

# Implicit Self-Esteem: Nature, Assessment and Role in Psychopathologies

## Örtük Benlik Saygısı: Doğası, Değerlendirilmesi ve Psikopatolojilerdeki Rolü

Ahmet Hamdi İmamoğlu<sup>1</sup>, Yıldız Bilge<sup>1</sup>

### Abstract

The dual-process models explaining cognitive functioning paved the way for handling explicit and implicit dimensions of self-evaluations. In this direction, the focus has been on implicit self-esteem, which is one important element of unconscious self-evaluations. Many methods have been developed in which self-related stimuli are presented to measure implicit self-esteem. Thus, a new variable that can play a critical role in contexts such as personality, interpersonal relationships, and psychopathology has been defined in the literature on self-esteem, which is generally based on findings measured by self-reporting. The present review aims to shed light on the characteristics of implicit self-esteem, its role in psychopathologies, and traditional and second-generation measurement methods in this field. In this context, a review of studies focusing on the role of implicit self-assessment in different areas such as depression, anxiety, psychosis, and personality disorders is presented. Furthermore, the strengths and limitations of measurement methods are discussed. As a result, it has been observed that implicit self-esteem can play a central role in psychopathologies both in terms of its relation to explicit self-esteem and independently from it, however, studies on the subject have revealed inconsistent findings in some areas. Besides, it was determined that measurement methods are not strong enough in terms of psychometric properties and further studies are needed in this regard.

**Keywords:** Dual-process models, explicit self-esteem, implicit self-esteem, implicit cognition, psychopathology

### Öz

Bilişsel süreçlerin işleyişine ilişkin ikili süreç yaklaşımları, benliğe yönelik değerlendirmelerin açık ve örtük şekilde ele alınmasının önünü açmıştır. Bu doğrultuda benliğe yönelik tutumların ve benlikle ilişkili uyaranlara gösterilen tepkilerin bireylerin farkındalığının dışında kalan boyutuna odaklanılmıştır. Örtük benlik saygısı olarak adlandırılan bu boyutu ölçmek amacıyla benliğe ilişkin uyaranların sunulduğu pek çok yöntem geliştirilmiştir. Böylelikle genel olarak öz-bildirim yoluyla ölçülen bulgulara dayanan benlik saygısına ilişkin alanyazına, örtük ölçümler temelinde yeni bakış açıları getirilmiştir. Bu derleme çalışması örtük benlik saygısının kavramsal özelliklerine, psikopatolojilerdeki rolüne ve konuya ilişkin ölçme ve değerlendirme yaklaşımlarına ışık tutmayı amaçlamaktadır. Bu bağlamda depresyon, anksiyete, psikoz ve kişilik bozuklukları gibi farklı alanlarda örtük benlik değerlendirmelerinin rolüne odaklanan araştırmaların bir derlemesi sunulmuştur. Ayrıca geleneksel ve ikinci kuşak ölçüm yöntemlerinin güçlü yanları ve sınırlılıkları tartışılmıştır. Sonuç olarak örtük benlik saygısının psikopatolojilerde hem açık benlik saygısı ile ilişkisi bakımından hem de ondan bağımsız şekilde merkezi bir rol oynayabileceği ancak konuya ilişkin araştırmaların bazı alanlarda tutarsız bulgular ortaya koyduğu görülmüştür. Ek olarak ölçüm yöntemlerinin psikometrik özellikler bakımından yeterince güçlü olmadığı ve bu konuda ileri çalışmalara ihtiyaç duyulduğu tespit edilmiştir.

**Anahtar sözcükler:** İkili süreç modelleri, açık benlik saygısı, örtük benlik saygısı, örtük biliş, psikopatoloji

<sup>1</sup>University of Health Sciences Turkey, İstanbul, Turkey

✉ Ahmet Hamdi İmamoğlu, University of Health Sciences Turkey Health Sciences Institute, Department of Clinical Psychology, İstanbul, Turkey  
ahmet.imamoglu@sbu.edu.tr | 0000-0002-2176-7775

**SELF**-esteem is a concept that is central to an individual's daily experiences and basically corresponds to the individual's subjective evaluation of their own worth as a person and how he or she feels about themselves (Kernis 2003, Zeigler-Hill and Jordan 2010, Trzesniewski et al. 2013). This construct has important functions in transferring interpersonal information in social interactions and protecting the self in the face of adverse experiences (Zeigler-Hill 2013). At the same time, low self-esteem is considered as a diagnostic criterion or an associated feature of many psychopathologies (O'Brien et al. 2006), while high self-esteem is accepted as an important part of psychological functioning (Koch 2006). Although there seems to be a consensus on the importance of self-esteem, it is unclear whether it is consistently defined or not (Heatherton and Wyland 2003). For example, Brown and Marshall (2006) indicates that the concept is used at least in three different ways, which are a) as a personality variable that expresses the way people feel about themselves as a whole; (b) as self-evaluative reactions that arise in relation to certain experiences; (c) as perception of self-competence in different contexts. Moreover, the concept of self-esteem is handled as a one-dimensional structure loyal to its origin, while different components such as contingent and noncontingent, stable and unstable, global and domain-specific, also defined (Abdel-Khalek 2016). These conceptual distinctions, each growing in different ways, have resulted in a fairly comprehensive literature.

New approaches to self-esteem have emerged with the consideration of attitudes, stereotypes, and self-concept, which were thought to operate at the level of consciousness for many years, within the framework of implicit social cognitions (Greenwald and Banaji 1995). More than 20 measurement methods have been developed in the psychology literature in recent years to evaluate such implicit cognitions (Nosek et al. 2011). Some of these methods have also been used to examine self-esteem, which is the focal point of most studies on self-concept. In parallel with the methods developed, many important research questions have been raised that may be related to implicit self-evaluations such as "What is the role of implicit and explicit self-esteem in narcissism?" Thus, a wide international literature has been formed, although it has not been studied in our country yet (see Verkuyten 2005, Bos et al. 2010 for some studies in which Turks in the Netherlands are included in the sample group). In the present study, it was aimed to introduce the literature on implicit self-esteem, especially in the field of psychopathology. In this context, firstly, the basic features of the concept of implicit self-esteem and measurement and evaluation approaches used in this field are explained. Afterwards, a compilation of research examples examining implicit self-esteem based on depression, anxiety, psychotic symptoms, and personality disorders is presented. It is thought that the review provides an important framework for understanding the strengths and weaknesses in the measures of implicit self-esteem and how the concept can be handled in the context of psychopathologies. This framework is expected to inform researchers about the current literature on implicit self-esteem and mediate future studies. Thus, it will contribute to the use of measurement methods different from traditional approaches in our country

and to enrich the findings and research questions in the context of psychopathology. In addition, attention is drawn to the importance of handling implicit mental processes in clinical practice.

## Implicit and explicit self-esteem

Approaches that handle mental processes such as information processing and memory system in the context of dual-process models provide an important framework for understanding implicit self-esteem (Smith and Decoster 2000, Epstein 2006). The basic feature of dual process models is that they divide the mental processes underlying social judgments and behaviors into two general categories depending on whether they are processed in an automatic or controlled manner (Gawronski and Creighton 2013). According to these models, implicitness is often associated with processes that are claimed to function associative, automatic, rapid and effortlessly. On the other hand, there are processes of the mind that work in a controlled and conscious manner. In this context, explicit self-esteem corresponds to self-evaluations that the individual is aware of (Trzesniewski et al. 2013). The concept of implicit self-esteem, on the other hand, puts emphasis on the self-evaluations and responses to self-related stimuli operate outside of the awareness (Greenwald and Banaji 1995). At the same time, it is possible to consider this concept as an implicit attitude towards the self (Baccus et al. 2004, Dijksterhuis 2004). It has been suggested that early interactions (DeHart et al. 2006) and genetic factors (Cai and Luo 2017) may be effective in the development of implicit self-esteem, and there is some evidence that this construct develops before explicit self-esteem in the developmental process (Buhrmester et al. 2011). Moreover, many studies conducted in different cultures and different samples, it is observed that individuals' implicit attitudes towards self-related stimuli tend to be positive (Greenwald and Farnham 2000, Dunham et al. 2007, Falk et al. 2009, Vater et al. 2013).

Implicit self-esteem is one of the determinants of fragile self-esteem and therefore may play an important role in psychological functioning (Bosson et al. 2003). In this context, some studies in the literature focused on the extent to which implicit self-esteem differs from explicit self-esteem. While the interaction of low implicit self-esteem and high explicit self-esteem was conceptualized as *defensive self-esteem*; the interaction of high implicit self-esteem and low explicit self-esteem is conceptualized as *damaged self-esteem* (Kim and Moore 2019). In conclusion, in the current literature, implicit self-esteem seems to be associated with significant psychological outcomes, both independently of explicit self-esteem and in terms of its relationship with it (DeHart et al. 2013). However, there are many questions waiting to be answered regarding the nature of the concept, and most of these questions manifest themselves in methods aimed at measuring implicit self-esteem.

## Approaches to measuring implicit self-esteem

Most of the literature on self-esteem is based on studies in which self-esteem is directly measured (DeHart et al. 2013). In other words, these studies were structured on the

participants' evaluations about their own selves. In this method, which has some limitations despite its many advantages, it is not always possible for the participants to notice their attitudes towards themselves in every aspect or to reflect them correctly on the measurement tool (Zeigler-Hill and Jordan 2010). These approaches paved the way for focusing on new methods that could provide a more comprehensive explanation of self-esteem and measuring the concept with implicit methods. It is assumed that in implicit measurement procedures participants are unaware of what is being measured and cannot control the outcomes (Steinberg et al. 2007). On the other hand, it is claimed that this assumption does not work the same for every implicit measurement method, and that different measurement tools are implicit to different degrees (De Houwer et al. 2009). For example, while the implicitness in some methods involves the participants not being aware of the source of their reaction, in others it means that the result to be obtained from the measurement is uncontrollable. (Roefs et al. 2011). However, implicit measurements of implicit self-esteem are an alternative to direct measurement of self-esteem and enrich studies on this topic.

The first approaches developed to measure implicit self-esteem can be divided into two categories as indirect and association-based methods. (Karpinski and Steinberg 2006). Indirect methods are based on the observation of mechanisms that are thought to be an indicator of implicit self-attitudes. For example, in indirect methods, the fact that the individual likes the letters in his / her name more than other letters is considered as a sign of a positive self-perception (Koole and Pelham 2003). Association-based approaches are based on automatic associations between self-related stimuli and certain qualities. Details of the basic measurement methods used in the literature are given below.

### **Name-Letter Task**

This approach, which takes its origin from Nuttin's (1985) Name-Letter Effect, has been one of the most frequently used methods in measuring implicit self-esteem (Hoorens 2014). In the Name Letter Task (NLT), participants are asked how much they prefer the letters in the alphabet. The average of the points that the individual gives to the first and last letters in his name is calculated and the average score given by the individuals who do not have these letters in their names is deducted from this score. It is accepted that the participants have high implicit self-esteem to the extent that they prefer the letters in their names more than others (Buhrmester et al. 2011). Similar approaches have been used, albeit less frequently, in contexts such as birthday numbers (Bosson et al. 2000) and signature size (Stapel and Blanton 2004). In studies conducted on the psychometric properties of NLT with a population sample, reliability values varying between 0.50 and 0.68 were reported (Bosson et al. 2000, Rudolph et al. 2008, Gregg and Sedikides 2010, Krause et al. 2011).

### **Implicit Association Test**

The Implicit Association Test (IAT) is usually applied as a 7-step computer-based task. In the task, self-related and others-related words or good and bad attributes are presented,

respectively (Greenwald and Farnham 2000). Participants are expected to match these stimuli to their categories as quickly and accurately as possible. The difference between the response time in the stage where the self and good (others and bad) categories are presented together and the response time between the stage where the self and bad (others and good) categories are presented together is examined (see Greenwald et al. 2003, p. 214). In this way, it is evaluated how quickly and accurately the matching of self-related stimuli with good qualities occurs compared to matching with bad qualities. Although there are studies indicating that the psychometric properties of the IAT are insufficient (Gregg and Sedikides 2010), there are also many studies conducted in population samples that reported relatively acceptable (between .69 and .85) reliability levels (Bosson et al. 2000, Rudolph et al. 2008, Krause et al. 2011). Furthermore, in order to overcome the methodological limitations of the IAT in the following years, *Single-Category Implicit Association Test* (Karpinski and Steinman 2006), *Brief Implicit Association Test* (Sriram and Greenwald 2009) and *Personalized Implicit Association Test* (Olson and Fazio 2004) have also been developed.

## Go/no-go Association Test

Go/no-go Association Test (GNAT) is another association-based method developed by Nosek and Banaji (2001). There are 4 stages in the adapted version of the GNAT for measuring implicit self-esteem (Gregg and Sedikides 2010). During the test, binary categories (self-good, self-bad, not self-good, not self-bad) are given and participants are asked to press a certain key if the stimuli displayed for 600 milliseconds belong to these categories, otherwise they are asked to wait for the next word. It is assumed that when two categories with high connotation are given at the same time, the participants will be able to distinguish and therefore their performance will be better. The level of implicit self-esteem is determined based on the difference between the response accuracy between compatible (self-good) and incompatible (self-bad) blocks (see Gregg and Sedikides 2010, p. 149). Studies based on population samples show that GNAT has a similar reliability level (between .65 and .75) with IAT and NLT (Rudolph et al. 2008, Gregg and Sedikides 2010, Bar-Anan and Nosek 2014).

## Affective Priming Test

A classic Affective Priming Test (APT) involves a task in which participants categorize non-neutral target stimuli (e.g. peace) as positive or negative. In this task, various stimuli are presented to the participant for the purpose of priming before the target stimuli. According to the basic principle of the method, participants respond faster and more accurately to the target stimulus when a preliminary stimulus (e.g. happiness) is presented that qualitatively matches the target stimulus (Klauer and Musch 2003). Similarly, in an APT task used for the measurement of implicit self-esteem, participants are presented with priming stimuli about themselves and others, and are asked to categorize the following target stimuli as positive and negative. It is accepted that the self-related stimulus will facilitate the reaction

to the positive stimulus in individuals with high implicit self-esteem and the response time will be lower in these individuals (Krause et al. 2011). Although it was observed that APT did not reach sufficient reliability levels in some studies conducted in the population sample (Bosson et al. 2000), in a different version of APT, where the participants' faces were presented as a priming stimulus and some methodological improvements were made, it has been observed that (Krause et al. 2012) the validity (.75) was sufficient.

## **Affect Misattribution Procedure**

This procedure, which is based on the priming method similar to APT, was developed by Payne et al. (2005). When the method is used to measure implicit self-esteem, participants are presented with neutral, positive, negative, and self-referential stimuli. Participants are asked to ignore these stimuli and then rate their attitude towards the given Chinese letters from very negative to very positive. It is accepted that the stimulus presented about the self will be effective on the attribution of the Chinese character (Schreiber et al. 2012). The method is considered to be valid and reliable in measuring implicit attitudes (Payne and Lundberg 2014). Similarly, Schreiber et al. (2012) reported internal consistency coefficients of .73 in the healthy group and .86 in the group with a diagnosis of social anxiety disorder for this procedure used in the measurement of implicit self-esteem.

## **Extrinsic Affective Simon Task**

The test developed to measure implicit attitudes works on similar principles to the IAT (De Houwer, 2003). For the purpose of measuring implicit self-esteem, white and colored stimuli are presented to the participants during the procedure. Participants categorize the stimuli in white according to their meanings, using the keys identified as positive and negative. For blue or green target stimuli (e.g. participant's name), this process is performed according to the color of the stimuli (e.g. left button for blue, right button for green) using the same keys. The basic assumption here is that the participants will react by making associations between the target concepts and the attributes, even if the task is to focus on colors only. For example, when a blue stimulus about self is presented (because the stimulus should be categorized positively due to its color), the participants press the left button. When the same stimulus is presented in green, the participants press the right button. It is thought that individuals with high implicit self-esteem will react faster in the first situation (Teige et al. 2004). Some studies reveal that the test could not reach sufficient validity and reliability levels (De Houwer and De Bruycker 2007, Rudolph et al. 2008). Therefore, a new version was developed by De Houwer and De Bruycker (2007) based on the capitalization of the initial letter of the stimulus instead of the color of the target concepts. Thus, unlike the first version, it was aimed to facilitate the processing of the target stimulus in the mind. It was observed that this version gave better results (between .63 and .77) in terms of reliability in population sample (De Houwer and De Bruycker 2007, Rudolph et al. 2008, Krause et al. 2011).

## Implicit Relational Assessment Procedure

The Implicit Relational Assessment Procedure (IRAP) was developed on the basis of the Relational Framework Theory (Hayes et al. 2001), which is a behavioral-analytical approach in the field of language and cognition, and is based on the human ability to establish complex and random relationships between stimuli. In this procedure, stimulus associated with the self (e.g. participant's name) or not (e.g., another name) is presented in the upper corner of the screen, while stimuli expressing positive and negative qualities are included in the middle section. Participants are asked to evaluate the relationship between these two stimuli in terms of similarity and difference by using certain keys on the keyboard. The correct answer in these operations is determined by the rule given before each stage. For example, in a consistent condition, the words in the "Me" category should be evaluated as similar to "Positive" qualities (e.g. intelligent) and as different to "Negative" qualities (eg. insufficient). In the inconsistent condition, the opposite is considered valid. People with high implicit self-esteem are expected to have shorter reaction times in the consistent condition than in the inconsistent condition. (Vahey et al. 2009, Timko et al. 2010). Unlike a single score calculated in the IAT, different scores for each relationship (Me-Positive, Me-Negative, Not Me -Positive, Not Me - Negative) are calculated in IRAP. Thus, it is possible to differentiate attitudes towards self and others in more detail (Stewart et al.2017). While there is not enough research about the reliability of the self-esteem version of this procedure, values varying between.23 and.85 are reported for the measurement of other implicit attitudes (Golijani-Moghaddam et al. 2013). On the other hand, Relational Responding Task was developed by Houwer et al. (2015) based on a logic similar to the IRAP, and in a recent study, it was reported that this test has acceptable levels of validity and reliability in measuring implicit self-esteem (Dentale et al. 2020).

## Discussion on Measurement Methods

One of the most controversial points in the measurement of implicit attitudes is the psychometric properties of measurement tools (see Gawronski and De Houwer 2014). In terms of reliability and validity, implicit measurement tools are known to be weaker than direct measures (Fazio and Olson 2003), and these limitations are observed more frequently, especially in implicit self-esteem measures (Karpinski 2004). Although it is seen that the most frequently used methods (IAT and NLT) have acceptable levels of reliability in some studies, it is generally seen that satisfactory results have not been obtained yet. In addition, it is thought that there is no strong enough evidence for the validity of these tests (Buhrmester et al. 2011). Furthermore, it has been shown in many studies that methods measuring implicit self-esteem show low or nonsignificant correlations, both among themselves and with methods measuring explicit self-esteem (Bosson et al. 2000, Rudolph et al. 2008, Krause et al. 2011). This situation supports discriminant validity; however, it is thought to indicate limitations in terms of convergent validity (Rudolph et al. 2008). Although some

improvements have been observed in the validity and reliability levels of measurement tools with various methodological revisions in second-generation methods, more studies are needed on the subject.

In addition to psychometric properties, there are methodological problems in measuring implicit self-esteem and debates on the nature of the concept. In this context, it is seen that IAT, one of the oldest and popular methods, is at the center of the criticisms. One of these criticisms is that IAT is based on the power of associations between opposing concepts (Teige et al. 2004). Therefore, in an IAT task where others are positioned as the opposite of the self, the measurement of self-esteem includes associations with others as well as self (Karpinski 2004). Moreover, it has been suggested that the IAT is very sensitive to the context before and during the application and may be an indicator of situational self-esteem rather than a trait (Fazio and Olson 2003, Gawronski and Bodenhausen 2006, Buhrmester et al. 2011). It has been stated by some researchers that IAT can indicate associations with ideal self instead of actual self (Remue et al. 2013). Bosson (2006), on the other hand, points out that parallel to the views of Karpinski and Hilton (2001), the high association between self and positive concepts is not a reflection of self-esteem, but may simply be a result of past learning experiences about the two concepts. Although they are partially excluded from these criticisms of the IAT, second generation measurement tools are also likely to have some of these limitations.

Within the framework of the discussions on the subject, some researchers focus on the possibility of implicit self-esteem as a situational and easily changeable structure, based on low test-retest correlations (Buhrmester et al. 2011). For this reason, DeHart et al. (2006) suggest that implicit self-esteem should be considered as the average of more than one measurement. Some researchers argue about the implicit sense of the concept by showing that the measurement process is not completely closed to the awareness of the participants (Olson et al. 2007). Limitations of the convergent validity suggest that implicit self-esteem may be multidimensional or that related measurement tools may work through different cognitive processes (Zeigler-Hill and Jordan 2010). Buhrmester et al. (2011) claimed that some or all of the measurement methods might not actually measure implicit self-esteem. However, it has been argued that such discussions are not specific to the concept of implicit self-esteem but reflect a common problem in the study of implicit structures (Zeigler-Hill and Jordan 2010).

## **Implicit self-esteem and psychopathologies**

Many studies conducted in different samples reveal the strong relation between self-esteem and psychopathologies (Frankel and Myatt 1996, Guillon et al. 2003, Lynum et al. 2008, Lee and Hankin 2009, Orth et al. 2009, Bos et al. 2010). However, it is controversial whether self-esteem is a cause or a result of psychopathologies (Zeigler-Hill 2011). It is also thought that high self-esteem may have a “dark side” that can be associated with exceptions such as narcissism (Brown and Zeigler-Hill 2004) or aggression (Baumeister et al. 1996). In



this context, Zeigler-Hill (2013) emphasizes that self-esteem is not simply a “panacea” as it was once hoped, and the literature with over 35,000 publications reveals more complex dynamics on the subject. In order to better understand these dynamics, it is important to consider psychopathologies within the framework of implicit cognitions. Besides, it is accepted that implicit cognitions play a central role in various psychopathologies like explicit cognitions, and findings in the current literature revealed the necessity of examining these relationships (for a detailed review, see Teachman et al. 2019). For example, in a large-scale online study conducted by Werntz et al. (2016) with more than 60,000 participants, it was reported that implicit cognitions predicted measures of depression, anxiety, alcohol and eating behaviors beyond explicit cognitions. Research on implicit self-esteem, which can be considered as a part of implicit cognitions, in terms of psychopathologies and personality traits have increased since the 2000s, and a review of these studies is presented below. Most of the studies presented in the following part of the review are based on the findings of IAT (approximately 65%) and NLT (approximately 20%). The second-generation measurement methods mentioned above have been included in a limited number of studies.

## **Implicit self-esteem and depression**

Departing from the views on the impairment of processes such as self-evaluation, perception and memory in depression, many studies consider implicit cognitions in this context. (Teachmen et al. 2019). According to the meta-analysis conducted by Phillips et al. (2010), the implicit self-cognition, of which implicit self-esteem is a part, explains 5.3% of the variance in depressive symptoms. However, studies conducted on implicit self-esteem generally reveal inconsistent results. In a study, a group of patients who had a depressive episode for the first time, who were in a recurrent depressive episode, and who were in remission, and a healthy control group with no history of depression were compared in terms of implicit self-esteem (Risch et al. 2010). The results indicate that patients with only active depression symptoms have lower implicit self-esteem compared to healthy controls. In the patient group in remission, a lower level of implicit self-esteem was observed in individuals who had 3 or more depressive episodes compared to those who had less than 3 depressive episodes. In a similar study, it was found that among individuals with a diagnosis of depression, only those with comorbid anxiety disorder had lower implicit self-esteem than healthy controls (van Tuijl et al. 2016). Romero et al. (2016) reported that individuals with major depression had lower both implicit and explicit self-esteem scores than those in the healthy group, and that explicit self-esteem mediated the relationship between implicit self-esteem and memory bias related to depression. Haeffel et al. (2007) observed that only the implicit self-esteem predicted the emotional responses of participants to stressors. In the same study, depressive symptoms under stress were predicted by both explicit and implicit self-esteem, but when two variables entered the equation at the same time, only explicit self-esteem remained significant. On the other hand, in some studies, no difference was found between healthy groups and depressive patients in terms of implicit self-esteem (Cai 2003,

de Raedt et al. 2006). Similarly, Franck et al. (2007) reported that a high level of implicit self-esteem predicted depression symptoms during the 6-month follow-up period, but these findings were not repeated in other studies (Bos et al. 2010, van Tuijl et al. 2014). It is argued that inconsistent findings obtained from studies on this subject may be the result of different profiles of patients (e.g. comorbidities), different measurement methods (e.g. IAT vs NLT), and different manipulation (e.g. mood triggering) procedures (van Randenborgh et al. 2016, Teachmen et al. 2019).

Studies focusing on the extent to which implicit self-esteem differs from explicit self-esteem tend to give more consistent results. In this context, it has been reported that especially damaged self-esteem (low explicit self-esteem + high implicit self-esteem) is associated with depression symptoms (Creemers et al. 2012, 2013, Pavlickova et al. 2014, Smeijers et al. 2017, Kim and Moore 2019). Some researchers have been able to observe such a result only in individuals diagnosed with depression who have high suicidal ideations (Franck et al. 2007). Although the concept of damaged self-esteem seems promising in producing consistent results in the context of depression, the results should be interpreted carefully. It is argued that the relevant findings may be a result of the strong relationship between explicit self-esteem and depression (van Tuijl et al. 2016, Kim and Moore 2019). In a study conducted within the context of an integrated treatment program consisting of psychodynamic and cognitive-behavioral components (Wegener et al. 2015), the treatment processes of 45 patients diagnosed with major depression were examined in terms of depressive symptoms and changes in self-esteem. At the end of the 8-week treatment period, depressive symptoms decreased and explicit self-esteem increased. However, implicit self-esteem decreased as well. This has been attributed to the decrease in the compensatory role of implicit self-esteem with the treatment process. Therefore, it is possible to consider the relationship between high level implicit self-esteem and depression in this context. In another recent study, it was observed that patients with major depression with damaged self-esteem had a worse course after cognitive-behavioral therapy (Penedo et al. 2020). In a longitudinal study focusing on early implicit cognitions, measurements were taken from participants at age 5 and 9. The extent to which the implicit self-esteem measured at the fifth year was higher than the explicit self-esteem measured at the ninth year was found to be related to the depression symptoms at the ninth year (Cvencek et al. 2020).

## **Anxiety**

Most of the findings regarding the relationship between implicit self-esteem and anxiety are based on social anxiety research. Ritter et al. (2013) examined the relationship between cognitive-behavioral therapy and psychodynamic therapy with self-esteem in individuals with social anxiety disorder. It was observed that both explicit and implicit self-esteem increased significantly in both treatment groups compared to the control group, but unlike explicit self-esteem, implicit self-esteem was not associated with improvement in symptoms of depression and social anxiety. Hiller et al. (2017) asked 45 participants with social anxiety

disorder to speak on a political topic in front of the judges and compared the findings on self-esteem with those of the healthy group. In the speaking condition, individuals with a diagnosis of social anxiety disorder showed a lower level of implicit self-esteem compared to the healthy group. No such difference was observed in the non-speaking condition. In another study conducted on adolescents (de Jong et al. 2012), it was reported that the relationship between low-level implicit self-esteem and social anxiety symptoms was stronger in girls with low explicit self-esteem. No such result was achieved for boys. In some studies (Glashouwer et al. 2013, Ritter et al. 2013), it was observed that the group diagnosed with social anxiety disorder showed a lower level of implicit self-esteem than healthy controls. When implicit self-esteem was examined in the context of social status by Gilboa-Schechtman et al. (2017), it was found that the difference between the groups was greater. Similarly, in a study conducted by presenting stimuli related to social status in a non-clinical sample, it was observed that low implicit self-esteem predicted social anxiety symptoms (Gilboa-Schechtman et al. 2013). On the other hand, in a study where Tanner et al. (2006) compared the groups with high and low levels of social anxiety, it was found that both groups had positive attitudes towards the self, but this situation was at a lower level in the group with high social anxiety. Schreiber et al. (2012) demonstrated in their study that social anxiety symptoms were associated with damaged self-esteem in participants who encountered a social threat. Researchers thought that this finding might be related to an implicit defense response to threats. In some studies, no significant relationship was found between implicit self-esteem and social anxiety symptoms (van Tuijl et al. 2014).

## Psychotic disorders

Bentall et al. (2001) argue that patients with persecutory delusions have implicit negative attitudes towards the self and attribute threatening experiences to others in order to prevent these attitudes from being activated. Therefore, a limited number of studies in the context of psychosis focused on the defensive function of persecutory delusions and it was assumed that self-esteem might be low in implicit measurements and normal or high in explicit measurements (Kesting et al. 2011). Some studies seem to support this approach. For example, in the study of McKay et al. (2007), the patient group with persecutory delusions reported a lower level of implicit self-esteem compared to the group in remission and the healthy group; however, no such difference was observed between the groups for explicit self-esteem. In the study of Valiente et al. (2011) comparing the paranoid group with persecutory delusions and the group diagnosed with depression and the healthy control group, it was observed that the paranoid patient group had lower implicit self-esteem compared to the healthy control group. There was no significant difference between the patient groups with paranoid symptoms and depression. Moritz et al. (2006) reported that both explicit and implicit self-esteem was lower in schizophrenic patients with persecutory delusion compared to the healthy group. In the same study, it was observed that patients with acute delusions had a higher level of explicit self-esteem compared to the group in remission, and a lower

level of implicit self-esteem compared to the depressed group. On the other hand, some studies do not support the view that persecution delusions have a defensive function. In the study of Kesting et al. (2011), it was revealed that patients with persecutory delusions (acute and remission) and patients with a diagnosis of depression and the healthy group did not differ in terms of implicit self-esteem. It was also found that delusions were not related to discrepancy in explicit and implicit self-esteem. Vazquez et al. (2008) reported that implicit and explicit self-esteem did not differ significantly in the delusional patient group. Similarly, MacKinnon et al. (2011) reported that patients with persecutory delusions had positive implicit self-esteem and did not differ from the control group. In another study conducted with a healthy sample, it was observed that paranoia was not related to implicit self-esteem (Cicero and Kerns 2011). In a recent study, paranoid symptoms of both individuals at risk for psychosis and patients who had a psychotic attack for the first time were not found to be associated with implicit self-esteem (Monsonet et al. 2020). As a result, findings on the subject are inconsistent due to possible effect of methodological incompatibilities and the small sample sizes, and it is noted that the defensive function of persecution delusions is not supported enough by studies in the context of implicit self-esteem (Kesting and Lincoln 2013).

## Personality traits

Narcissism is at the top of the research topics in which implicit self-esteem is discussed in the context of personality traits. In order to test the mask model (Kuchynka and Bosson 2018), which suggests that individuals with a narcissistic personality organization may have feelings of worthlessness under their grandiosity, the concept of implicit self-esteem provides an important field of research. In some studies, the participants who reported the highest level of narcissistic personality traits exhibited defensive (high explicit self-esteem + low implicit self-esteem) self-esteem (Jordan et al. 2003, Zeigler-Hill 2006). Although these limited number of studies support the mask model, it was observed that such a relationship was not revealed in the meta-analysis study conducted by Bosson et al. (2008). No such finding has also been found in more recent studies (Marissen et al. 2016, Mota et al. 2019). Therefore, the idea that individuals with narcissistic personality organization have negative self-perceptions “deep down inside” has not yet been confirmed, at least within the scope of studies involving implicit self-esteem.

Gregg and Sedikides (2010) found that rather than the interaction of explicit and implicit self-esteem, only low implicit self-esteem was associated with narcissistic traits. Vater et al. (2013) reported that patients with narcissistic personality disorder have a higher level of implicit self-esteem compared to patients with borderline personality disorder. In the same study, no such difference was found between the healthy control group and patients diagnosed with narcissistic personality disorder; however, it was observed that as the damaged self-esteem increased, so did the narcissistic psychopathology. On the other hand, in Brown and Brunell's (2017) study, grandiose narcissistic traits were found to be associated

with high levels of implicit and explicit self-esteem. Di Pierro et al. (2016) concluded that grandiose narcissism is associated with a high level of explicit self-esteem in individuals with moderate and high levels of implicit self-esteem. Vulnerable narcissism, on the other hand, was found to be associated with a low level of explicit self-esteem, apart from implicit self-esteem. As a result, it is seen that models trying to explain the role of implicit self-esteem in narcissism are far from giving consistent results for now.

Studies examining the relationship of implicit self-esteem with other personality organizations are limited. For example, Robinson and Meier (2005) reported that low implicit self-esteem is associated with high levels of neuroticism. Winter et al. (2018) found that the group with borderline personality disorder showed a lower level of implicit and explicit self-esteem compared to healthy controls. Vater et al. (2010) observed that some symptoms increased in patients diagnosed with borderline personality disorder as the level of both defensive and damaged self-esteem increased. In other words, discrepancies between implicit and explicit self-esteem was found to be associated with borderline personality disorder symptoms such as impairment of self-perception, aggression, and dysphoria in both directions.

## **Other studies related to implicit self-esteem**

Although other contexts in which implicit self-esteem is examined have not yet expanded enough, they contain important findings revealing the role of implicit self-esteem in psychological functioning. For example, Park et al. (2014) observed higher levels of implicit self-esteem in patients with current manic episode compared to euthymic patients. Robinson et al. (2006) found that low self-esteem is associated with increased somatic symptoms. Lannoy et al. (2020) reported that high levels of implicit self-esteem predicted dangerous mobile phone use when demographic variables and mobile phone addiction were controlled. Moreover, in some studies, individuals diagnosed with body dysformic disorder (Buhlmann et al. 2008, Buhlmann et al. 2009) and attention deficit and hyperactivity disorder (Kurman et al. 2015) were found to have lower implicit self-esteem compared to the healthy group. There are also studies showing that damaged self-esteem is associated with eating disorder (Cockerham et al. 2009) and non-epileptic psychogenic seizures (Dimaro et al. 2015).

When examined in the context of interpersonal relationships, Schröder-Abe et al. (2007) reported that discrepancies between implicit and explicit self-esteem is related to defensive attitudes in both directions. Stewart et al. (2017) compared socially excluded and non-excluded groups in terms of implicit self-esteem. It was found that both groups had positive implicit self-esteem before the game, but there was a significant decrease in the implicit self-esteem of the excluded group after the game. As a result of a more detailed examination, the researchers suggested that this decline occurred as a result of the strengthening of the associations between negative and self-related stimuli and between positive and other-related stimuli. No change was observed in the association between the self and positive stimuli.

Ratliff and Oishi (2013) reported a lower level of implicit self-esteem in men compared to the situation where the romantic partner failed in a task. No such difference was found in women. The researchers explained this situation by the fact that male participants perceived their partners' success as a threat based on social comparison. Stieger et al. (2012) observed low explicit self-esteem in men with high jealousy, and high implicit self-esteem in women with high jealousy. In another study, it was concluded that individuals with low implicit self-esteem consume more alcohol when they have negative interpersonal experiences, and those with high implicit self-esteem consume more alcohol when they have positive interpersonal experiences (DeHart et al. 2009). Borton et al. (2017) compared the responses of individuals with defensive self-esteem and individuals with secure self-esteem (high implicit self-esteem + high explicit self-esteem) to social rejection. It was observed that individuals with defensive self-esteem made more mistakes regarding other stimuli in the task in which a rejecting facial expression was presented, and it was concluded that rejection sensitivity might be higher in these individuals. These studies in different contexts are thought to guide future research in understanding the role of implicit self-esteem.

## Conclusion

The tendency of the psychoanalysis to look beyond the apparent and the attempts to examine mental processes that operate outside of awareness are still effective on contemporary approaches. Today, although not seen as a direct path to unconscious, implicit cognition research provides an important perspective comprehending mental functioning outside of awareness. The handling of implicit attitudes towards self has resulted in the emergence of a new research field that can provide new perspectives in understanding many psychopathologies and personality traits. It is seen that some of the existing studies are already successful in this regard and shed light on the role of implicit self-esteem in psychopathologies. When the literature is examined, it is understood that implicit self-esteem can have important functions such as protecting the self and emotion regulation, just like a defense mechanism. Besides, implicit self-esteem can increase by serving a compensatory function in the face of threat (Rudman et al. 2007). Impairments in such functions can be a risk factor in psychopathologies such as depression, anxiety, psychosis or personality disorders, or may arise as a result of these. In addition, it is understood that the discrepancy between implicit and explicit self-esteem may also be an indicator of psychological functionality. It is possible that such a differentiation creates a conflict between the ideal and actual selves of individuals and thus affects psychological adjustment. On the other hand, when compared to studies on explicit self-esteem, there are problems in repeating the findings related to implicit self-esteem. For example, although the models of narcissism and persecutory delusions seem 'exciting' at first, they could not be supported enough on the basis of implicit self-esteem. Similarly, a significant portion of the findings related to depression and anxiety are observed to be inconsistent. The fact that the research findings are based on measurement methods that claim to measure the same structure but

have low relationships with each other also makes it difficult to interpret the findings. It seems that the concept of implicit self-esteem and the measurement methods in this field are more complex than thought. The fragile nature of implicit self-esteem in the face of daily life events (DeHart and Pelham 2007) and self-threats (Jones et al. 2002) is thought to have the largest share in this confusion. Nevertheless, the literature on self-esteem continues to grow and the validity and reliability of new measurement methods are being studied (Dentale et al. 2020). Buhrmester et al. (2011) emphasize the importance of insisting on these attempts. According to the authors, similar to the point reached by the Thematic Apperception Test, which was once criticized for its validity, measurement methods for implicit self-esteem are also open to improvement. Besides, evidence showing that the concept of implicit self-esteem can be valid on the basis of current approaches such as neuropsychology has started to be obtained (Izuma et al. 2018).

Finally, it is seen that implicit self-esteem constitutes a small part of the literature on implicit cognitions. The flexible structure of measurement methods provides the opportunity to change the stimuli used according to psychopathologies. For example, in some studies conducted with borderline patients, self-related stimuli were presented with words expressing shame (Rüsch et al. 2007), disgust (Rüsch et al. 2011), and neuroticism (Dukalski et al. 2019). In many other studies, implicit attitudes specific to different psychopathologies such as phobias, post-traumatic stress disorder, obsessive-compulsive disorder, and alcohol use disorder beyond self-esteem have been examined (Teachmen et al. 2019). Thus, the aforementioned implicit measurement methods are not limited to self-esteem and offer an open-ended research field for researchers interested in the subject. In future studies, it is recommended to focus on eliminating the methodological limitations in this field and improving the psychometric properties of measurement methods. It is also thought that understanding the role of implicit cognitions in psychopathologies, beyond explicit cognitions, may contribute significantly to diagnosis and treatment procedures.

## References

- Abdel-Khalek AM (2016) Introduction to the psychology of self-esteem. In *Self-esteem: Perspectives, Influences, and Improvement Strategies* (Ed F Holloway):1-23. New York, Nova Science.
- Baccus JR, Baldwin MW, Packer DJ (2004) Increasing implicit self-esteem through classical conditioning. *Psychol Sci*, 15:498-502.
- Bar-Anan Y, Nosek BA (2014) A comparative investigation of seven indirect attitude measures. *Behav Res Methods*, 46:668-688.
- Baumeister RF, Smart L, Boden JM (1996) Relation of threatened egotism to violence and aggression: The dark side of high self-esteem. *Psychol Rev*, 103:5-33.
- Bentall RP, Corcoran R, Howard R, Blackwood N, Kinderman P (2001) Persecutory delusions: a review and theoretical integration. *Clin Psychol Rev*, 21:1143-1192.
- Borton JL, Oakes MA, Lengieza M (2017) Fixated on rejection: Attentional blindness following socially rejecting faces in people with defensive self-esteem. *Self Identity*, 16:62-81.
- Bos AE, Huijding J, Muris P, Vogel LR, Biesheuvel J (2010) Global, contingent, and implicit self-esteem and psychopathological symptoms in adolescents. *Pers Individ Dif*, 48:311-316.
- Bosson JK (2006) Conceptualization, measurement, and functioning of nonconscious self-esteem. In *Self-esteem issues and answers: A sourcebook of current perspectives* (Ed. MH Kernis):53-59. New York, Psychology Press.

- Bosson JK, Brown RP, Zeigler-Hill V, Swann WB (2003) Self-enhancement tendencies among people with high explicit self-esteem: The moderating role of implicit self-esteem. *Self Identity*, 2:169-187.
- Bosson JK, Lakey CE, Campbell WK, Zeigler-Hill V, Jordan CH, Kernis MH (2008) Untangling the links between narcissism and self-esteem: A theoretical and empirical review. *Soc Personal Psychol Compass*, 2:1415-1439.
- Bosson JK, Swann Jr WB, Pennebaker JW (2000) Stalking the perfect measure of implicit self-esteem: The blind men and the elephant revisited? *J Pers Soc Psychol*, 79:631-643.
- Brown AA, Brunell AB (2017) The "modest mask"? An investigation of vulnerable narcissists' implicit self-esteem. *Pers Individ Dif*, 119:160-167.
- Brown JD, Marshall MA (2006) The three faces of self-esteem. In *Self-esteem issues and answers: A sourcebook of current perspectives* (Ed. MH Kernis):4-9. New York, Psychology Press.
- Brown RP, Zeigler-Hill V (2004) Narcissism and the non-equivalence of self-esteem measures: A matter of dominance? *J Res Pers*, 38:585-592.
- Buhlmann U, Teachman BA, Gerbershagen A, Kikul J, Rief W (2008) Implicit and explicit self-esteem and attractiveness beliefs among individuals with body dysmorphic disorder. *Cognit Ther and Res*, 32:213-225.
- Buhlmann U, Teachman BA, Naumann E, Fehlinger T, Rief W (2009) The meaning of beauty: Implicit and explicit self-esteem and attractiveness beliefs in body dysmorphic disorder. *J Anxiety Disord*, 23:694-702.
- Buhrmester MD, Blanton H, Swann Jr WB (2011) Implicit self-esteem: Nature, measurement, and a new way forward. *J Pers Soc Psychol*, 100:365-385.
- Cai H (2003) Explicit self-esteem, implicit self-esteem, and depression. *Chinese Mental Health Journal*, 17:331-336.
- Cai H, Luo YL (2017) The heritability of implicit self-esteem: A twin study. *Pers Individ Dif*, 119:249-251.
- Cicero DC, Kerns JG (2011) Is paranoia a defence against or an expression of low self-esteem? *Eur J Pers*, 25:326-335.
- Cockerham E, Stopa L, Bell L, Gregg A (2009) Implicit self-esteem in bulimia nervosa. *J Behav Ther Exp Psychiatry*, 40:265-273.
- Creemers DH, Scholte R, Engels R, Prinsteijn M, Wiers RW (2012) Implicit and explicit self-esteem as concurrent predictors of suicidal ideation, depressive symptoms, and loneliness. *J Behav Ther Exp Psychiatry*, 43:638-646.
- Creemers D, Scholte R, Engels R, Prinsteijn M, Wiers RW (2013) Damaged self-esteem is associated with internalizing problems. *Front Psychol*, 4:1-7.
- Cvencek D, Greenwald AG, McLaughlin KA, Meltzoff AN (2020) Early implicit-explicit discrepancies in self-esteem as correlates of childhood depressive symptoms. *J Exp Child Psychol*, 200:104962.
- DeHart T, Pelham BW (2007) Fluctuations in state implicit self-esteem in response to daily negative events. *J Exp Soc Psychol*, 43:157-165.
- DeHart T, Pelham BW, Tennen H (2006) What lies beneath: Parenting style and implicit self-esteem. *J Exp Soc Psychol*, 42: 1-17.
- Dehart T, Pena R, Tennen H (2013) The development of explicit and implicit self-esteem and their role in psychological adjustment. In *Self-esteem* (Ed V Zeigler-Hill):99-123. New York, Psychology Press.
- DeHart T, Tennen H, Armeli S, Todd M, Mohr C (2009) A diary study of implicit self-esteem, interpersonal interactions, and alcohol consumption in college students. *J Exp Soc Psychol*, 45:720-730.
- De Houwer J (2003) The extrinsic affective Simon task. *Exp Psychol*, 50:77-85.
- De Houwer J, De Bruycker E (2007) The implicit association test outperforms the extrinsic affective Simon task as an implicit measure of inter-individual differences in attitudes. *Br J Soc Psychol*, 46:401-421.
- De Houwer J, Heider N, Spruyt A, Roets A, Hughes S (2015) The relational responding task: toward a new implicit measure of beliefs. *Front Psychology*, 6:319.
- De Houwer J, Teige-Mocigemba S, Spruyt A, Moors A (2009) Implicit measures: A normative analysis and review. *Psychol Bull*, 135:347-368.
- De Jong PJ, Sportel BE, De Hullu E, Nauta MH (2012) Co-occurrence of social anxiety and depression symptoms in adolescence: Differential links with implicit and explicit self-esteem? *Psychol Med*, 42:475-484.
- Dentale F, Vecchione M, Ghezzi V, Spagnolo G, Szemeyei E, Barbaranelli C (2020) Beyond an associative conception of automatic self-evaluations: Applying the relational responding task to measure self-esteem. *Psychol Rec*, 70:227-242.
- De Raedt R, Schacht R, Franck E, De Houwer J (2006) Self-esteem and depression revisited: Implicit positive self-esteem in depressed patients? *Behav Res Ther*, 44:1017-1028.



- Dijksterhuis AP (2004). I like myself but I don't know why: Enhancing implicit self-esteem by subliminal evaluative conditioning. *J Pers Soc Psychol*, 86:345-355.
- Dimaro LV, Roberts NA, Moghaddam NG, Dawson DL, Brown I, Reuber M (2015) Implicit and explicit self-esteem discrepancies in people with psychogenic nonepileptic seizures. *Epilepsy Behav*, 46:109-117.
- Di Pierro R, Mattavelli S, Gallucci M (2016) Narcissistic traits and explicit self-esteem: The moderating role of implicit self-view. *Front Psychol*, 7:1-9.
- Dukalski B, Suslow T, Egloff B, Kersting A, Donges US (2019) Implicit and explicit self-concept of neuroticism in borderline personality disorder. *Nord J Psychiatry*, 73:159-168.
- Dunham Y, Baron AS, Banaji MR (2007) Children and social groups: A developmental analysis of implicit consistency in Hispanic Americans. *Self Identity*, 6:238-255.
- Epstein S (2006) Conscious and unconscious self-esteem from the perspective of cognitive-experiential self-theory. In *Self-esteem issues and answers: A sourcebook of current perspectives* (Ed. MH Kernis):69-76. New York, Psychology Press.
- Falk CF, Heine SJ, Yuki M, Takemura K (2009) Why do Westerners self-enhance more than East Asians? *Eur J Pers*, 23:183-203.
- Fazio RH, Olson MA (2003) Implicit measures in social cognition research: Their meaning and use. *Annu Rev Psychol*, 54:297-327.
- Franck E, De Raedt R, De Houwer J (2007) Implicit but not explicit self-esteem predicts future depressive symptomatology. *Behav Res Ther*, 45:2448-2455.
- Franck E, De Raedt R, De Houwer J (2008) Activation of latent self-schemas as a cognitive vulnerability factor for depression: The potential role of implicit self-esteem. *Cogn Emot*, 22:1588-1599.
- 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. *J Behav Ther Exp Psychiatry*, 38:75-85.
- Frankel F, Myatt R (1996) Self-esteem, social competence, and psychopathology in boys without friends. *Pers Individ Dif*, 20:401-407.
- Gawronski B, Bodenhausen GV (2006) Associative and propositional processes in evaluation: an integrative review of implicit and explicit attitude change. *Psychol Bull*, 132:692-731.
- Gawronski B, Creighton LA (2013) Dual process theories. In *Oxford library of psychology. The Oxford handbook of social cognition* (Ed DE Carlston):282-312. New York, Oxford University Press.
- Gawronski B, De Houwer J (2014) Implicit measures in social and personality psychology. In *Handbook of research methods in social and personality psychology* (Eds HT Reis, CM Judd):283-310. New York, Cambridge University Press.
- Gilboa-Schechtman E, Friedman L, Helpman L, Kananov J (2013) Self-evaluations of social rank and affiliation in social anxiety: Explicit and implicit measures. *Int J Cogn Ther*, 6:208-220.
- Gilboa-Schechtman E, Keshet H, Livne T, Berger U, Zabag R, Hermesh H et al. (2017) Explicit and implicit self-evaluations in social anxiety disorder. *J Abnorm Psychol*, 126:285-290.
- Glashouwer KA, Vroling MS, de Jong PJ, Lange WG, de Keijser J (2013) Low implicit self-esteem and dysfunctional automatic associations in social anxiety disorder. *J Behav Ther Exp Psychiatry*, 44:262-270.
- Golijani-Moghaddam N, Hart A, Dawson DL (2013) The implicit relational assessment procedure: Emerging reliability and validity data. *J Contextual Behav Sci*, 2:105-119.
- Greenwald AG, Banaji MR (1995) Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychol Rev*, 102:4-27.
- Greenwald AG, Farnham SD (2000) Using the implicit association test to measure self-esteem and self-concept. *J Pers Soc Psychol*, 79:1022-1038.
- Greenwald AG, Nosek BA, Banaji MR (2003) Understanding and using the implicit association test: An improved scoring algorithm. *J Pers Soc Psychol*, 85:197-216.
- Gregg AP, Sedikides C (2010) Narcissistic fragility: Rethinking its links to explicit and implicit self-esteem. *Self Identity*, 9:142-161.
- Guillon MS, Crocq MA, Bailey PE (2003) The relationship between self-esteem and psychiatric disorders in adolescents. *Eur Psychiatry*, 18:59-62.
- Hayes SC, Barnes-Holmes D, Roche B (2001). *Relational frame theory: A post-Skinnerian account of human language and cognition*. New York, Plenum Press.
- Haefel GJ, Abramson LY, Brazy PC, Shah JY, Teachman BA, Nosek BA (2007) Explicit and implicit cognition: A preliminary test of a dual-process theory of cognitive vulnerability to depression. *Behav Res Ther*, 45:1155-1167.
- Heatherton TF, Wyland CL (2003) Assessing self-esteem. In *Positive psychological assessment: A handbook of models and measure* (Eds SJ Lopez, CR Snyder):219-233. Washington, American Psychological Association.

- Hiller TS, Steffens MC, Ritter V, Stangier U (2017) On the context dependency of implicit self-esteem in social anxiety disorder. *J Behav Ther Exp Psychiatry*, 57:118-125.
- Hoorens V (2014) What's really in a name-letter effect? Name-letter preferences as indirect measures of self-esteem. *Eur Rev Soc Psychol*, 25:228-262.
- Izuma K, Kennedy K, Fitzjohn A, Sedikides C, Shibata K (2018) Neural activity in the reward-related brain regions predicts implicit self-esteem: A novel validity test of psychological measures using neuroimaging. *J Pers Soc Psychol*, 114:343-357.
- Jones JT, Pelham BW, Mirenberg MC, Hetts JJ (2002) Name letter preferences are not merely mere exposure: Implicit egotism as self-regulation. *J Exp Soc Psychol*, 38:170-177.
- Jordan CH, Spencer SJ, Zanna MP, Hoshino-Browne E, Correll J (2003) Secure and defensive high self-esteem. *J Pers Soc Psychol*, 85:969-978.
- Karpinski A (2004) Measuring self-esteem using the Implicit Association Test: The role of the other. *Pers Soc Psychol Bull*, 30:22-34.
- Karpinski A, Hilton JL (2001) Attitudes and the implicit association test. *J Pers Soc Psychol*, 81:774-788.
- Karpinski A, Steinberg JA (2006) Implicit and explicit self-esteem: Theoretical and methodological refinements. In *Self-esteem issues and answers: A sourcebook of current perspectives* (Ed. MH Kernis):102-109. New York, Psychology Press.
- Karpinski A, Steinman RB (2006) The single category implicit association test as a measure of implicit social cognition. *J Pers Soc Psychol*, 91:16-32.
- Kernis MH (2003) Toward a conceptualization of optimal self-esteem. *Psychol Inq*, 14:1-26.
- Kesting ML, Lincoln TM (2013) The relevance of self-esteem and self-schemas to persecutory delusions: A systematic review. *Compr Psychiatry*, 54:766-789.
- Kesting ML, Mehl S, Rief W, Lindenmeyer J, Lincoln TM (2011) When paranoia fails to enhance self-esteem: explicit and implicit self-esteem and its discrepancy in patients with persecutory delusions compared to depressed and healthy controls. *Psychiatry Res*, 186:197-202.
- Kim HS, Moore MT (2019) Symptoms of depression and the discrepancy between implicit and explicit self-esteem. *J Behav Ther Exp Psychiatry*, 63:1-5.
- Klauer KC, Musch J (2003) Affective priming: Findings and theories. In *The psychology of evaluation: Affective processes in cognition and emotion* (Eds J Musch, KC Klauer):7- 49. Mahwah, NJ: Erlbaum.
- Koch EJ (2006) Examining the role of self-esteem in psychological functioning and well-being. In *Self-Esteem Issues and Answers: A Sourcebook of Current Perspectives* (Ed. MH Kernis):260-266. New York, Psychology Press.
- Koole SL, Pelham BW (2003) On the nature of implicit self-esteem: The case of the name letter effect. In *Ontario Symposium on Personality and Social Psychology. Motivated Social Perception: The Ontario Symposium, Vol. 9* (Eds. SJ Spencer, S Fein, MP Zanna, JM Olson):93-116. New York, Psychology Press.
- Krause S, Back MD, Egloff B, Schmukle SC (2011) Reliability of implicit self-esteem measures revisited. *Eur J Pers*, 25:239-251.
- Krause S, Back MD, Egloff B, Schmukle SC (2012) A new reliable and valid tool for measuring implicit self-esteem. *Eur J Psychol Assess*, 28:87-94.
- Kuchynka SL, Bosson JK (2018) The psychodynamic mask model of narcissism: Where is it now? In *Handbook of Trait Narcissism* (Eds D Hermann, AB Brunell, JD Foster):89-95. Springer, Cham.
- Kurman J, Rothschild-Yakar L, Angel R, Katz M (2018) How good am I? Implicit and explicit self-esteem as a function of perceived parenting styles among children with ADHD. *J Atten Disord*, 22:1207-1217.
- Lannoy S, Chatard A, Selimbegovic L, Tello N, Van der Linden M, Heeren A et al. (2020) Too good to be cautious: High implicit self-esteem predicts self-reported dangerous mobile phone use. *Comput Human Behav*, 103:208-213.
- Lee A, Hankin BL (2009) Insecure attachment, dysfunctional attitudes, and low self-esteem predicting prospective symptoms of depression and anxiety during adolescence. *J Clin Child Adolesc Psychol*, 38:219-231.
- Lynum LI, Wilberg T, Karterud S (2008) Self-esteem in patients with borderline and avoidant personality disorders. *Scand J Psychol*, 49:469-477.
- MacKinnon K, Newman-Taylor K, Stopa L (2011) Persecutory delusions and the self: An investigation of implicit and explicit self-esteem. *J Behav Ther Exp Psychiatry*, 42:54-64.
- Marissen MA, Brouwer ME, Hiemstra AM, Deen ML, Franken IH (2016) A masked negative self-esteem? Implicit and explicit self-esteem in patients with Narcissistic Personality Disorder. *Psychiatry Res*, 242:28-33.

- McKay R, Langdon R, Coltheart M (2007) The defensive function of persecutory delusions: an investigation using the Implicit Association Test. *Cogn Neuropsychiatry*, 12:1-24.
- Monsonet M, Kwapil TR, Barrantes-Vidal N (2020) Deconstructing the relationships between self-esteem and paranoia in early psychosis: An experience sampling study. *Br J Clin Psychol*, 59(4):503-523.
- Moritz S, Werner R, Collani GV (2006) The inferiority complex in paranoia readdressed: A study with the Implicit Association Test. *Cogn Neuropsychiatry*, 11:402-415.
- Mota S, Humberg S, Krause, S, Fatfouta R, Geukes K, Schröder-Abé M et al. (2019) Unmasking narcissus: A competitive test of existing hypotheses on (agentic, antagonistic, neurotic, and communal) narcissism and (explicit and implicit) self-esteem across 18 samples. *Self Identity*, 19:435-455.
- Nosek BA, Banaji MR (2001) The go/no-go association task. *Soc Cogn*, 19:625- 666.
- Nosek BA, Hawkins CB, Frazier RS (2011) Implicit social cognition: From measures to mechanisms. *Trends Cogn Sci*, 15:152-159.
- Nuttin Jr JM (1985). Narcissism beyond Gestalt and awareness: The name letter effect. *Eur J Soc Psychol*, 15:353-361.
- O'Brien EJ, Bartoletti M, Leitzel JD (2006) Self-esteem, psychopathology, and psychotherapy. In *Self-esteem Issues and Answers: A Sourcebook of Current Perspectives* (Ed. MH Kernis):306-315. New York, Psychology Press.
- Olson MA, Fazio RH (2004) Reducing the influence of extrapersonal associations on the Implicit Association Test: Personalizing the IAT. *J Pers Soc Psychol*, 86:653-667.
- Olson MA, Fazio RH, Hermann AD (2007) Reporting tendencies underlie discrepancies between implicit and explicit measures of self-esteem. *Psychol Sci*, 18:287-291.
- Orth U, Robins RW, Trzesniewski KH, Maes J, Schmitt M (2009) Low self-esteem is a risk factor for depressive symptoms from young adulthood to old age. *J Abnorm Psychol*, 118:472-478.
- Park JY, Ryu V, Ha RY, Lee SJ, Choi WJ, Ha K et al. (2014) Assessment of implicit self-esteem in bipolar manic and euthymic patients using the implicit association test. *Compr Psychiatry*, 55:557-564.
- Pavlickova H, Turnbull OH, Bentall RP (2014) Discrepancies between explicit and implicit self-esteem and their relationship to symptoms of depression and mania. *Psychology Psychother*, 87:311-323.
- Payne BK, Cheng CM, Govorun O, Stewart BD (2005) An inkblot for attitudes: affect misattribution as implicit measurement. *J Pers Soc Psychol*, 89:277-293.
- Payne K, Lundberg K (2014) The affect misattribution procedure: Ten years of evidence on reliability, validity, and mechanisms. *Soc Personal Psychol Compass*, 8:672-686.
- Penedo JMG, Krieger T, Koditek MC, Holtforth M (2020) Discrepant negative self-associations as a risk factor for depressive deterioration after outpatient psychotherapy. *J Behav Ther Exp Psychiatry*, 69:101576.
- Phillips WJ, Hine DW, Thorsteinsson EB (2010) Implicit cognition and depression: A meta-analysis. *Clin Psychol Rev*, 30:691-709.
- Ratliff KA, Oishi S (2013) Gender differences in implicit self-esteem following a romantic partner's success or failure. *J Pers Soc Psychol* 105:688-702.
- Remue J, Hughes S, De Houwer J, De Raedt R (2014) To be or want to be: Disentangling the role of actual versus ideal self in implicit self-esteem. *PloS One*, 9:108837.
- Risch AK, Buba A, Birk U, Morina N, Steffens MC, Stangier U (2010) Implicit self-esteem in recurrently depressed patients. *J Behav Ther Expl Psychiatry*, 41:199-206.
- Ritter V, Ertel C, Beil K, Steffens MC, Stangier U (2013) In the presence of social threat: Implicit and explicit self-esteem in social anxiety disorder. *Cognit Ther Res*, 37:1101-1109.
- Ritter V, Leichsenring F, Strauss BM, Stangier U (2013) Changes in implicit and explicit self-esteem following cognitive and psychodynamic therapy in social anxiety disorder. *Psychother Res*, 23:547-558.
- Robinson MD, Meier BP (2005) Rotten to the core: Neuroticism and implicit evaluations of the self. *Self Identity*, 4:361-372.
- Robinson MD, Mitchell KA, Kirkeby BS, Meier BP (2006) The self as a container: Implications for implicit self-esteem and somatic symptoms. *Metaphor Symb*, 21:147-167.
- Roefs A, Huijding J, Smulders FT, MacLeod CM, de Jong PJ, Wiers RW et al. (2011) Implicit measures of association in psychopathology research. *Psychol Bull*, 137:149-193.
- Romero N, Sanchez A, Vázquez C, Valiente C (2016) Explicit self-esteem mediates the relationship between implicit self-esteem and memory biases in major depression. *Psychiatry Res*, 242:336-344.

- Rudman LA, Dohn MC, Fairchild K (2007) Implicit self-esteem compensation: automatic threat defense. *J Pers Soc Psychol*, 93:798-813.
- Rudolph A, Schröder-Abé M, Schütz A, Gregg AP, Sedikides C (2008) Through a glass, less darkly? Reassessing convergent and discriminant validity in measures of implicit self-esteem. *Eur J Psychol Assess*, 24:273-281.
- Rüsch N, Lieb K, Göttler I, Hermann C, Schramm E, Richter H et al. (2007) Shame and implicit self-concept in women with borderline personality disorder. *Am J Psychiatry*, 164:500-508.
- Rüsch N, Schulz D, Valerius G, Steil R, Bohus M, Schmahl C (2011) Disgust and implicit self-concept in women with borderline personality disorder and posttraumatic stress disorder. *Eur Arch Psychiatry Clin Neurosci*, 261:369-376.
- Schreiber F, Bohn C, Aderka IM, Stangier U, Steil R (2012) Discrepancies between implicit and explicit self-esteem among adolescents with social anxiety disorder. *J Behav Ther Exp Psychiatry*, 43:1074-1081.
- Schröder-Abé M, Rudolph A, Wiesner A, Schütz A (2007) Self-esteem discrepancies and defensive reactions to social feedback. *Int J Psychol*, 42:174-183.
- Smeijers D, Vrijzen JN, van Oostrom I, Isaac L, Speckens A, Becker ES et al. (2017). Implicit and explicit self-esteem in remitted depressed patients. *J Behav Ther Exp Psychiatry*, 54:301-306.
- Smith ER, DeCoster J (2000) Dual-process models in social and cognitive psychology: Conceptual integration and links to underlying memory systems. *Pers Soc Psychol Rev*, 4:108-131.
- Sriram N, Greenwald AG (2009) The brief implicit association test. *Exp Psychol*, 56:283-294.
- Stapel DA, Blanton H (2004) From seeing to being: Subliminal social comparisons affect implicit and explicit self-evaluations. *J Pers Soc Psychol*, 87:468-481.
- Steinberg JA, Karpinski A, Alloy LB (2007) The exploration of implicit aspects of self-esteem in vulnerability-stress models of depression. *Self Identity*, 6:101-117.
- Stewart C, Rogers F, Pilch M, Stewart I, Barnes-Holmes Y, Westermann S (2017) The effect of social exclusion on state paranoia and explicit and implicit self-esteem in a non-clinical sample. *J Behav Ther Exp Psychiatry*, 57:62-69.
- Stieger S, Preyts AV, Voracek M (2012) Romantic jealousy and implicit and explicit self-esteem. *Pers Individ Dif*, 52:51-55.
- Tanner RJ, Stopa L, De Houwer J (2006) Implicit views of the self in social anxiety. *Behav Res Ther*, 44:1397-1409.
- Teachman BA, Clerkin EM, Cunningham WA, Dreyer-Oren S, Werntz A (2019) Implicit cognition and psychopathology: Looking back and looking forward. *Annu Rev Clin Psychol*, 15:123-148.
- Teige S, Schnabel K, Banse R, Asendorpf JB (2004) Assessment of multiple implicit self-concept dimensions using the Extrinsic Affective Simon Task (EAST). *Eur J Pers*, 18:495-520.
- Timko CA, England EL, Herbert JD, Forman EM (2010) The Implicit Relational Assessment Procedure as a measure of self-esteem. *Psychol Rec*, 60:679-698.
- Trzesniewski KH, Donnellan MB, Robins RW (2013) Development of self-esteem. In *Self-esteem* (Ed V Zeigler-Hill.):60-79. New York, Psychology Press.
- Vahey NA, Barnes-Holmes D, Barnes-Holmes Y, Stewart I (2009) A first test of the Implicit Relational Assessment Procedure as a measure of self-esteem: Irish prisoner groups and university students. *Psychol Rec*, 59:371-387.
- Valiente C, Cantero D, Vázquez C, Sanchez Á, Provencio M, Espinosa, R (2011) Implicit and explicit self-esteem discrepancies in paranoia and depression. *J Abnorm Psychol*, 120:691-699.
- van Randenborgh A, Pawelzik M, Quirin M, Kuhl J (2016) Bad roots to grow: Deficient implicit self-evaluations in chronic depression with an early onset. *J Clin Psychol*, 72:580-590.
- van Tuijl LA, de Jong PJ, Sportel BE, de Hullu E, Nauta MH (2014) Implicit and explicit self-esteem and their reciprocal relationship with symptoms of depression and social anxiety: A longitudinal study in adolescents. *J Behav Ther Exp Psychiatry*, 45:113-121.
- van Tuijl LA, Glashouwer KA, Bockting CL, Tendeiro JN, Penninx BW, de Jong PJ (2016) Implicit and explicit self-esteem in current, remitted, recovered, and comorbid depression and anxiety disorders: The NESDA study. *PloS One*, 11:1-18.
- Vater A, Ritter K, Schröder-Abé M, Schütz A, Lammers CH, Bosson JK, Roepke S (2013) When grandiosity and vulnerability collide: Implicit and explicit self-esteem in patients with narcissistic personality disorder. *J Behav Ther Exp Psychiatry*, 44: 37-47.
- Vater A, Schröder-Abé M, Schütz A, Lammers CH, Roepke S (2010) Discrepancies between explicit and implicit self-esteem are linked to symptom severity in borderline personality disorder. *J Behav Ther Exp Psychiatry*, 41:357-364.
- Vázquez C, Diez-Alegria C, Hernández-Lloreda M J, Moreno MN (2008) Implicit and explicit self-schema in active deluded, remitted deluded, and depressed patients. *J Behav Ther Exp Psychiatry*, 39:587-599.

- Verkuyten M (2005) The puzzle of high self-esteem among ethnic minorities: Comparing explicit and implicit self-esteem. *Self Identity*, 4:177-192.
- Wegener I, Geiser F, Alfter S, Mierke J, Imbierowicz K, Kleiman A et al. (2015). Changes of explicitly and implicitly measured self-esteem in the treatment of major depression: evidence for implicit self-esteem compensation. *Comp Psychiatry*, 58:57-67.
- Werntz AJ, Steinman SA, Glenn JJ, Nock MK, Teachman BA (2016). Characterizing implicit mental health associations across clinical domains. *J Behav Ther Exp Psychiatry*, 52:17-28.
- Winter D, Steeb L, Herbert C, Sedikides C, Schmahl C, Bohus M et al. (2018) Lower self-positivity and its association with self-esteem in women with borderline personality disorder. *Behav Res Ther*, 109:84-93.
- Zeigler-Hill V (2006) Discrepancies between implicit and explicit self-esteem: Implications for narcissism and self-esteem instability. *J Pers*, 74:119-144.
- Zeigler-Hill V (2011) The connections between self-esteem and psychopathology. *J Contemp Psychother*, 41:157-164.
- Zeigler-Hill V (2013) The importance of self-esteem. In *Self-esteem* (Ed V Zeigler-Hill):1-20. New York, Psychology Press.
- Zeigler-Hill V, Jordan CH (2010) Two faces of self-esteem. In *Handbook of Implicit Social Cognition: Measurement, Theory, and Applications* (Ed B Gawrosnki, BK Payne):392-407. New York, Guilford Publications.

**Authors Contributions:** The author attest that she has made an important scientific contribution to the study and has assisted with the drafting or revising of the manuscript.

**Peer-review:** Externally peer-reviewed.

**Conflict of Interest:** No conflict of interest was declared by the author.

**Financial Disclosure:** The author declared that this study has received no financial support.