



Links between psychological disengagement from school and different forms of self-esteem in the crucial period of early and mid-adolescence

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Abstract

The purpose of this study was to test the links between psychological disengagement from academics and self-esteem during two different periods of adolescence. Previous research provided mixed findings on the links between both psychological disengagement mechanisms (i.e., discounting and devaluing) and self-esteem. To clarify this relationship, global self-esteem as well as self-esteem in school attainment and social domains were assessed among 142 early-adolescents (aged 11 to 12) and 172 mid-adolescents (aged 13 to 15). According to the Psychological Disengagement Model, it was predicted that experience of personal deprivation due to perceived relative academic underachievement would be associated with discounting of academic grades. In turn, a link between discounting and devaluing from school was expected. Both psychological disengagement mechanisms were predicted to harm global self-esteem and self-esteem in the school attainment domains. However, discounting and devaluing were expected to increase self-esteem in the social domains among mid- rather than early-adolescents. Path analyses support in part prediction. Both psychological disengagement mechanisms played a different role on global and domain-specific self-esteem. Among early-adolescents, discounting reduced global self-esteem and self-esteem in school attainment domains. Findings pointed to the self-protective role of discounting on self-esteem in social domains among mid-adolescents as well as the non-protective function of devaluing on global self-esteem, school attainment and social domains of self-esteem. This study contributes by clarifying the links between psychological disengagement from academics and self-esteem at two distinct periods in adolescence and the specific domains of self-esteem.

Keywords Psychological disengagement from school · Global self-esteem · Domain-specific self-esteem · Personal relative deprivation · Early-and mid-adolescence

1 Introduction

1.1 School disengagement and adolescence

Youth disengagement from academics is a matter for concern. When they disengage from school, youth cease their involvement in school activities, respond in maladaptive ways to the obligation of attending school (Skinner et al. 2008; Wang et al. 2015), as well as experience a decrease in grade point average and educational aspirations (Wang et al. 2019). Disengagement from school creates a vicious cycle; youth will more likely associate with delinquent peers, devalue academics, and feel alienated from their teachers, which in turn increases their disengagement from school (Morrison et al. 2002). Academic disengagement may also ultimately lead to school dropout (Archambault et al. 2009). However, there are periods in the life of youths when they are more at risk to experience school disengagement. Researchers have identified the secondary school years as an especially risky period for school disengagement (Wang and Fredricks 2014). Indeed, the transition to a secondary school is marked with important changes for youth, namely, exposure to a larger and more heterogeneous student population, fewer opportunities for interaction with teachers, and wavering social support from teachers, peers, and parents (e.g., Eccles et al. 1993; Eccles and Roeser 2010; Wang and Holcombe 2010). These changes to the school environment are at odds with the developmental needs of adolescents (Eccles and Midgley 1989). Moreover, according to Stage-Environment Fit Theory (e.g., Eccles and Midgley 1989; Eccles et al. 1993; Eccles and Roeser 2010), students disengage first psychologically and then physically from school as they mature into and through adolescence. Thus, school disengagement might initially be expressed by a psychological state (Eccles and Roeser 2010). Therefore, the secondary school years appear as especially relevant to examine the school disengagement in its first expression, i.e., its psychological expression. In this aim, we draw upon a theoretical framework from social psychology (Crocker and Major 1998; Major and Schmader 1998; Major et al. 1998; Osborne 1997; Schmader et al. 2001; Steele 1997; Tougas et al. 2005, 2008) to explore the psychological underpinnings of psychological disengagement from academics. In this theoretical framework, researchers make a distinction between two psychological disengagement mechanisms, that is, discounting and devaluing (e.g., Major et al. 1998, see for a review Tougas and Beaton 2008). In the academic domain, discounting involves the conviction that negative academic feedback and poor academic grades are biased and do not reflect one's true abilities (e.g., "The grades I obtain are below my real skills"). Devaluing is a mechanism whereby a student will minimize the importance of academic achievement and feel that this domain is no longer relevant for the self (e.g., "Succeeding in school is not important for my future life").

Both psychological disengagement mechanisms correspond to a mental retreat from academic achievement so that it is no longer considered a primary source of self-esteem (e.g., Crocker et al. 1998; Major and Schmader 1998; Major et al. 1998). Therefore, the examination of psychological underpinnings of academic disengagement involves the exploration of its links with self-esteem, especially at the critical period of adolescence associated with a lowered self-esteem (Orth and Robins 2014; Robins et al. 2002). This is the contribution of the present study designed to test the links between each mechanism of psychological disengagement from school and crucial dimensions of self-esteem on two separate samples of participants corresponding to two different periods of adolescence in secondary school years: early-adolescence (11–12 years old) and mid-adolescence (13–15 years old). This analysis will help leverage any strategy designed to curtail school disengagement and improve school engagement at a critical period of the academic journey.

1.2 Personal relative deprivation as predictor of psychological disengagement

On the basis of the Psychological Disengagement Model (PDM; e.g., Beaton et al. 2015; Rinfret et al. 2014; Tougas et al. 2005), psychological disengagement from school emerges from the experience of personal relative deprivation. At the personal level, it is defined as a feeling of dissatisfaction experienced following negative comparisons of one's disadvantaged situation with that of more fortunate others (Crosby 1976). According to this definition, personal relative deprivation includes a cognitive and affective component (Runciman 1966). The cognitive component refers to personal comparisons with others. The affective component includes dissatisfaction due to perceived differences between the self and others. In the academic setting, classmates represent comparison targets, whereby a student may feel dissatisfaction due to recognizing that one is chronically underperforming at school in comparison with a classmate (or several classmates). If, as originally suggested by Crocker and Major (Crocker et al. 1998; Major et al. 1998), psychological disengagement is a strategy used in response to individual threats such as low grades, students should report psychological disengagement from school when they are dissatisfied with their underperformance relative to their classmates. Thus, feelings of personal relative deprivation could predict discounting and devaluing.

According to the PDM (e.g., Beaton et al. 2015; Lagacé and Tougas 2006; Laplante et al. 2010, 2011; Rinfret et al. 2014; Tougas et al. 2005), individuals embark gradually on the psychological disengagement road, starting from the mechanism that has less significance for one's life (discounting) to the one that has much more (devaluing). Discounting is considered as temporary and less radical strategy than devaluing (e.g., Lesko and Corpus 2006; Major and Schmader 1998; Tougas et al. 2005). Whereas devaluing, deemed as the royal road of psychological disengagement (Croizet and Martinot 2003), implies a withdrawal from the academic domain, discounting allows individuals to temporarily protect themselves

from negative evaluations received in school. Furthermore, individuals generally report greater discounting than devaluing (e.g., Régner and Loose 2006; Schmader et al. 2001; Tougas et al. 2005), which suggests that it is more difficult to devalue a domain than to discredit poor evaluations, especially when the domain (such as school) is highly valued in society (e.g., Laplante et al. 2015).

The first aim of the present study is to determine the relationship between the experience of personal relative deprivation, i.e., dissatisfaction due to unfavorable academic comparisons with other classmates, and psychological disengagement from school. According to the PDM, the more students will feel personally deprived in academic achievement compared to their classmates, the more they will discount their grades. Students who repeatedly discount their academic underperformance (poor grades), come to the conclusion that their abilities and potential will never be recognized at school, and thus, are more likely to devalue academics. All in all, personal deprivation in academic achievement is positively associated with discounting of grades, which in turn is linked to the propensity to devalue academic achievement.

1.3 Psychological disengagement and domain-specific self-esteem

The second aim of the present study is to determine whether secondary school students draw benefit in self-esteem from psychological disengagement in an academic context. Psychological disengagement was originally conceived as a strategy meant to protect the self-esteem of stigmatized group members by the detachment of global self-esteem from the domain in which their group is stigmatized so that their self-esteem is no longer affected by negative stereotypes or poor feedback (e.g., Major et al. 1998; Major and Schmader 2001; Schmader et al. 2001). Although anyone can draw upon psychological disengagement to protect themselves from negative outcomes, it has proven particularly prevalent among stigmatized groups like ethnic minority students, due to greater exposure to group-level threats such as negative stereotypes. However, research has failed to provide clear support of the link between psychological disengagement and self-esteem. Some findings indicate non-significant or even negative relations between psychological disengagement and self-esteem (Beaton et al. 2015; Major and Schmader 1998, 2001; Tougas et al. 2005). Results of a meta-analysis (Laplante et al. 2015) found that both psychological disengagement mechanisms are associated with low global self-esteem. In the academic domain, the results are also mixed. Among secondary school students, Loose et al. (2012) showed that discounting of grades was positively related to global self-esteem and academic self-esteem while devaluing from school was unrelated to global self-esteem and academic self-esteem. Among college students, Lesko and Corpus (2006) did not find any significant correlations between self-esteem and discounting of academic tests or domain identification (considered in this study as a reversed measure of devaluing). Thus, when the measure of devaluing refers to domains that are highly regarded in society, such as school or academic

tests, devaluing does not protect self-esteem. Yet, it is more difficult to determine whether discounting protects self-esteem in academics given that the measures address different features (discounting academic tests in Lesko and Corpus' study, discounting grades in Loose et al.'s study). In addition to this difficulty to determine the link between discounting and self-esteem in the academic context, with the exception of the study conducted by Loose et al. (2012) that included academic self-esteem as well as global self-esteem, previous studies focused exclusively on global self-esteem, that is, the individual's positive or negative attitude toward the self in general. However, several authors have stressed the importance of studying specific self-esteem, especially with adolescents who make important distinctions when describing and evaluating their abilities in various domains (Harter 1990a; Marsh and Shavelson 1985; Young and Mroczek 2003). Therefore, in order to better understand the self-protecting properties of both mechanisms of psychological disengagement on self-esteem, we propose to examine both global and domain-specific self-esteem.

1.4 Global and domain-specific self-esteem at two different periods in adolescence

Global self-esteem is not the sum of domain specific self-evaluations. Rather, global self-esteem refers to the extent to which individuals evaluate themselves favorably as a person in general (Rosenberg 1979). Therefore, an analysis of the relationship between psychological disengagement and self-esteem is incomplete without also considering domain-specific facets of self-esteem, especially in adolescence (Harter 1988; Marsh et al. 2004; Marsh and Shavelson 1985; Rosenberg et al. 1995; Soest et al. 2016; Young and Mroczek 2003). In adolescence, the self becomes increasingly differentiated with a proliferation of selves that vary as a function of social roles, such as a student, a close friend, or a member of a group of peers. This more nuanced understanding of self-esteem has led Harter (1988) to develop a self-esteem measure for adolescents (SPPA, Self-Perception Profile for Adolescents). This measure includes nine different domains of self-esteem, such as academic competence, social acceptance (peers' approval), behavioral conduct (proper or normative conduct), and close friendship. Harter (1988) proposes that not all domain-specific sources of self-esteem will be evaluated in the same manner. For instance, youth may report high self-esteem due to the approval of the peer group (high social acceptance self-esteem), while also experiencing low self-esteem due to the critical views held by teachers or parents (low behavioral conduct self-esteem).

Within the school context, the key school-defined goal is academic attainment, but adolescents also need to maintain and establish interpersonal relationships, develop social identities and a sense of belonging (Sweeting et al. 2011). In adolescence, high achievers are not necessarily one and the same as respected or high-standing students. Among dimensions giving importance to adolescents within the school community, Sweeting et al. (2011) distinguished between a

dimension representing popularity and a dimension of academic achievement and conforming to behavioral standards. This distinction is consistent with the Harter et al. (1996) findings revealing two distinct clusters of domain-specific self-esteem: a cluster comprising the social domains (peer's approval self-esteem and close friendship self-esteem) and a cluster comprising more normative domains (academic self-esteem and behavioral conduct self-esteem). Thus, "highest standing" represents a different dimension from "highest grades" suggesting that adolescents' self-esteem within the school setting is likely to be supported by at least two types of domain: the social or peer-approval domains and the school attainment domains. Moreover, some authors have already suggested that at least devaluing academics may sometimes refer, especially during adolescence, to a peer-group norm (Davis 2003; Loose et al. 2012; Ogbu 1997). Therefore, both mechanisms of psychological disengagement as a potential peer-group norm among students with academic difficulties, could result in personal benefit to these students by protecting the social domains of self-esteem (social acceptance self-esteem and close friendship self-esteem). However, we propose a different pattern of results between early-adolescents and mid-adolescents. Because early adolescence coincides with the transition to secondary school, early-adolescents have trouble to develop friendship and experience less access to social support from peers (Berndt 1989; Cantin and Boivin 2004; Degirmencioglu et al. 1998; Hardy et al. 2002; Poulin and Chan 2010). In contrast, Harter (1990b) showed that in mid-adolescence, the support of close friends and approval of peers functions as a secure psychological base from which one could reemerge to protect self-esteem. Thus, compared to early-adolescents, mid-adolescents are more likely to benefit from the self-protective resources in the peer-approval domain.

In contrast, psychological disengagement is expected to harm self-esteem that refers to academic domains for both early- and mid-adolescents. Indeed, from an early age the standards for success are explicit, feedback about performance is frequent and routine, and considerable educational attention focuses on teaching proper conduct (Cole et al. 2001). Therefore, discounting grades and devaluing school lead adolescents to adopt non-normative values within the academic context. Both mechanisms could lead students to feel rejected by the educational institution. For both early- and mid-adolescents, the more they psychologically would disengage from school (discounting and devaluing), the more they would report decreased self-esteem in the school attainment domains (academic self-esteem and behavioral conduct self-esteem). In sum, both early- and mid-adolescents would suffer from discounting of grades and devaluing from school in the domain-specific self-esteem of school attainment, but mid-adolescents would compensate by turning to the peer-approval domains of self-esteem such as social acceptance and close relationships.

Finally, what about the consequences of psychological disengagement on global self-esteem? Since schooling is highly valued in our society, leaving such

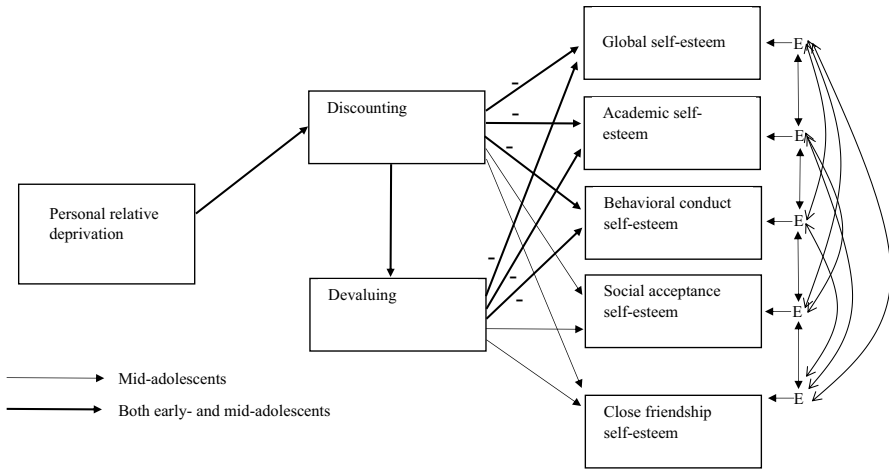


Fig. 1 The postulated model of the relationship between Personal Relative Deprivation, Psychological Disengagement and Self-Esteem

a domain is very costly for a youth (e.g., Rinfret et al. 2014). As a consequence, secondary school students who devalue school will report decreased global self-esteem. Concerning the impact of discounting of grades on global self-esteem, the hypothesis remains more open. Indeed, Loose et al. (2012) observed in secondary school students a positive relationship between discounting and global self-esteem. However, according to the PDM (e.g., Beaton et al. 2015; Tougas et al. 2005), although discounting can be a temporary form of psychological disengagement, repeatedly discounting of poor grades may lead to decreased global self-esteem as students conclude that their abilities and potential will never be recognized at school. Thus, discounting the relevance of grades is likely to decrease the global self-esteem of secondary school students.

1.5 Hypotheses

We propose to examine psychological disengagement and a comprehensive view of self-esteem among two separate samples of early- and mid-adolescents. This study will test the links between personal deprivation due to unfavorable comparisons between the self and other classmates in academic achievement, both mechanisms of psychological disengagement, and domain-specific self-esteem, as well as global self-esteem (see Fig. 1). Thus, the following hypotheses are tested for early- and mid-adolescent secondary school students:

- (1) For both early- and mid-adolescents, personal deprivation due to unfavorable comparisons between the self and other classmates in academic achievement will be associated with discounting grades. In turn, greater discounting will covary with an increase of academic achievement devaluing.
- (2) For both early- and mid-adolescents, discounting and devaluing academic achievement will be associated with decreased global self-esteem and self-esteem in the school attainment domains (academic self-esteem and behavioral conduct self-esteem).
- (3) Among mid-adolescents, rather than early-adolescents, discounting and devaluing academic achievement will be associated with increased self-esteem in the social domains (social acceptance self-esteem and close friendship self-esteem).

2 Method

2.1 Participants

Adolescents in this study attended a priority education high school. In France, priority education schools are located in economically depressed neighborhoods and benefit from compensatory education funds. All students in a priority education school come from low or very low socio-economic backgrounds. Not only do low socio-economic status (SES) students often underperform compared with their high-SES peers (Bradley and Corwyn 2002; Goudeau et al. 2017; Sirin 2005), but they also face negative stereotypes of intellectual inferiority (Croizet and Claire 1998; Désert et al. 2009; Spencer and Castano 2007), which increases the risk of psychological disengagement (e.g., Major et al. 1998; Schmader et al. 2001). A total of 322 French adolescents participated in this project. They were between 11 to 15 years of age ($M=12.8$, $SD=1.2$) while 8 youth did not indicate their age. Among these participants, 160 were male and 152 were female. Some individuals ($n=10$) did not report their gender. We do not have any data on the participants' race or ethnicity as French legislation strictly limits the collection of such information. Approval from the ethical committee "CPP Sud-Est VI" (#2016/CE 68) was obtained to conduct the research. Informed consent to participate in this study was also obtained by students, parents, school authorities and teachers. The study was presented as a "survey to better know secondary school students", and the participants were assured that the data would remain confidential.

2.2 Measures¹

Each participant received a booklet, read the instructions and completed the questionnaire. This questionnaire contained measures selected to tap into the theoretical concepts. Where appropriate, items followed by an asterisk indicate that scores were reverse coded to better reflect the construct.

2.2.1 Personal relative deprivation

Both components of personal relative deprivation were rated. The cognitive component refers to personal comparisons with others, whereby participants were asked to rate their school performance relative to their classmates' performance with a thermometer scale that ranged from 1 *not at all good at school* to 10 *very good at school*. For the affective component, dissatisfaction due to a perceived disadvantageous personal situation next to other classmates was measured by asking participants to rate how they felt about this social comparison on a thermometer ranging from 1 *not at all content* to 10 *very content*. Responses to both items were reversed and combined to form a composite score ($r=0.66$, $p < 0.0001$). High scores represent greater

¹ The alpha coefficient was found to be low for the discounting and devaluing variables among adolescents as well as for the social self-esteem and conduct self-esteem among mid-adolescents (see Table 2). Researchers have argued that Cronbach's alpha is a biased estimate of the reliability of a measure when the tau-equivalency assumption is violated (Cho 2016; Green and Yang 2009; Trizano-Hermosilla and Alvarado 2016). Therefore, separate confirmatory factor analyses were conducted with EQS version 6.3 for the discounting and devaluing measures among early- and mid-adolescents to test for the tau-equivalent assumption. Furthermore, separate confirmatory factor analyses were conducted for the social self-esteem and the conduct self-esteem measures among mid-adolescents. The tau-equivalency assumption was tested by evaluating a unidimensional measurement model whereby all factor loadings are constrained as equal. When the Cronbach's alpha is found to be a biased estimate, Sijsma (2009) proposes the Guttman's lower bound statistic as an acceptable indicator of internal consistency

Findings revealed that the constrained model produced unsatisfactory fit to the data for the discounting measure among early-adolescents $\chi^2(2) = 17.11$, $p = .00$, NNFI = .499, CFI = .666, SRMR = .206, RMSEA = .284, CI [.169-.412] and mid-adolescents $\chi^2(2) = 14.50$, $p = .00$, NNFI = .392, CFI = .595, SRMR = .133, RMSEA = .213, CI [.119-.320]. However, the constrained model was satisfactory for the devaluing measure among early-adolescent $\chi^2(2) = 3.45$, $p = .17$, NNFI = .854, CFI = .903, SRMR = .054, RMSEA = .089, CI [.000-.242] and mid-adolescents, $\chi^2(2) = 2.054$, $p = .35$, NNFI = .999, CFI = .999, SRMR = .043, RMSEA = .014, CI [.000-.169]. According to these results, the tau-equivalency assumption is not respected for the discounting measure and the alpha coefficient is not an appropriate estimate of reliability. Therefore for the discounting variable, the Guttman $\lambda 5$ parameter was calculated and revealed the following results among early- and mid-adolescents for the discounting measure, .634 and .537 respectively.

A constrained confirmatory factor analysis was conducted separately for the social self-esteem and the conducted self-esteem measures among mid-adolescent participants. Findings reveal that the constrained model was satisfactory for the social self-esteem measure $\chi^2(9) = 9.14$, $p = .42$, NNFI = .998, CFI = .999, SRMR = .040, RMSEA = .010, CI [.000-.091] and suggest that the tau-equivalency assumption is respected. However, the constrained model did not fit the data for the measure of conduct self-esteem $\chi^2(9) = 25.06$, $p = .002$, NNFI = .773, CFI = .795, SRMR = .125, RMSEA = .109, CI [.060-.161]. In this case, the Guttman $\lambda 5$ parameter was calculated for the conduct self-esteem measure and was found to be .609.

personal relative deprivation due to a poorly rated academic performance next to their classmates.

2.2.2 Psychological disengagement

Both psychological disengagement mechanisms, that is, discounting and devaluing were rated with measures taken from a previous study conducted among French secondary school students (Loose et al. 2012). For discounting of grades, participants were asked to react to the following three items: “The grades I obtain at school provide a valid evaluation of my achievement level*”, “The grades I obtain correctly reflect my academic abilities*”, and “The grades I obtain are below my real skills”. Academic devaluing was measured with the following three items: “Succeeding in school is important for my future life*”, “Being good at school is an important part of who I am*”, and “Academic success is very valuable to me*”. For both measures, responses were recorded on a thermometer scale ranging from 1 *strongly disagree* to 5 *strongly agree*. A composite score was computed by adding the scores and computing the average. High scores represent greater discounting and devaluing in the academic context.

2.2.3 Self-Esteem from perception profile for adolescents (SPPA)

In order to test the postulated model, participants were presented with six subscales of the validated French version (Terriot et al. 2017) of the measure of Self-Perception Profile for Adolescents (SPPA, Harter 1988). The six subscales included: academic self-esteem, behavioral conduct self-esteem, social acceptance self-esteem, close friendship self-esteem, and global self-esteem. Each subscale contained 5 items. To complete the SPPA, participants first selected a statement from sentence pairs to indicate whether they were like or not like others who were good at a particular activity (e.g., “Some teenagers like the kind of person they are BUT other teenagers often wish they were someone else”, “Some teenagers have classmates who like them the way they are BUT other teenagers have classmates who wish they were different”. Next, participants marked whether the chosen statement was “Really true for me” or “Sort of true for me.” Each item was scored on a 4-point scale and summed with high scores reflecting higher self-esteem.

2.3 Analyses

Path analysis was performed using EQS 6.3 for Windows statistical software (Bentler 2006) with raw data and a robust maximum likelihood estimation method. Model fitness was evaluated against the chi-square statistic and four goodness-of-fit statistics. The Satorra-Bentler chi-square statistic ($S-B\chi^2$) is a corrected normal theory method that evaluates the discrepancy between the hypothesized model covariances and the sample covariances by correcting for nonnormal distributions (Satorra and Bentler 2001). A large value of the $S-B\chi^2$ relative to its degree of freedom indicates a “badness

Table 1 Means (Standard deviations) and Results of the Tukey HSD Test

Variables	11 years (<i>n</i> = 42)	12 years (<i>n</i> = 100)	13 years (<i>n</i> = 66)	14 years (<i>n</i> = 80)	15 years (<i>n</i> = 26)
PRD	3.98 _a (1.76)	4.21 _a (1.73)	4.30 _{ab} (1.86)	4.64 _{ab} (1.90)	5.36 _b (1.96)
Devaluing	1.26 _a (0.43)	1.48 _{ac} (0.54)	1.70 _{bc} (0.80)	1.75 _b (0.72)	1.88 _b (0.83)
Discounting	2.36 _a (0.93)	2.57 _{ac} (0.84)	2.78 _{abc} (0.83)	2.99 _b (0.81)	3.02 _{bc} (0.87)

Note PRD personal relative deprivation, Means sharing a common subscript are not statistically different at $p \leq .05$

of fit” between the postulated model and the data. The goodness of fit statistics includes the robust root mean square of approximation (RMSEA; Browne and Cudeck 1993), along with its confidence interval (CI), the standardized root mean-square residual (SRMR, Bentler 2006), the robust Bentler comparative fit index (CFI; Bentler 1990), and the non-normed fit index (NNFI; Bentler and Bonett 1980). Values greater than 0.90 for the CFI and the NNFI indicate a good fit between the predicted model and the data (Hu and Bentler 1999). RMSEA and SRMR values less than 0.05 indicate a good fit between the predicted model and the data whereas a value greater than 1.0 reflects a poor fit (Kline 2016). Values below 0.08 are acceptable (McDonald and Ho 2002).

The EQS statistical package provides a multivariate Lagrange Multiplier test that refers to the improvement in fit when specific parameters are freed. However, to avoid capitalizing on chance with a data-driven procedure (MacCallum et al. 1992), modifications are based on conceptual grounds.

3 Results

3.1 Preliminary analyses

A total of 8 students had not completed the measures that tapped into the theoretical concepts. Therefore, the analyses were conducted with 314 secondary school students. A Oneway ANOVA was performed to validate differences among age groups on the basic concepts contained in the Psychological Disengagement Model (Tougas et al. 2005), that is, personal relative deprivation, discounting, devaluing and global self-worth. Oneway ANOVAs showed significant differences for personal relative deprivation, $F(4, 300) = 2.79$, $p = 0.02$, Partial $\eta^2 = 0.035$, discounting, $F(4, 305) = 5.52$, $p = 0.001$, Partial $\eta^2 = 0.067$ and devaluing, $F(4, 308) = 5.98$, $p = 0.001$, Partial $\eta^2 = 0.072$. No significant differences were uncovered for global self-esteem. The Tukey HSD test (see Table 1) uncovered distinctions between early-adolescent (11 to 12 years of age) and mid-adolescent participants (13 to 15 years of age). Therefore, separate path analyses were conducted with early-adolescent ($N = 142$) and mid-adolescent ($N = 172$) participants. Analyses were conducted to test for differences due to age (early-, mid-adolescence) and gender (female, male) on all variables contained in the model. Results of the 2 X 2 MANOVA only revealed differences due to age $F(8, 288) = 3.64$, $p = 0.001$, Partial $\eta^2 = 0.092$, supporting the

Table 2 Correlations and Descriptive Statistics among Early-(11 to 12 years) and Mid-Adolescent (13 to 15 years) Participants

Variables	1	2	3	4	5	6	7	8
Early-adolescents ($N=142$)								
1. PRD	–	.49**	.31**	–.33**	–.62**	–.28**	–.17*	–.10
2. Discounting		–	.29**	–.29**	–.42**	–.11	–.24**	.00
3. Devaluing			–	–.26**	–.30**	–.04	–.18*	–.01
4. Global SE				–	.49**	.47**	.35**	.25**
5. Academic SE					–	.41**	.28**	.19*
6. Social acceptance SE						–	.13	.39**
7. Behavioral conduct SE							–	.11
8. Close friendship SE								–
<i>M</i>	4.14	2.51	1.41	3.12	2.78	3.12	2.92	2.98
<i>SD</i>	1.73	0.87	0.52	0.68	0.64	0.64	0.64	0.72
Skewness	0.49	0.46	1.37	–0.67	–0.25	–0.93	–0.44	–0.73
Kurtosis	0.51	0.17	1.39	–0.51	–0.33	0.94	–0.14	0.14
Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.20	1.00
Maximum	10.00	5.00	3.33	4.00	4.00	4.00	4.00	4.00
Alpha	N/A	.58	.53	.81	.76	.75	.73	.71
Mid-adolescents ($N=172$)								
1. PRD	–	.28**	.33**	–.28**	–.72**	–.12	–.29**	.14
2. Discounting		–	.38**	–.09	–.13	.01	–.08	.15*
3. Devaluing			–	–.24**	–.16*	–.19*	–.22**	.05
4. Global SE				–	.37**	.41**	.30**	.17*
5. Academic SE					–	.19*	.32**	.01
6. Social acceptance SE						–	.14	.39**
7. Behavioral conduct SE							–	.11
8. Close friendship SE								–
<i>M</i>	4.59	2.92	1.75	3.11	2.68	3.14	2.74	3.02
<i>SD</i>	1.91	0.83	0.77	0.63	0.67	0.55	0.54	0.71
Skewness	0.09	0.28	1.71	–0.62	0.07	–0.48	–0.09	–0.62
Kurtosis	–0.41	–.02	3.97	0.15	–0.55	0.29	–0.16	–.06
Minimum	1.00	1.00	1.00	1.00	1.00	1.40	1.20	1.00
Maximum	10.00	5.00	5.00	4.00	4.00	4.00	4.00	4.00
Alpha	N/A	.46	.71	.78	.82	.68	.60	.76

Note. PRD personal relative deprivation, * $p < .05$, ** $p < .01$

decision to conduct separate analyses among early- and mid-adolescent participants. Descriptive analyses, correlations and the reliability of measures are found in Table 2.

Table 3 Fit Statistics for the Psychological Disengagement Model among Early-(11 to 12 years old) and Mid-Adolescent (13 to 15 years old) Participants

Models	S-B χ^2 (df)	CFI _a	NNFI _a	SRMR	RMSEA _a (90% CI)
Early-adolescents (N = 142)					
Proposed model	44.43 (6), p = .000	.816	.143	.090	.213 (.157–.273)
PRD → academic SE	14.91 (5), p = .010	.953	.735	.066	.119 (.052–.190)
PRD → devaluing	9.83 (4), p = .04	.972	.805	.054	.102 (.061–.183)
Final model	10.56 (5), p = .06	.965	.896	.069	.089 (.00–.164)
Mid-adolescents (N = 172)					
Proposed model	107.68 (6), p = .000	.557	–1.067	.134	.324 (.271–.377)
PRD → academic SE	23.69 (5), p = .000	.919	.544	.091	.152 (.094–.216)
PRD → devaluing	18.28 (4), p = .001	.938	.564	.064	.149 (.084–.221)
Final model	28.96 (13), p = .006	.930	.850	.077	.087 (.044–.130)

Note PRD personal relative deprivation, S-B χ^2 Satorra-Bentler chi-square, NNFI non-normed fit index, CFI comparative fit index, RMSEA root mean square error of approximation (confidence interval), SRMR standardized root mean square residual

^aRobust statistics are reported

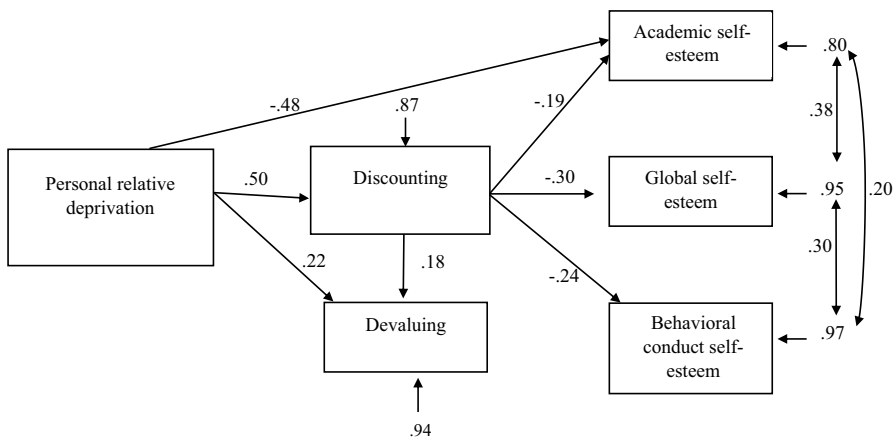


Fig. 2 Standardized robust maximum likelihood solution of the Psychological Disengagement Model among early-adolescents (N = 142). The residual variances reflect the amount of unexplained variance. For each observed variable, $R^2 = (1 - \text{error variance})$

3.2 Path analysis among early-adolescents

A path analysis tested the PDM among early-adolescent participants. Findings revealed a poor fit (see Table 3). The results of the Lagrange Multiplier test proposed the following two modifications: a path between personal relative deprivation and academic self-esteem and a path between personal relative deprivation and devaluing. In this instance, participants who felt relative deprivation due to

Table 4 Indirect Effects for Models of Pre-Adolescent and Mid-Adolescent Participants

Indirect paths	Unst.	SE _a	St.
Preadolescents (<i>N</i> = 142)			
PRD → devaluing	.03	.02	.09
PRD → global SE	-.06*	.02	-.15
PRD → academic SE	-.04*	.02	-.09
PRD → behavioral conduct SE	-.04*	.02	-.12
Adolescents (<i>N</i> = 172)			
PRD → devaluing	.04*	.01	.09
PRD → global SE	-.03*	.01	-.08
PRD → behavioral conduct SE	-.02*	.00	-.07
PRD → social acceptance SE	-.01	.01	-.05
PRD → close friendship SE	.01	.00	.05
Discounting → global SE	-.06*	.02	-.07
Discounting → behavioral conduct SE	-.05*	.02	-.07
Discounting → social acceptance SE	-.05*	.02	-.08

Note PRD personal relative deprivation, Unst. unstandardized coefficient, SE standard error, St. standardized coefficient

^aRobust solution

* $p < .05$

chronic disadvantageous comparisons between the self and classmates in terms of academic performance, reported less academic self-esteem and were more likely to devalue success in academics. Both modifications significantly improved model fit (see Table 3) and indicated that personal relative deprivation plays an important role in the academic experience. Paths between the disengagement mechanisms (discounting, devaluing) and close friendship self-esteem as well as social acceptance self-esteem did not reach significance. In addition, results did not support the links between devaluing and the measures of self-esteem. These non-significant parameters were removed from the model. The final model resulted in a satisfactory fit to the data (see Table 3). All parameters were statistically significant ($p < 0.05$), although a marginally significant path ($p = 0.08$) was obtained between discounting and devaluing (see Fig. 2). Support was found for all indirect effects of the model, with the exception of the indirect relationship between feeling of relative deprivation and devaluing (see Table 4).

An alternative model was tested whereby the direction of each parameter was inverted. Specifically, academic self-esteem, global self-esteem and behavioral conduct self-esteem were correlated, and predicted discounting. Academic self-esteem further predicted personal relative deprivation. In this alternative model, a direct link was added whereby devaluing explained discounting. Finally, both discounting and devaluing predicted personal relative deprivation. This alternative model suggests poor fit, S-B $\chi^2(6) = 52.29$, $p = 0.00$, NNFI = 0.263, RCFI = 0.705, SRMR = 0.151, RMSEA = 0.236, CI [0.179-0.294]. Furthermore, the links between devaluing and discounting, global self-esteem and discounting as well as behavioral conduct

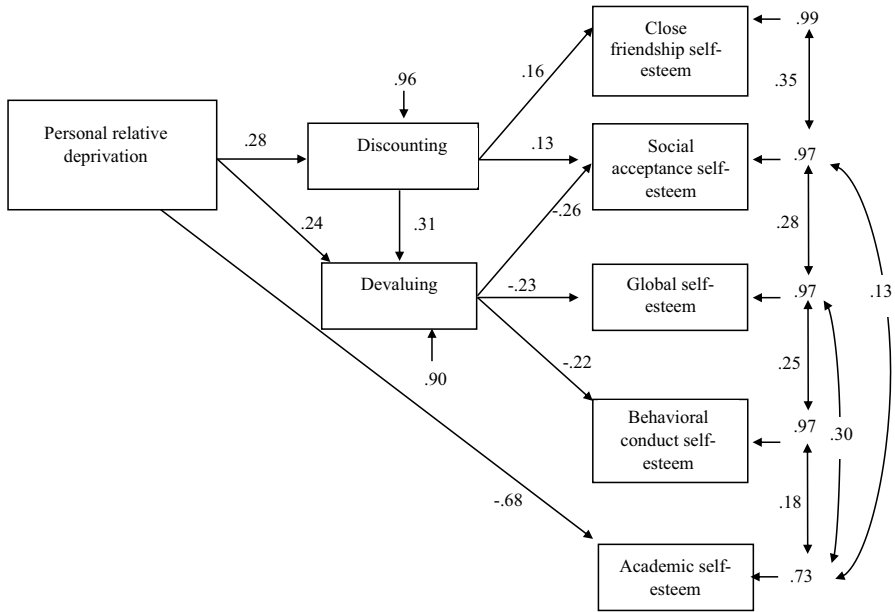


Fig. 3 Standardized robust maximum likelihood solution of the Psychological Disengagement Model among mid-adolescents (N=172). The residual variances reflect the amount of unexplained variance. For each observed variable, $R^2 = (1 - \text{error variance})$

self-esteem and discounting did not reach significance ($p < 0.05$). As a result, the alternative model was not retained.

All in all, the final model supports in part the predictions for early-adolescent participants. Personal relative deprivation was positively associated with both psychological disengagement mechanisms as well as negatively linked with academic self-esteem. Discounting and devaluing played different roles. In this final model, the more participants discounted the validity of academic grades, the less they reported global self-esteem, academic self-esteem, and behavioral conduct self-esteem. In addition, significant covariation was detected between the error terms of all self-esteem measures.

3.3 Path analysis among mid-adolescents

The postulated model was submitted to a path analysis with the sample of mid-adolescent participants. The path analysis did not yield an acceptable fit to the data (see Table 3). Based on the results of the Lagrange Multiplier test, personal relative deprivation was associated with academic self-esteem and devaluing. Both modifications were added to the model and significantly improved the fit to the data (see Table 3). As with the sample of early-adolescents, personal relative deprivation played an important role among mid-adolescent youth in terms of their academic

experience. Specific parameters between the psychological disengagement mechanisms and measures of self-esteem did not reach significance and were dropped from the model. The final model revealed an acceptable fit (see Table 3) and uncovered the unique relationship between the psychological disengagement mechanisms and specific self-esteem dimensions (see Fig. 3). All parameters reached significance ($p < 0.05$), although the path between discounting and social acceptance self-esteem remained marginal ($p = 0.06$, one-tailed). As Table 4 reveals, indirect paths were reliable, with the exception of the indirect links between personal relative deprivation and close friendship self-esteem as well as social acceptance self-esteem.

The direction of all parameters was reversed to test an alternative model. In this alternative model, close friendship self-esteem and social acceptance self-esteem predicted discounting. In addition, social acceptance self-esteem, global self-esteem and behavioral conduct self-esteem explained devaluing. Academic self-esteem accounted for personal relative deprivation. Devaluing predicted discounting. Finally, in this alternative model, both devaluing and discounting explained personal relative deprivation. Correlations between the self-esteem dimensions were included. This alternative model suggests acceptable fit, S-B χ^2 (13) = 22.75, $p = 0.044$, NNFI = 0.908, RCFI = 0.958, SRMR = 0.064, RMSEA = 0.068, CI [0.010-0.113]. However, only three reliable parameters were detected. Personal relative deprivation was explained by discounting, $B = 0.296$, $SE\ B = 0.133$, $p = 0.02$, and academic self-esteem, $B = -1.86$, $SE\ B = 0.136$, $p = 0.001$. In addition, devaluing predicted discounting, $B = 0.429$, $SE\ B = 0.089$, $p = 0.001$. All other parameters did not reach significance. Therefore, since most parameters were not reliable, the final model (see Fig. 3) was preferred.

The final model supports in part the predictions (see Fig. 3). Personal relative deprivation was positively associated with discounting and devaluing while negatively linked with academic self-esteem. In turn, and as expected, discounting the validity of grades was associated with higher social acceptance self-esteem and close friendship self-esteem among mid-adolescent participants. Devaluing, however, dampened social acceptance self-esteem, behavioral conduct self-esteem and global self-esteem. Significant correlations among error terms were obtained among measures of self-esteem.

4 Discussion

In the present study, we tested the PDM with secondary school students, during two different periods of adolescence, early- and mid-adolescence. The first step consisted in testing the links between early experience of personal relative deprivation due to unfavorable social comparisons with other classmates in academic achievement and both mechanisms of psychological disengagement. As expected and according to the PDM, both in early- and mid-adolescence, the more students felt personally deprived in academic achievement compared to their classmates, the more they discounted their grades; discounting in turn predicted devaluing academic achievement, most notably among mid-adolescents. Nevertheless, the findings also showed

another pathway leading to devaluing school achievement. Indeed, for all participants, the experience of personal relative deprivation in academic achievement was also directly associated with devaluing from academic achievement. This direct link between feeling personally deprived in academic achievement and devaluing may be due to unique features of the present population compared to typical populations in previous studies on psychological disengagement model (i.e., adult workers, Beaton et al. 2015; Lagacé et al. 2008; Tougas et al. 2005). Indeed, the present participants were students from disadvantaged neighborhoods and a priority education school. Consistent with our finding, Régner and Loose (2006) also found with a population of disadvantaged secondary-school students attending a priority education school that grades directly and negatively predicted devaluing. Thus, among students from disadvantaged groups, either grades or discontent due to a disparaging comparison with other classmates, predict devaluing from school achievement. The direct link between academic difficulties and devaluing is also consistent with findings obtained with ethnic minorities (Arroyo and Zigler 1995; Fordham and Ogbu 1986; Régner and Loose 2006). Due to their perceived injustice, those who come from low socio-economic backgrounds, live in a segregated environment, and attend at-risk schools are more likely to report disinterest in academics (Fordham and Ogbu 1986; Régner and Loose 2006).

The second step to testing the PDM with secondary school students consisted of examining at two different periods in adolescence, i.e., early and mid-adolescence, whether greater discounting grades and devaluing academic achievement were related to decreased global self-esteem and self-esteem related to academic attainment domains (academic self-esteem and behavioral conduct self-esteem). This second step also offered the opportunity to test whether both psychological disengagement mechanisms were positively associated with self-esteem in the social domains (social acceptance self-esteem and close friendship self-esteem) among mid-, rather than early-adolescents. As expected, the links between both psychological disengagement mechanisms and self-esteem depended on the period of adolescence. In early-adolescence, discounting correlated negatively with global self-esteem and self-esteem in the school attainment domains (academic self-esteem and behavioral conduct self-esteem). Additionally, discounting played the expected mediating and negative role in the link between experience of personal relative deprivation on one hand and both global self-esteem and the school attainment domains of self-esteem on the other hand. However, devaluing from academic achievement did not predict self-esteem in early-adolescence. Moreover, psychological disengagement mechanisms were not associated with peer-approval domains of self-esteem (social acceptance self-esteem and close friendship self-esteem). A different pattern of findings emerged among mid-adolescents. In mid-adolescence, devaluing from academic achievement plays a negative and mediating role in the link between experience of personal relative deprivation on one hand and global self-esteem, behavioral conduct self-esteem and social acceptance self-esteem on the other hand. Yet, and interestingly, discounting played a positive and mediating role in the link between experience of personal relative deprivation on one hand and close friendship self-esteem and social acceptance self-esteem.

Thus, discounting and devaluing have different implications for self-esteem for early- and mid-adolescents. Among mid-adolescent participants, devaluing harms self-esteem (i.e., global self-esteem, behavioral conduct self-esteem and social acceptance self-esteem), whereas discounting is a mechanism that protects self-esteem in peer approval domains (i.e., close friendship self-esteem and social acceptance self-esteem). Among early-adolescent participants, discounting, rather than devaluing, harms global self-esteem and self-esteem in academic attainment domains (i.e., academic self-esteem and behavioral conduct self-esteem), whereas devaluing is not related to self-esteem. Thus, psychological disengagement is negatively associated with global self-esteem through discounting in early adolescence and devaluing in mid-adolescence. Thus, psychological disengagement in academics is likely to explain a part of the lowered global self-esteem observed in literature during the period of adolescence (Orth and Robins 2014; Robins et al. 2002).

Therefore, why do students psychologically disengage in an academic context when it does not always serve to protect self-esteem? In mid- rather than early-adolescence, it seems to be to protect their self-esteem related to peer-approval domains (social acceptance self-esteem and close friendship self-esteem). Indeed, mid-adolescents who discount their academic grades find self-esteem in their relationships with peers. Because only mid-adolescents seem to find protective resources in peers' approval, at least two explanations are conceivable. First, as suggested earlier, the period of early-adolescence with the transition to secondary school and its numerous changes in relationships is a period that may make it more difficult to receive social support from peers. Second, such a result may refer to a peer-group norm (e.g., Davis 2003; Ogbu 1997) which would become gradually salient during secondary school years. Thus, in mid-adolescence, opposing values of school through discounting of grades could be perceived as valued by peers and give mid-adolescents social recognition. Consistent with Sweeting et al.'s (2011) results, mid-adolescents with academic difficulties seek popularity. However, this benefit incurred by discounting among mid-adolescents is met with significant costs. Indeed, discounting predicts devaluing; in turn, in mid-adolescence, devaluing is associated with decreased self-esteem (global self-esteem, social acceptance self-esteem and behavioral conduct self-esteem). Thus, giving up on an important domain of society such as school leads to a loss of personal worth in the school attainment domains as well as a loss of social acceptance from peers. The paradoxical finding on disengagement and social acceptance self-esteem is particularly interesting because it shows that mid-adolescents seem to perceive discounting of grades as acceptable or even rewarding with peers, whereas they seem to perceive devaluing school as leading to reject from peers.

The present results also showed that experience of personal relative deprivation in academic achievement was directly and negatively linked to academic self-esteem, both in early- and mid-adolescents. Such a result supports the argument that an increase in practices of normative grading by teachers in secondary schools (Eccles and Midgley 1989) makes the standards for success explicit, frequent and routine (Cole et al. 2001), leading some students who perceive themselves as poor achievers to doubt their worth in the academic domain.

5 Limitations

The present results must be interpreted with caution due to certain limitations. First, our research was correlational. In addition, we could not control for initial levels of academic grades and global self-esteem. These limitations prevent any firm conclusion about causality. However, this does not undermine the validity of our findings for the predictive relations in our hypothesized model, which were built on the basis of strong theoretical considerations and previous research on the PDM (e.g., Beaton et al. 2015; Laplante et al. 2015; Rinfret et al. 2014; Tougas et al. 2005). Future studies using a longitudinal design and controlling for initial levels of all dependent variables could be helpful to address the causality issue. They could test whether the different harms incurred by devaluing and discounting among mid- and early-adolescent participants may be explained by the extent of the experience of poor academic reputation for mid-adolescents in academic failure.

If as predicted in the PDM (e.g., Beaton et al. 2015; Tougas et al. 2005), early- and mid-adolescents embark gradually on the psychological disengagement road, starting from the mechanism that has less significance in one's life (discounting), leading to one that is more impactful (devaluing), they can also directly opt for devaluing from academics. Indeed, feeling personally deprived due to unfavorable comparisons with other classmates in academic achievement predicts devaluing both in early- and mid-adolescents. However, the present study does not allow one to determine whether this direct link between experience of relative deprivation and devaluing is specific to two periods of adolescence (early- and mid-adolescence) or to our sample of disadvantaged students from a priority education school. It may be that secondary school French students from disadvantaged neighborhoods have developed school rejection in response to their feelings that they are neglected or rejected by the French school system. Thus, another limitation concerns the generalizability of our findings to other groups of adolescents. Future research is needed to test whether these results generalize to older adolescents who attend schools in more affluent neighborhoods.

6 Conclusions and future directions

The present findings offer some clues that help to disentangle the mixed findings concerning the positive or negative link between psychological disengagement and self-esteem. We showed that it is necessary 1) to distinguish between both psychological disengagement mechanisms according to the age of the adolescent; 2) to take into account domain-specific self-esteem. Discounting played a mediating role between experience of personal relative deprivation in academic achievement and self-esteem both in early- and mid-adolescence. However, discounting reduced global self-esteem and self-esteem related to the school attainment domains among early adolescents, whereas it protected both peer-acceptance and close friendship self-esteem among mid-adolescents. Devaluing only appeared as a predictor of decreased global self-esteem, behavioral conduct self-esteem and social acceptance

self-esteem in mid-adolescence. These findings show that secondary school students do not benefit from depreciating academics because this domain is highly valued in our societies (Crocker and Major 1989; Laplante et al. 2015; Major and Schmader 2001). Thus, the relationships obtained in the present study between devaluing and self-esteem refute the self-protective properties of this process. Moreover, contrary to what some authors suggest (Davis 2003; Loose et al. 2012; Ogbu 1997), because devaluing school leads to lowered social acceptance self-esteem, such a psychological mechanism does not seem to be a peer-group norm, at least at early- and mid-adolescence. Instead, devaluing school is likely to lock students into a vicious circle because peer rejection increases the risk for misconduct, and lower participation and interest in school (French and Conrad 2001), which correspond to behavioral disengagement from school. Once this behavioral disengagement has been reached, other very negative consequences are likely to occur as involvement in delinquency, health-risky behaviors, and aggression (Carter et al. 2007; Fredricks et al. 2004; Harachi et al. 2006; Hill and Werner 2006; Jimerson et al. 2003; Simons-Morton 2004; Sinclair et al. 2003).

However, in early-adolescents, the negative impact on self-esteem (both global and in the school attainment domains) was only linked to the temporary process of psychological disengagement, i.e., discounting (Lesko and Corpus 2006; Major and Schmader 1998; Tougas et al. 2005). Therefore, early-adolescence or the first years in secondary school may be key-years to plan a course of action to prevent psychological disengagement in academics, which can be considered as an initial stage before actually behavioral disengagement and dropping out of school. For instance, in an intervention that transformed schools into safe relational spaces, school professionals practiced behaviors that boosted the resilience of students, such as perseverance (Sanders and Munford 2016). Such an intervention is likely to encourage early-adolescents to seek social support from school professionals and thus contribute to their self-esteem in social domains during this period of transition to secondary school. By advocating for a safe relational space, this intervention may also keep mid-adolescents from turning to social support from their peers by discounting their grades. Moreover, Sanders and Munford (2016) also showed that this intervention provided the supports and resources that increased the vulnerable youths' sense of belonging to the school, in spite of feelings of being different from others. As research has shown, school belonging allows early-adolescents from disadvantaged groups to expect greater academic success and competency (Hernández et al. 2014). Further research is needed to test the impact of strategies designed to develop social support in an academic context among vulnerable young adolescents on the psychological disengagement process.

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Compliance with ethical standards

Conflict of interest We declare no conflict of interest.

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