The structure of multidimensional self-esteem across age and gender

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ABSTRACT

Previous research has suggested that self-esteem is a multidimensional and hierarchically organized construct. Studies, however, have primarily used data from child or adolescent populations. In the current project, we examined the factor structure of multidimensional self-esteem in 661 adolescents (350 female) and compared it with the structure in 348 adults (191 female). In addition, we investigated gender-differences in multidimensional self-esteem. Results support the multidimensionality of self-esteem; the hierarchical organization, however, was much weaker than originally proposed. A superordinate factor of global self-esteem was not supported. With respect to age, findings established invariance across age groups. Female participants showed lower social, academic, and physical self-esteem as well as lower self-regard than male participants.

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1. Introduction

Since the beginning of modern psychological research in the late 19th century, self-esteem has been one of the most studied constructs in the social sciences. Self-esteem reflects the positivity of one's self-evaluations (Baumeister, 1998; Coopersmith, 1967). It is a basic domain of human functioning (MacDonald & Leary, 2013) and is important for social interaction (Leary, Tambor, Terdal, & Downs, 1995; Stinson et al., 2008), mental health and well-being (Marsh, Parada, & Ayotte, 2004; Vohs et al., 2001).

A host of studies has addressed the question of how the structure of self-esteem can be described (e.g.Brunner et al., 2010, Byrne & Shavelson, 1987, Cheng & Watkins, 2000, Coopersmith, 1967, Fleming & Courtney, 1984, Marsh, 1993, Marx & Winne, 1978, Montemayor & Eisen, 1977, Shavelson & Bolus, 1982, Yin & Fan, 2003). The most influential theoretical model by Shavelson, Hubner, and Stanton (1976) characterizes self-esteem as a multidimensional hierarchical construct. The multifaceted nature of self-esteem has been largely confirmed (Brunner et al., 2010; Fleming & Courtney, 1984; Fleming & Watts, 1980; Marsh & Shavelson, 1985; Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2006; Shavelson & Bolus, 1982), whereas there is little consensus on the hierarchical organization of the construct (Byrne & Shavelson, 1986; Byrne & Worth Gavin, 1996; Marsh & O'Mara, 2008).

Despite the large number of studies on the structure of self-esteem, most studies have focused on only children and adolescents (e.g.Brunner et al., 2010, Marsh & Ayotte, 2003, Marx & Winne, 1978, Shavelson & Bolus, 1982, Tashakkori, Thompson, Wade, & Valente, 1990). Little attention has been paid to the organization of the

structure of self-esteem beyond adolescence. In the present research, we examined the multidimensional structure of self-esteem in an adolescent sample and in an adult sample in order to determine the structure of self-esteem across age and gender groups.

1.1. The structure of self-esteem

Various models of self-esteem have been proposed. They have ranged from one-dimensional models to multidimensional, hierarchical conceptualizations. For example, Coopersmith (1967) and Marx and Winne (1978) argued that self-esteem is a one-dimensional construct, consisting of a single general factor without any sub-dimensions. By contrast, multidimensional hierarchical models such as Shavelson et al.'s (1976) model propose facets of self-esteem that are organized hierarchically. Shavelson et al. (1976) suggested a global factor of self-esteem, which is divided into academic and nonacademic self-esteem at a subordinate level. Academic and nonacademic self-esteem are further divided into specific facets: academic self-esteem comprises specific school-related subjects, whereas nonacademic self-esteem is divided into the domains of self-regard, social, and physical self-esteem. The multidimensional perspective of self-esteem, thus, differentiates between domain-specific evaluations of the self, which reflect specific self-evaluations that can be different in specific areas, such as high self-evaluations in the academic domain ("I feel good at math") but low self-evaluations in the social domain ("I feel uncomfortable in social interactions").

The model by Shavelson et al. (1976) has influenced research on self-esteem until today. Many self-esteem instruments have been constructed on the basis of that model (e.g., Multidimensional Self Concept Scale; Fleming & Courtney, 1984; Self-Description Questionnaires; Marsh, 1988). Still, there is little agreement on the hierarchical organization of self-esteem (Byrne, 2002; Marsh & O'Mara, 2008). For

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example, a study by Shavelson and Bolus (1982) provided support for a multidimensional, hierarchical structure of self-esteem, whereas Byrne and Shavelson (1986) and Vispoel (1995) found that the hierarchy in self-esteem is weaker than originally proposed. Taken together, previous findings support the multidimensionality of the self-esteem structure whereas the hierarchical ordering of self-esteem facets is still unclear.

1.2. Self-esteem and age

Concerning the question of how the structure of self-esteem evolves across age, many authors have suggested that self-esteem becomes increasingly differentiated with age (e.g.Harter, 1983, 1985, Montemayor & Eisen, 1977, Shavelson et al., 1976). For example, Shavelson et al. (1976) suggested that self-esteem becomes more differentiated with increased experience and thus, with age. The basis of self-esteem evolves from concrete descriptions of behavior to rather abstract constructs of self-perceptions during childhood and adolescence (Harter, 1983, 1985). The ability to integrate social comparison information in self-perceptions is also of crucial importance in the development of self-esteem (Butler, 1998; Higgins, 1991). With increasing life experience, children's perceptions of their relative competences and shortcomings become more realistic (Marsh & Ayotte, 2003) and thus, their self-esteem becomes more differentiated.

Indeed, previous research has supported this notion. For example, across several studies, Marsh and colleagues found that multiple self-esteem domains become more distinct from the second to the fifth grade (e.g.Marsh, 1989, Marsh & Ayotte, 2003, Marsh & Shavelson, 1985). After the age of 12 no further differentiation has been observed so far, which leads to the conclusion that the process of differentiation is completed during preadolescence (Marsh, 1989).

However, all of these studies focused on samples from child and adolescent populations. There is not yet any evidence that included adults. The assumption of further differentiation in adulthood or the assumption of an end of differentiation during preadolescence has not yet been empirically supported. We thus concluded that a test of self-esteem structure across different age groups is clearly warranted. As relevant cognitive abilities are formed by the end of adolescence (Harter, 1983; Higgins, 1991), we expected that likewise the structure of self-esteem does not become more differentiated after adolescence.

Apart from research on the structure of self-esteem, previous research has primarily focused on investigating differences in the mean levels of self-esteem. Findings have revealed that self-esteem seems to be consistently low during adolescence, then it increases throughout young and middle adulthood, and peaks at around 60 years of age (Baldwin & Hoffmann, 2002; Erol & Orth, 2011; Orth, Trzesniewski, & Robins, 2010; Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). On the basis of these results, we expected that adults would exhibit higher levels of self-esteem than adolescents.

1.3. Self-esteem and gender

Previous research on differences in the structure of self-esteem across gender has resulted in two competing models: the gender-invariant model and the gender-stereotypic model (see Marsh, 1993). The gender-invariant model proposes no differences in the structure of self-esteem between the genders. The gender-stereotypic model, however, suggests that males and females vary substantially because of gender-stereotypic socialization processes (e.g., Eccles, 1987). For example, boys should exhibit a stronger connection between global self-esteem and academic self-esteem, whereas the connection should be smaller for girls.

Previous research provided somewhat inconsistent results. For example, analyses on 12- to 16-year-olds revealed that the structure of self-esteem was the same across gender groups (Marsh, 1993; see also Cheng & Watkins, 2000; Yin & Fan, 2003). However, an investigation

of 16- to 18-year-olds found that the structure of self-esteem varied significantly with gender (Byrne & Shavelson, 1987). In the current study, we tested the hypotheses of different versus gender-invariant structures against each other. Furthermore, previous research has focused on adolescent samples without including adult samples. In the current studies, we included adolescent and adult samples when comparing the structure between males and females.

With respect to gender differences in the mean levels of self-esteem, efforts have been made to integrate the available findings. Concerning global self-esteem, several meta-analyses have revealed small but somewhat consistent gender differences that favor men (Feingold, 1994; Kling, Hyde, Showers, & Buswell, 1999; Major, Barr, Zubek, & Babey, 1999). Investigations of specific facets of self-esteem have revealed further evidence: in the meta-analysis by Wilgenbusch and Merrell (1999) as well as the one by Gentile et al. (2009), male participants exhibited significantly higher physical self-esteem and self-regard than female participants. With respect to differences in academic and social self-esteem, the findings are still inconsistent: whereas Gentile et al. (2009) did not find differences between female and male participants in academic and social self-esteem, Wilgenbusch and Merrell (1999) reported higher academic self-esteem for males and higher social self-esteem for females. On the basis of these findings, we expected that male participants would exhibit higher physical self-esteem and self-regard than female participants. Because of inconsistent findings with respect to academic and social self-esteem two opposing hypotheses were tested against each other.

1.4. The present research

In the current project, we examined the structure and level of self-esteem in different age and gender groups. Prior to comparing the groups, we identified a baseline model that reflected the best fitting structural model of self-esteem. Previous approaches to testing the structure of self-esteem have conceptualized different structures and thus different models of self-esteem. These have ranged from one-dimensional, non-hierarchical models to multidimensional, hierarchical conceptualizations (e.g.Coopersmith, 1967, Marx & Winne, 1978, Shavelson et al., 1976). Therefore, in order to identify the baseline model, we tested different models with varying degrees of dimensionality and hierarchy against each other.

Previous research on the structure of self-esteem has primarily focused on adolescents and children. To analyze the structure of self-esteem in different age groups, we tested both adolescents and adults. Furthermore, previous studies have typically used different instruments for testing adolescents and adults. However, in order to draw conclusions about the factor structure of a construct across age groups, it is important to assess the data with the same instrument across all groups. Therefore, we assessed self-esteem in the various groups with the same instrument.

Moreover, previous research on self-esteem has often investigated whether age and gender groups differ in their levels of self-esteem without previously testing for invariance in the structure of self-esteem across groups (e.g.Bolognini, Plancherel, Bettschart, & Halfon, 1996, McCarthy & Hoge, 1982, Robins et al., 2002). Invariance means that an instrument measures the same construct in the same way across groups and that the structure of the construct is equivalent across groups (Byrne & Stewart, 2006). However, as long as it is not clear whether the structure of self-esteem is invariant across age and gender groups, the interpretation of mean differences is problematic (Byrne & Shavelson, 1987; Byrne & Stewart, 2006; Cheung & Rensvold, 2002; Marsh, 1993). In the current research, we thus used confirmatory factor analyses to apply invariance testing procedures and tested for differences in the factor structure across age and gender groups. We then examined the latent means of self-esteem, which are the means related to each factor, in order to investigate potential differences in the levels of self-esteem between groups.