cognitive vulnerability factor in depression: the potential role of implicit self-esteem. *Cognition & Emotion, 22*, 1588–1599.

Franck, E., De Raedt, R., & De Houwer, J. (2007). Implicit but not explicit self-esteem predicts future depressive symptomatology. *Behaviour Research and Therapy, 45*, 2448–2455.

Franck, E., De Raedt, R., Dereu, M., & Van den Abbeele, D. (2007). Implicit and explicit self-esteem in currently depressed individuals with and without suicidal ideation. *Behaviour Therapy and Experimental Psychiatry, 38*, 75–85.

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: an integrative review of implicit and explicit attitude change. *Psychological Bulletin, 132*, 692–731.

Gemar, M. C., Segal, Z. V., Sagrati, S., & Kennedy, S. J. (2001). Mood-induced changes on the implicit association test in recovered depressed patients. *Journal of Abnormal Psychology, 110*, 282–289.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychological Review, 102*, 4–27.

Hambleton, R. K. (1994). Guidelines for adapting educational and psychological tests: a progress report. *European Journal of Psychological Assessment, 10*, 229–244.

Harter, S. (1993). Causes and consequences of low self-esteem in children and adolescents. In R. F. Baumeister (Ed.), *Self-esteem: The puzzle of low self-regard* (pp. 87–116). New York: Plenum.

Heilbron, N., & Prinstein, M. J. (2010). Adolescent peer victimization, peer status, suicidal ideation, and nonsuicidal self-injury: Examining concurrent and longitudinal associations. *Merrill-Palmer Quarterly, 56*, 388–419.

Heinrich, L., & Gullone, E. (2006). The clinical significance of loneliness: a literature review. *Clinical Psychology Review, 26*, 695–718.

Higbee, K. R., & Roberts, R. E. (1994). Reliability and validity of a brief measure of loneliness with Anglo-American and Mexican American adolescents. *Hispanic Journal of Behavioral Sciences, 16*, 459–474.

Huijding, J., Bos, A. E. R., & Muris, P. (2011). Enhancing implicit self-esteem in children: Can a smile make you feel worthwhile? *Netherlands Journal of Psychology, 66*, 11–25.

Jordan, C. H., Spencer, S. J., Zanna, M. P., Hoshino-Browne, E., & Correll, J. (2003). Secure and defensive high self-esteem. *Journal of Personality and Social Psychology, 85*, 969–978.

Kerr, D. C. R., Owen, L. D., Pears, K. C., & Capaldi, D. M. (2008). Prevalence of suicidal ideation among boys and men assessed annually from ages 9 to 29 years. *Suicide and Life-Threatening Behavior, 38*, 390–402.

King, C. A. (1997). Suicidal behavior in adolescence. In R. Maris, M. Silverman, & S. Canetto (Eds.), *Review of suicidology*. New York: Guilford Press.

Koole, S. L., Dijksterhuis, A., & van Knippenberg, A. (2001). What's in a name: implicit self-esteem and the automatic self. *Journal of Personality and Social Psychology, 80*, 669–685.

Koole, S. L., & Pelham, B. W. (2003). On the nature of implicit self-esteem: the case of the name letter effect. In S. J. Spencer, S. Fein, M. P. Zanna, & J. M. Olson (Eds.), *Motivated social perception: The Ontario symposium, vol. 9* (pp. 93–116). Mahwah, NJ: Lawrence Erlbaum.

LeBel, E. P., & Gawronski, B. (2009). How to find what's in a name: scrutinizing the optimality of five scoring algorithms for the name-letter task. *European Journal of Personality, 23*, 85–106.

Mahon, N. E., Yarcheski, A., Yarcheski, T. J., Cannella, B. L., & Hanks, M. M. (2006). A meta-analytic study of predictors for loneliness during adolescence. *Nursing Research, 55*, 308–315.

Nuttin, J. M. (1985). Narcissism beyond Gestalt awareness: the name letter effect. *European Journal of Social Psychology, 15*, 353–361.

Pagliaro, L. A. (1995). Adolescent depression and suicide: a review and analysis of the current literature. *Canadian Journal of School Psychology, 11*, 191–201.

Peplau, L. A., & Perlman, D. (1982). Perspectives on loneliness. In L. A. Peplau, & D. Perlman (Eds.), *Loneliness: A sourcebook of current theory, research and therapy* (pp. 1–18). New York: Wiley.

Petersen, A. C., Compas, B. E., Brooks-Gunn, J., Stemmler, M., Ey, S., & Grant, K. E. (1993). Depression in adolescence. *American Psychologist, 48*, 155–168.

Petersen, A. C., Kennedy, R. E., & Sullivan, P. (1991). Coping with adolescence. In M. E. Colton, & S. Gore (Eds.), *Adolescent stress: Causes and consequences* (pp. 93–110). New York: Aldine de Gruyter.

Petty, R. E., Tormala, Z. L., Briñol, P., & Jarvis, W. B. G. (2006). Implicit ambivalence from attitude change: an exploration of the PAST model. *Journal of Personality and Social Psychology, 90*, 21–41.

Prinstein, M. J., & La Greca, A. M. (2002). Peer crowd affiliation and internalizing distress in childhood and adolescence: a longitudinal follow-back study. *Journal of Research on Adolescence, 12*, 325–351.

Reynolds, W. M. (1988). *Suicidal ideation questionnaire*. Odessa, FL: Psychological Assessment Resources.

Roberts, R. E., Lewinsohn, P. M., & Seeley, J. R. (1993). A brief measure of loneliness suitable for use with adolescents. *Psychological Reports, 72*, 1379–1391.

Robins, R. W., Trzesniewski, K. H., Tracy, J. L., Gosling, S. D., & Potter, J. (2002). Global self-esteem across the life span. *Psychology and Aging, 17*, 423–434.

Roefs, A., Huijding, J., Smulders, F. T., Macleod, C. M., de Jong, P. J., Wiers, R. W., et al. (2011). Implicit measures of association in psychopathology research. *Psychological Bulletin, 137*(1), 149–193.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Rudolph, A., Schröder-Abé, M., Schütz, A., Gregg, A. P., & Sedikides, C. (2008). Through a glass, less darkly? Reassessing convergent and discriminant validity in measures of implicit self-esteem. *European Journal of Psychological Assessment, 24,* 273—281.

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA loneliness scale: concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology, 39,* 472—480.

Schröder-Abé, M., Rudolph, A., & Schütz, A. (2007). High implicit self-esteem is not necessarily advantageous: discrepancies between explicit and implicit self-esteem and their relationship with anger expression and psychological health. *European Journal of Personality, 21,* 319—339.

Schröder-Abé, M., Rudolph, A., Wiesner, A., & Schütz, A. (2007). Self-esteem discrepancies and defensive reactions to social feedback. *International Journal of Psychology, 42,* 174—183.

Schulenberg, J. E., Bryant, A. L., & O'Malley, P. M. (2004). Taking hold of some kind of life: how developmental tasks relate to trajectories of well-being during the transition to adulthood. *Development & Psychopathology, 16,* 1119—1140.

Schwarz, N. (1990). Feelings as information: informational functions of affective states. In E. T. Higgins, & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of Social Behavior, vol 2* (pp. 527—561). New York: Guilford Press.

Shaffer, D., Fisher, P., Lucas, C. P., Dulcan, M. K., & Schwab-Stone, M. E. (2000). NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC-IV):

description, differences from previous versions, and reliability of some common diagnoses. *Journal of the American Academy of Child and Adolescent Psychiatry, 39,* 28—38.

Sippola, L. K., & Bukowski, W. M. (1999). Self, other, and loneliness from a developmental perspective. In K. J. Rotenberg, & S. Hymel (Eds.), *Loneliness in childhood and adolescence* (pp. 280—295). Cambridge, England: Cambridge University Press.

Swann, W. B., Jr., & Schroeder, D. G. (1995). The search for beauty and truth: a framework for understanding reactions to evaluations. *Personality and Social Psychology Bulletin, 21,* 1307—1318.

Teglasi, H., & Epstein, S. (1998). Temperament and personality theory: the perspective of cognitive-experiential self-theory. *School Psychology Review, 27,* 534—550.

Van der Does, A. J. W. (2002). *BDI-II-NL Handleiding. De Nederlandse versie van de Beck Depression Inventory* (2nd ed.). Lisse: Swets & Zeitlinger.

Watson, D. (1988). Intraindividual and interindividual analyses of positive and negative affect: their relation to health complaints, perceived stress, and daily activities. *Journal of Personality and Social Psychology, 54,* 1020—1030.

Wiers, R. W., Teachman, B. A., & De Houwer, J. (2007). Implicit cognitive processes in psychopathology: an introduction. *Journal of Behavior Therapy and Experimental Psychiatry, 38,* 95—104, [Editorial Special Issue on Implicit Cognitive Processes in Psychopathology].

Williams, J. M. G., & Pollock, L. R. (2000). The psychology of suicidal behaviour. In K. Hawton, & K. van Heeringen (Eds.), *The international handbook of suicide and attempted suicide* (pp. 79—93). Wiley.

Zeigler-Hill, V., & Terry, C. (2007). Perfectionism and explicit self-esteem: moderating role of implicit self-esteem. *Self and Identity, 6,* 137—153.