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ORIGINAL ARTICLE

Perceived parenting style and grit as predictors of self-concept of adolescents aged 10-20 in Slovakia

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BACKGROUND
In the present study, we focused on examining the relationship between parenting styles, self-concept, and grit. We conceptualized self-concept as a three-dimensional variable with cognitive, emotional, and conative dimensions. Parenting style was defined using emotional relationships and autonomy granting. The optimal parenting style in our view entails a combination of parental responsiveness (fostering a positive relationship) with an appropriate degree of autonomy granting (defined as providing relative freedom). We hypothesized that adolescent grit and parenting style are related to a positively defined self-concept.

PARTICIPANTS AND PROCEDURE
The present study included 1,483 participants (55.5% female) aged 10-20 years (M = 15.00, SD = 2.60). All participants attended primary and secondary education (ISCED 2 and 3) across five regions in Slovakia. The research methods consisted of administering the Self-Concept Questionnaire-18 (DOS-18), the Parenting Style Inventory PSI-II, and the Grit Scale.

RESULTS
We observed different predictors of self-concept for boys and girls. Shared predictors of self-concept for both sexes included mother's responsiveness, passion, and perseverance as components of grit. The differences were in the non-significance of father's responsiveness and the significance of autonomy granting by the father in relation to self-concept of boys.

CONCLUSIONS
The results of the present research suggest that different parenting approaches may be beneficial for boys and girls. In particular, the role of the father and his ability to support the relative autonomy of the son appears to be important, as evidenced by the fact that boys' self-concept is typically more positive than that of girls.

KEY WORDS
self-concept; parenting styles; grit; adolescence

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BACKGROUND

Self-concept is a mental representation of the Self containing beliefs about who I am. It is dependent on how people who are significant to us perceive us and how we respond to them. Interaction with these significant people (most often parents) extrapolates to all important and other relationships and follows a typical dynamic driven by three dominant motives: (1) self-assessment, the desire to obtain accurate information about oneself; (2) self-verification, the desire to confirm what one knows or believes about oneself; and (3) self-enhancement, the desire to learn something positive about oneself (Baumeister, 2005). Nowadays, the mental representation of oneself is often tied to what one owns, i.e. to material things. It is referred to as brand engagement in self-concept (BESC; Kolańska-Stronka & Gorbaniuk, 2022), in which the motives mentioned by Baumeister are presented. This shift reduces the clarity of self-concept, which is, according to Yuliawati et al. (2024), an essential factor that affects the perception of the meaningfulness of life. This can influence the tendency to exhibit grit, or the effort to achieve personal goals. First, however, we shall describe the model of self-concept.

Self-concept is a complex structure made up of three aspects: cognitive, emotional, and conative. The cognitive aspect is well represented by beneffectance (a compound of the words beneficence and effectance), expressing the tendency to perceive oneself as able to get along with other people and to pursue personally defined goals and their fulfillment (Greenwald, 1980). The emotional aspect of self-concept is represented by self-esteem. Tafarodi and Swann (1995) defined two components of self-esteem: self-competence and self-liking. Self-competence expresses personal beliefs about one's ability to produce desired outcomes through one's own abilities. Self-liking is viewed as the perception of other people's emotional attachment to one's own self. It is closely related to parenting style. The conative aspect of self-concept refers to the perception of oneself as an active agent and source of one's own behavior, i.e. self-regulation. It consists of (1) self-guides as standards for behavior (Higgins, 1991), (2) private and public self-consciousness (Carver & Scheier, 1990) reflecting that one's self-perception may differ from how one is perceived by others, and (3) self-mastery, or the belief in one's own competence (Bandura, 1999). This has a close relationship with grit.

Self-concept develops relatively early in life. We typically expect awareness of self to emerge around age 3 as a consequence of a break in the perceived symbiotic bond between the infant and mother, and as the ability to perceive oneself as a relatively autonomous being. However, the foundations of the Self are formed much earlier. Some authors (e.g., Verny & Weintraubová, 2013) argue that pre-birth experiences play a large role in terms of the child's wants and identifying with the parental role of both the mother and the father. Other authors (e.g., Matějček, 2007, 2008) have written about responsible parenting and that it should be based on the decision to have a child with the right person and at the right time. Many agree that a combination of personal and social factors (e.g., Greenwald & Pratkanis, 1984) interact in the formation of self-concept, resulting in the looking-glass Self (Cooley, 1902). This relational level of self-concept formation represents the current scientific consensus.

We subscribe to the view that parenting (relational) function of the family still requires more research (Steinberg, 2001), especially in view of the fact that the distribution of parenting styles has changed over the last 30 years. Many familial parenting styles consist of the parents' negative attitudes towards children and weak or contradictory parental control (at least in the Slovak and Czech Republic).

Parenting styles were originally derived from the managerial leadership styles as defined by Lewin (1948). We consider his definition to be classic and thus distinguish three basic leadership styles: democratic, liberal and autocratic. Baumrind (1966) draws attention to the distinction between the permissive and neglectful forms of the liberal style. Both forms are defined by a lack of control. The permissive style is defined by a positive relationship with the child, while the neglectful style forms a negative relationship with the child. Recent research indicates that permissive liberal parenting is perceived by adolescents to be similar to democratic parenting.

A fruitful approach to categorizing parenting styles has been used by Darling and Toyokawa (1997). They take into account parental autonomy granting and demandingness. They distinguish between wise parenting (a combination of high granting and high demandingness), neglectful parenting (low granting, low demandingness), permissive parenting (high granting, low demandingness) and authoritarian parenting (low granting, high demandingness). Their approach implies that the optimal parenting style is wise parenting. On the other hand, it should be noted that too much parental control may be contraindicative of effective parenting.

The present research likewise focuses on grit, which Duckworth et al. (2007) defined as a personality trait that combines enthusiasm, effort, interest, and the ability to work hard towards a long-term goal. Grit is also associated with overcoming adversity and coping with stress. It is thus close to self-regulation, which is related to the conative aspect of self-concept. There is a relationship between grit and the conscientiousness factor from the Big Five concept (e.g., Duckworth et al., 2007; Rimfeld et al.,

2016), the latter being defined as regulating impulses to plan and pursue goals. Grit similarly overlaps with other constructs related to self-regulation, self-efficacy, and motivation or commitment (e.g., Credé et al., 2017; Muenks et al., 2018), but also happiness and its social dimension (e.g. Siah et al., 2020). However, none of the other conceptions of grit captures the combination of passion and persistence towards achieving long-term goals in the same way Duckworth did (Duckworth & Quinn, 2009; Rimfeld et al., 2016). Grit is a personality trait largely determined by genetic factors (Rimfeld et al., 2016; Tucker-Drob et al., 2016). However, it can be fostered and developed, and it can also be influenced by external factors. For instance, its development can be influenced by the educational setting (Park et al., 2018), the promotion of a growth mindset (Park et al., 2020) or parental behavior (Howard et al., 2019).

The above-mentioned links between self-concept, grit and parenting styles are supported by research findings in this field. The available results propose the existence of relationships between grit and positive self-concept (Bernard & Pires, 2006), self-esteem, self-efficacy, and self-control (Li et al., 2018). Grit has also been found to correlate with a specific domain of self-concept, academic self-concept, across both emotional and rational components (Yang et al., 2023). The self-concept in adolescents is further strengthened by parental acceptance and support for their autonomy (Zakeri & Karimpour, 2011). Ahn and Lee (2016) also observed a relationship between positive self-concept and positive parenting style in chronically ill adolescents.

Based on the theoretical assumptions and research findings we discussed above, the purpose of the present research was to examine the relationships between self-concept, grit, and parenting styles (Figure S1, Supplementary materials); and to identify which components of the independent variables (responsiveness, autonomy granting and parental demandingness, passion, and persistence) act as predictors of self-concept in adolescents. Our assumption is that the parenting style is directly related to the formation of the basic personality, which in this research is represented by the self-concept. In adolescence, part of the self-concept also comprises character traits, which include grit. We assume that adequate parental upbringing influences the development of grit in adolescents and grit is the mediating factor shaping adequate self-concept.

PARTICIPANTS AND PROCEDURE

RESEARCH SAMPLE

The present study included 1,483 participants (55.5% female) aged 10-20 years (M = 15.00, SD = 2.60). The distribution in terms of their educational attainment was as follows: at the time of data collection, 853 (57.5%) participants were attending elementary school, 335 (22.6%) secondary vocational school, and 295 (19.9%) grammar school. The distribution in terms of the age was as follows: 10 years n = 68 (4.6%), 11 years n = 91 (6.1%), 12 years n = 111 (7.5%), 13 years n = 232 (15.6%), 14 years n = 181 (12.2%), 15 years n = 151 (10.2%), 16 years n = 149 (10.0%), 17 years n = 199 (13.4%), 18 years n = 177 (11.9%), 19 years n = 84 (5.7%), 20 years n = 40 (2.7%). The research sample was recruited based on availability. We contacted students from five regions in the Slovak Republic.

MEASURES

The Self-Concept Questionnaire-18 (SCQ-18; Dolejš et al., 2021; translated into Slovak by Čerešník, 2021a) measures views of the Self across six domains: social adjustment, work and study, physical appearance, resistance towards anxiety, popularity in the collective, meaning and self-realization. Participants express their level of agreement with each statement on a 4-point scale (from *strongly disagree* to *strongly agree*). The McDonald's omega coefficient value for the entire questionnaire was ω = .84.

The Parenting Style Inventory (PSI-II; Darling & Toyokawa, 1997; Slovak modification by Čerešník, 2021b) consists of 30 statements describing parental behaviors (15 statements for the mother's behavior and 15 statements for the father's behavior) across three domains: responsiveness (ω_M = .73, ω_F = .81), autonomy granting (ω_M = .69, ω_F = .69), and demandingness (ω_M = .56, ω_F = .66). Participants express their level of agreement with each statement on a 5-point Likert scale, with the potential range for each dimension being 5-25 points.

The Grit Scale (Duckworth et al., 2007, Slovak modification by Čerešník, 2021c) contains 10 statements through which participants express their level of conscientiousness and perseverance despite setbacks and obstacles, and willingness to work hard on set challenges, using a 5-point Likert scale. In addition to the overall level of grit, it allowed us to distinguish between two separate aspects: passion (consistency of interest) and perseverance (persistence of effort). The internal consistency of the whole questionnaire with the Slovak translation used in the present research was acceptable (ω = .73).

DATA ANALYSIS METHODS

Estimations of measurement reliability were performed using McDonald's omega coefficient. Statistical significance for the difference between genders

was tested using the independent samples *t*-test. In the present paper, we report the results of the comparison between parenting styles of the mother and the father obtained by the paired samples *t*-test. The indicator of substantive significance in the comparative analyses was Cohen's *d*. We assessed the strength of the relationships between the research variables using Pearson's correlation coefficient (*r*). Multivariate analysis was performed using hierarchical regression analysis with self-concept as the dependent variable. Individual aspects of parenting styles and grit were included as predictors in the analysis. We calculated the coefficient of determination to establish the percentage of variation in self-concept explained by its relationship with these predictors. Cohen's f^2 was used as a measure of effect size. Standardized residuals and Cook's distance were assessed before we performed the regression analysis. We used the Durbin-Watson test to identify autocorrelations. The presence of multicollinearity was tested using measures of tolerance and variance inflation factor (VIF).

ETHICAL ASPECTS OF RESEARCH

The present research was conducted under the grant task GAAA/2022/18 Parental Support, Demandingness and Their Relationship to Adolescent Grit, approved by the Ethics Committee of Pan-European University. Participants and their legal guardians were informed about the important ethical aspects of the research (voluntary participation, privacy, possibility to refuse participation in the research or to terminate at any time without consequences). All administered methods are freely available for academic and non-commercial purposes.

RESULTS

The descriptive statistics for the entire sample as well as the results of the comparison between boys and girls are presented in Table 1. We found a difference in self-concept favoring boys with medium effect size (d = .43). Boys also scored higher on the grit questionnaire (d = .29), on perception of responsiveness (d = .25), and on the demandingness of the father's parenting (d = .32). Differences in assessing the mother's parenting were statistically significant, but their substantive significance was small.

The results from the analysis of differences in maternal and paternal parenting style on the subsample of boys indicated a small difference in the degree of perceived responsiveness, which was higher coming from the mother (d = .13). Higher responsiveness (d = .35) and demandingness (d = .15) coming from the mother were perceived similarly by girls (Table 2).

The correlation between age and research variables was negligible. We found a weak negative relationship only with the mother's demandingness (r = −.23, p < .001) and the father's responsiveness (r = −.21, p < .001).

Given the sex differences we found, we conducted further analyses on two sub-samples, separately for girls and boys.

In the sub-sample of girls, we found medium effect size relationships between self-concept and responsiveness by both parents, as well as autonomy granting by the mother. In the sub-sample of boys, the

Table 1

Intersex differences in research variables

	Whole sample *M* (*SD*)	Boys *M* (*SD*)	Girls *M* (*SD*)	*t*	*p*	Cohen's *d*	95% CI for *d*	
							Lower	Upper
Self-concept	48.00 (7.90)	49.80 (7.10)	46.50 (8.10)	8.25	< .001	.43	.33	.54
Grit	31.80 (6.40)	32.80 (6.00)	31.00 (6.60)	5.59	< .001	.29	.19	.40
Passion	14.30 (3.90)	14.90 (3.80)	13.80 (3.90)	5.28	< .001	.28	.17	.38
Perseverance	17.50 (4.00)	17.90 (3.90)	17.10 (4.10)	3.74	< .001	.20	.09	.30
Responsiveness (M)	18.50 (3.90)	18.30 (3.30)	18.60 (4.30)	−1.26	.208	−.07	−.17	.04
Autonomy granting (M)	17.10 (3.60)	17.50 (3.40)	16.90 (3.80)	3.26	.001	.17	.07	.27
Demandingness (M)	17.10 (3.10)	17.40 (3.00)	16.90 (3.20)	2.97	.003	.16	.05	.26
Responsiveness (F)	17.20 (4.40)	17.80 (4.00)	16.80 (4.70)	4.74	< .001	.25	.15	.35
Autonomy granting (F)	17.20 (3.70)	17.50 (3.20)	17.00 (4.00)	2.50	.013	.13	.03	.23
Demandingness (F)	16.80 (3.60)	17.40 (3.20)	16.30 (3.70)	6.14	< .001	.32	.22	.42

Note. M – mother; F – father.

Table 2

Comparison of the perceived parental style of the mother and the father

	Mother *M* (*SD*)	Father *M* (*SD*)	*t*	*p*	Cohen's *d*	95% CI for *d*	
						Lower	Upper
Whole sample							
Responsiveness	18.50 (3.90)	17.20 (4.40)	10.15	< .001	.26	.21	.32
Autonomy granting	17.10 (3.60)	17.20 (3.70)	−0.82	.411	−.02	−.07	.03
Demandingness	17.10 (3.10)	16.80 (3.60)	3.11	.012	.08	.03	.13
Males							
Responsiveness	18.30 (3.30)	17.80 (4.00)	3.32	< .001	.13	.05	.21
Autonomy granting	17.50 (3.40)	17.50 (3.20)	−0.07	.954	−.01	−.08	.07
Demandingness	17.40 (3.00)	17.40 (3.20)	−0.65	.508	−.03	−.10	.05
Females							
Responsiveness	18.60 (4.30)	16.80 (4.70)	10.01	< .001	.35	.29	.42
Autonomy granting	16.90 (3.80)	17.00 (4.00)	−0.98	.332	−.03	−.10	.03
Demandingness	16.90 (3.20)	16.30 (3.70)	4.34	< .001	.15	.08	.22

level of self-concept was positively correlated with perceived responsiveness of both parents (medium effect size; r = .43 for the mother and r = .35 for the father). Contrary to girls, the boys' self-concept was related to autonomy granting by the father (medium effect size; r = .34). The correlation with autonomy granting by the mother had a low effect size (r = .28). In both sub-samples, the relationship between self-concept and perceived parental demandingness was negligible. As the level of grit increased, positive self-concept increased for both girls (r = .55) and boys (r = .51). The values of the correlation coefficients between the research variables, including the individual dimensions of self-concept, are presented in Tables S1 and S2 (Supplementary materials).

For regression analyses with self-concept as the dependent variable, we first included responsiveness and autonomy granting (parental style characteristics) by both parents as predictors. Demandingness in the parenting style of the mother and father was not significantly correlated with self-concept; the variables were therefore excluded from the analysis. In a second step, we determined the percentage of the variance in self-concept explained after adding the two dimensions of grit.

We excluded two outliers in the sub-sample of girls based on analysis of standardized residuals. After adjustment, the data met the assumptions for performing regression analysis (std. residual min = −3.09, std. residual max = 3.15; Cook's distance = .02). The data also met the assumption of independent errors (Durbin-Watson value = 1.84). The assumption of normality of the distribution in the dependent variable was not violated, with shape coefficients for skewness = −.06 and kurtosis = .06. Tests to determine whether the data met the assumption of collinearity indicated that multicollinearity was not a concern. The VIF for each variable ranged between 1.15 and 1.71, while tolerance ranged between .58 and .87. One outlier had to be removed in the sub-sample of boys. Values of the statistical assumptions were satisfactory: std. residual min = −2.79, std. residual max = 3.20; Cook's distance = .05, Durbin-Watson value = 1.71, VIF = 1.05-1.74, tolerance = .57-.95. The self-concept of boys had a symmetrical distribution (skewness = −.20; kurtosis = .52).

In the sub-sample of girls, a model that included only parenting styles explained 25% of the variance in self-concept (F(4, 815) = 69.29, p < .001, R^2 = .25, $R^2_{adjusted}$ = .25, f^2 = .33). After adding the two aspects of grit, the percentage of explained variance increased to 42% (F(6, 813) = 98.66, p < .001, R^2 = .42, $R^2_{adjusted}$ = .42, f^2 = .72). In the final model, the degree of self-concept was significantly predicted by responsiveness of the mother (β = .21), responsiveness of the father (β = .11), passion (β = .18), and persistence (β = .35). Autonomy granting by the parents was not a significant predictor of self-concept in girls (Table 3).

In the sub-sample of boys, similar to girls, parenting styles explained 25% of the variance in the self-concept (F(4, 654) = 54.25, p < .001, R^2 = .25, $R^2_{adjusted}$ = .25, f^2 = .33). The final model, which included grit as a predictor, explained 40% of the variance in the data (F(6, 652) = 71.35, p < .001, R^2 = .40, $R^2_{adjusted}$ = .39, f^2 = .66). According to our findings,

Table 3

Results of stepwise regression analysis with self-concept of girls as the dependent variable

	β	95% CI for β		*t*	*p*	*F*	R^2 (ΔR^2)
		Lower	Upper				
Step 1							
Responsiveness (M)	.34	.49	.77	8.79	< .001	69.29***	.25
Autonomy granting (M)	.10	.05	.38	2.54	.011		
Responsiveness (F)	.16	.16	.40	4.56	< .001		
Autonomy granting (F)	.05	−.05	.24	1.27	.203		
Step 2							
Responsiveness (M)	.21	.26	.52	5.88	< .001	98.66***	.42 (Δ = .17)
Autonomy granting (M)	.06	−.02	.27	1.72	.086		
Responsiveness (F)	.11	.09	.30	3.53	< .001		
Autonomy granting (F)	.05	−.04	.22	1.39	.166		
Passion	.18	.26	.50	6.34	< .001		
Perseverance	.35	.57	.81	11.50	< .001		

Note. ***p < .001; M – mother; F – father.

Table 4

Results of stepwise regression analysis with self-concept of boys as the dependent variable

	β	95% CI for β		*t*	*p*	*F*	R^2 (ΔR^2)
		Lower	Upper				
Step 1							
Responsiveness (M)	.30	.47	.84	6.97	< .001	54.25***	.25
Autonomy granting (M)	.05	−.08	.26	1.08	.279		
Responsiveness (F)	.11	.04	.34	2.48	.011		
Autonomy granting (F)	.20	.25	.61	4.76	< .001		
Step 2							
Responsiveness (M)	.22	.30	.64	5.46	< .001	71.35***	.40 (Δ = .15)
Autonomy granting (M)	.02	−.10	.20	0.62	.540		
Responsiveness (F)	.04	−.06	.22	1.11	.273		
Autonomy granting (F)	.17	.21	.53	4.49	< .001		
Passion	.19	.25	.48	6.12	< .001		
Perseverance	.33	.48	.72	9.73	< .001		

Note. ***p < .001; M – mother; F – father.

the level of self-concept in boys can be predicted by the level of the mother's responsiveness (β = .22), autonomy granting by the father (β = .17), and both aspects of grit (β = .19 for passion and β = .33 for perseverance). We report the results of the hierarchical regression analysis for the sub-sample of boys in Table 4.

DISCUSSION

The aim of the present research was to investigate the relationships between self-concept, grit and parenting styles in a population of Slovak adolescents aged 10-20 years as we mentioned in the end of the introduction. We found higher levels of self-concept, grit,

and perceived responsiveness and demandingness by the father in boys compared to girls. In contrast, no differences were found in evaluating the mother's parenting style. The results also indicate several differences in perceiving attributes of the mother's and father's parenting style that we examined. Boys perceived mothers to be more responsive compared to fathers. Girls also report higher levels of responsiveness by the mother, but also demandingness.

Based on the results of the present research, we concluded that with an increase in the level of individual grit, responsiveness by both parents and also autonomy granting from the mother, the level of positive self-concept in girls increases as well. Significant predictors of self-concept in girls included parental responsiveness, passion, and perseverance. For boys, an increase in positive self-concept was associated with grit, parental responsiveness, and autonomy granting by the father. The responsiveness of the mother and autonomy granting by the father, along with passion and persistence, were predictors of self-concept in boys.

Comparing the present results with previous other research focused on the relationships of self-concept, grit, and parenting styles supports the coherence of the present study. Grit was related to positive self-concept as reported by Bernard and Pires (2006). These authors argued that if one feels good doing an activity and performs well at it, one wants to keep doing it and focus on fine-tuning the details, which leads to mastery and feeling good. Li et al. (2018) found a strong positive relationship between grit and self-esteem, self-efficacy, and self-control. Meanwhile, self-esteem as an emotional aspect of self-concept had a direct and positive relationship with life satisfaction. Grit also predicts school achievement and self-concept in adolescents (e.g., Dweck et al., 2014; Farrington et al., 2012; Yang et al., 2023). Similarly, Beck et al. (2014) reported grit among the top 6 non-cognitive factors that predict school success. The others included growth mindset, self-control, goal setting, social intelligence, and delayed gratification. We also found a medium effect size relationship between grit and self-concept in the context of the present research. This leads us to assume that adolescents who are not discouraged by failure, who work hard, are conscientious and diligent, overcome obstacles to master significant challenges, do not lose interest in initiating an activity or executing an idea, and have a more positive self-concept.

Self-concept in adolescents is also dependent on the responsiveness of parents. This involves the ability to confide in the parents about problems, receiving praise for success, time spent together, open communication, and the knowledge that the child can rely on the parent when solving problems. Our results are consistent with findings on the role of the father, especially that granting autonomy is very important in raising boys and fostering their positive self-concept. Positive self-concept in boys is linked to the father's parenting style, as defined by respecting the child's privacy, providing freedom, opportunities to choose, and accepting the right to one's own opinion and expression. On the contrary, perceived demandingness in parenting, i.e. expecting compliance with family rules, or punishment for inappropriate behavior, was not related to self-concept in adolescents. Zakeri and Karimpour (2011) similarly reported that self-esteem in adolescents is reinforced by parental acceptance and support for their autonomy. Findings from research in a population of adolescents with chronic illness support the importance of a positive parenting style that promotes positive self-concept through emotional closeness and rational explanations. Conversely, a negative parenting style will undermine self-concept through inconsistency, overprotection, and unreasonable expectations (Ahn & Lee, 2016).

We presented and interpreted the findings from the present research with several limitations in mind. The cross-sectional design of the study was unable to identify causal relationships or temporal succession of events. The current family situation and feedback for the adolescents in the form of their parents' and peers' behavior or, for instance, grades in school at the time of data collection, could have had a significant influence on their self-reported responses. Participants may not have been able to consider, for instance, the parent's preferred parenting style or overall self-esteem, and the levels of agreement with the questionnaire items may have been strongly dependent on the situation. We also consider reducing the attributes of parenting styles to responsiveness, autonomy granting, and demandingness to be a limitation. Especially the Responsiveness subscale appears to be problematic, because it does not fully present the emotional dimension of parenting style. Rather, it is a combination of rational and emotional dimensions. Future longitudinal research focusing on multiple attributes of parenting behaviors, as well as research on the congruence in perceived parenting styles and self-concept between adolescents and their parents, could further develop understanding in this field.

Supplementary materials are available on the journal's website.

Disclosures

This research was conducted under the grant task GAAA/2022/18 Parental support, demandingness and their relationship to adolescent grit, approved by the Ethics Committee of Pan-European University.
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