

The Relationship Between the Dark Triad and Junior High School Students' Satisfaction with School Life: the Chain Mediating Effect of Sense of Control and Sense of Meaning in Life

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Abstract: This study explored how dark triad characteristics affect junior middle school students' satisfaction with school life, and further explored the chain mediating role of individual sense of control and sense of life meaning in this association. The study adopted standardized assessment tools, including the Twelve Dark triad questionnaire to measure the dark triad trait, combined with the sense of control scale, the sense of life meaning scale and the school life satisfaction questionnaire, to conduct a comprehensive survey of 416 junior high school students. The results showed that there was a significant negative correlation between the dark triad and junior middle school students' sense of control, sense of meaning in life and school life satisfaction. Meanwhile, junior high school students' sense of control, sense of life meaning and school life satisfaction are positively correlated. Further analysis reveals that the dark triad not only indirectly affects school life satisfaction through the single path of sense of control or sense of life meaning, but also has a profound impact through the chain mediation mechanism of the two. Specifically, this mediating effect accounts for 22.14% (only through sense of control), 22.54% (only through sense of life meaning) and 18.19% (through the combination of sense of control and sense of life meaning) of the total influence of dark triad on school life satisfaction, respectively. This finding highlights the importance of focusing on and intervening with dark triad characteristics in middle school students, and the value of enhancing sense of control and sense of meaning as potential avenues for improving school life satisfaction.

Keywords: Junior high school students; Dark triad; School life satisfaction; Sense of control; A sense of meaning in life

The period of junior high school students is a special transitional stage in the course of life, in which the individual's physical and mental state experiences great development and change^[1]. Life satisfaction refers to an individual's assessment of his or her own life quality, and is the core cognitive factor of subjective well-being^[2]. School life satisfaction is the embodiment of life satisfaction in the school environment^[3]. Research shows that junior high school students have a low evaluation of school life satisfaction^[4], and long-term dissatisfaction with school life is likely to lead to psychological and behavioral problems such as negative emotions, Internet addiction, and weariness^[3]. Therefore, research on the influencing factors and internal mechanisms of junior middle school students' satisfaction with school life is conducive to improving their psychological quality, learning and life quality.

There are many influencing factors to school life satisfaction^[5]. Agreeableness, responsibility and emotional stability all contribute to the improvement of individual school life satisfaction^[6]. The Dark triad, as a special antisocial personality trait group, is composed of Machiavellianism, narcissism and psychopathy, and is often represented by low levels of agreeableness, conscientiousness and emotional stability^[7]. Research confirms that the dark triad has a significant negative impact on life satisfaction^[8]. School life satisfaction, as a specific manifestation of life satisfaction in the school domain, may also have a negative relationship with the dark triad. Therefore, this study hypothesizes H1: Dark triad significantly negatively predicts school life satisfaction of junior middle school students.

Those with dark traits adopt fast life history strategies, have reward sensitivity, and pursue external performance goals^[9]. According to the life history theory, individuals weigh limited survival resources according to their early survival environmental cues, and then produce two different life history strategy tendencies: fast and slow. The sense of control is the internal drive in this process^[10]. People with fast life history strategies have poor living environment quality in the early period, and use irrational behaviors such as instant benefit satisfaction to reduce uncertainty and maintain a sense of control^[10], with a low level of control^[11]. Long-term pursuit of external goals is easily influenced by external uncertainties, resulting in lack of sense of control^[12]. At the same time, the sense of control, as a part of the satisfaction of autonomy

needs^[13], also has an important impact on life satisfaction^[14]. Therefore, this study hypothesizes that H2: sense of control plays an intermediary role between the dark triad and junior high school students' satisfaction with school life.

Dark triad traits are also associated with subjective experience of meaning in life. Studies have found that the higher the tendency of the dark triad, the lower the level of life meaning^[15]. Sense of life meaning also affects life satisfaction^[16]. When they understand the school experience, find a direction to work towards, and discover their academic value, adolescents have a better evaluation of school adaptability and quality of life. Therefore, this study hypothesized that H3: sense of meaning in life plays a mediating role between the dark triad and junior high school students' satisfaction with school life.

There is also a close relationship between the sense of control and the sense of meaning in life. The sense of control is related to individual adaptability^[17]. Controllable perception of learning status and interpersonal relationship helps junior middle school students understand their own experience and produce clear goal planning. Studies have confirmed that there is a significant positive correlation between sense of control and sense of meaning in life^[13]. Therefore, this study hypothesized that H4: sense of control and sense of life meaning play a chain-mediated role between the dark triad and junior high school students' satisfaction with school life.

1. Object and method

1.1 Object of study

In this study, a total of five junior middle schools in Jiangsu Province were selected by convenient sampling, and an online questionnaire survey was conducted in May 2024. Students participated in the questionnaire according to the principle of voluntary participation. In the end, a total of 423 questionnaires were distributed, and 416 valid questionnaires were obtained after missing values and invalid questionnaires were excluded. There were 196 males (47.12%) and 220 females (52.88%), aged 14.21 ± 1.64 years old. There were 120 cases (28.85%) in the first day of junior high school, 152 cases (36.54%) in the second day of junior high school, 144 cases (34.61%) in the third day of junior high school, 260 cases (62.5%) in only child and 156 cases (36.88%) in non-only child.

1.2 Research Tools

1.2.1 The Dark Twelve

Select the Chinese version of the dirty dozen (DD)^[18]. Each question is scored from 7 Likert points, ranging from "completely disagree" to "completely agree". The total score was calculated as an indicator of the subjects' dark triad. The higher the score, the stronger the individual's tendency to dark personality. The reliability of this measurement tool in this study was 0.85.

1.2.2 School life satisfaction questionnaire of junior middle School students

School Life Satisfaction rating Questionnaire for Junior Middle School students is used, which has 12 items^[3]. The subjects are asked to evaluate each item according to their feelings in the past six months with 5 Likert points, ranging from "very dissatisfied" to "very satisfied". A higher score represented a higher level of satisfaction with school life. The reliability of this scale in this study was 0.89.

1.2.3 Perceived control scale

The Chinese version of Perceived Control Scale is adopted, which contains 12 items^[19]. The subjects will scale each statement from "completely disagree" to "completely agree" on a 7-point Likert scale. When the dimension of sense of limitation is inverted, the higher the total score, the stronger the sense of control. The reliability of the sense of control scale in this study was 0.78.

1.2.4 Meaning in life questionnaire

The Chinese version of Meaning in Life Questionnaire (MLQ) was used^[20]. In this paper, the Meaning of Life Experience Subscale (MLQ-P), consisting of 5 questions, was used to score Likert on a 7-point scale from "strongly disagree" to "strongly agree". The higher the score, the higher the level of an individual's sense of life meaning experience. The reliability of this scale in this study was 0.85.

1.3 Statistical Methods

SPSS 23.0 was used for common method deviation test, descriptive statistics and correlation analysis. All variables were normalized or virtualized (assigned 0 to male students and 1 to female students; The only child was assigned 0, and the non-only child was assigned 1), and the regression analysis between the independent variable and the dependent variable was carried out. Model 6 in the Process macro program (Bootstrap method was randomly iterated 5 000 times) was continued to analyze the chain mediation effect. In this study, $P < 0.05$ was considered as significant difference.

2. Results

2.1 Common Method Bias

Harman single factor test was used to test the common method bias. The results show that 8 factors with feature roots greater than 1 are

extracted under unrotated conditions, and the explanatory power of the first common factor is 22.16%. Therefore, there is no serious common methodological bias in this study.

2.2 Correlation analysis among variables

After controlling for gender, age, grade and only child, partial correlation analysis was carried out. The results showed that the dark triad was significantly negatively correlated with sense of control, sense of meaning in life and satisfaction with school life. The sense of control, sense of life meaning and school life satisfaction were significantly positively correlated. This is shown in Table 1.

2.3 Analysis of the mediating effects of sense of control and sense of life meaning on the dark triad and school life satisfaction

First, after controlling for demographic variables such as gender, the predictive effect of dark triad as an independent variable on school life satisfaction was examined. Regression coefficients showed that the dark triad was a significant negative predictor of school life satisfaction ($\beta = -0.254$, $SE = 0.055$, $P < 0.001$), assuming H1 was validated.

Secondly, the mediating effects of sense of control and sense of meaning in life on the dark triad and school life satisfaction were analyzed. Chain mediation effect analysis shows that sense of control and sense of life meaning play a completely mediating role between the dark triad and school life satisfaction, as shown in Figure 1. Specifically, mediating path 1: the indirect effect of dark triad \rightarrow sense of control \rightarrow school life satisfaction accounted for 22.14% of total effect; Mediating path 2: dark triad \rightarrow sense of life meaning \rightarrow indirect effect of school life satisfaction accounted for 22.54% of the total effect; Mediating path 3: dark triad \rightarrow sense of control \rightarrow sense of life meaning \rightarrow school life satisfaction accounted for 18.19% of the total effect. All the above path coefficients do not include "0" in the 95% confidence interval, indicating that the three indirect paths are statistically significant, as shown in Table 2. This result validates hypotheses H2, H3, and H4 in this study.

Table 1. describes the statistics and correlation matrix (n = 416)

Variables	Score ($\bar{x} \pm s$)	1	2	3	4
1 Dark Triad	36.33 +/- 12.44	1			
2 Sense of control	51.12 +/- 10.41	0.334 ***	1		
3 Sense of meaning in life	22.54 +/- 6.78	0.297 ***	0.454 ***	1	
4 School life satisfaction	42.83 +/- 7.73	0.253 ***	0.358 ***	0.454 ***	1

Note: ***P < 0.001

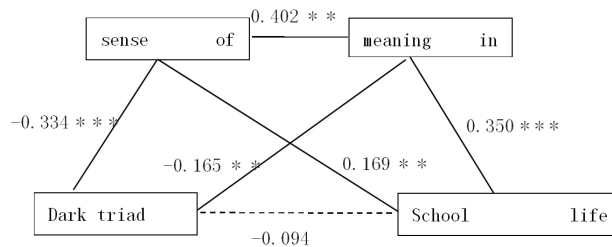


Figure 1. Diagram of the chain mediation model

Note: **P < 0.01; ***P < 0.001

Table 2. Chain-mediated effects

Paths	Effect size	Boot Standard Error	95%CI Lower Limit	95%CI upper limit	Relative mediating effect (%)
Direct effect	0.093	0.054	0.198	0.013	36.77
Total Indirect effect	0.160	0.035	0.238	0.101	63.25
Mediating Path One	0.056	0.025	0.113	0.015	22.14
Mediating Path Two	0.057	0.024	0.116	0.017	22.54
Mediating Path Three	0.046	0.015	0.086	0.024	18.19

3. Discuss

3.1 Dark Personality Triad and satisfaction with school life in Middle school students

Based on the relationship between personality and school life satisfaction, this study found that the dark triad negatively affected junior middle school students' life satisfaction level in the school field. Individuals with high dark triad tendency are often egocentric and indifferent, and are more prone to aggressive behavior and antisocial behavior. Such middle school students may have difficulty in maintaining good

interpersonal relationships on campus, lack of emotional and social support, have difficulty in emotional regulation, and have a low cognitive evaluation of school life quality. This study also found that the dark triad can influence their life satisfaction in the school domain through the mediating effects of the sense of control and the sense of life meaning alone and the mediating effects of the two together.

3.2 The chain mediating effect of sense of control and sense of meaning in life

First of all, the results of the influence of dark triad on school life satisfaction through sense of control show that the higher the level of dark triad, the lower the level of sense of control, and the lower the school life satisfaction. The formation of dark personality is often related to low quality parenting style and insecure attachment in early childhood^[21], and the early bad parent-child relationship destroys the sense of control of individuals when they grow up^[22]. Individuals with high levels of dark traits also use the fast life history strategy of instant gratification to gain a sense of control^[9]. For example, middle school students with high dark triad tendencies focus only on external performance goals such as grades. While this approach can temporarily reduce uncertainty, it is more susceptible to external factors, which is not conducive to maintaining a stable level of control. At the same time, junior high school students with low sense of control may have difficulty in coping with pressure better and lack autonomy and environmental adaptability^[17], resulting in lower satisfaction with school life.

Secondly, the dark triad also affects the school life satisfaction through the sense of life meaning, which indicates that the dark triad reduces junior middle school students' sense of life meaning and thus their school life satisfaction. According to Frankl, individuals can experience the sense of meaning of life only in the process of pursuing self-transcendence. Altruism and selflessness are the essence of self-transcendence^[23]. The dark triad, due to self-centeredness and emotional deficits, is significantly negatively correlated with altruistic behavior and makes it difficult to maintain healthy intimate relationships. Chronically confined to self and self-interest, middle school students with high dark triad tendencies are unable to experience more of a sense of meaning in life. Low sense of life meaning may also cause junior high school students to lack the cognitive continuity of school life experience, fail to establish clear academic development goals, reduce their self-worth, and fall into a negative state of aimlessness and low self-worth^[24]. Therefore, the dark triad has a negative impact on junior middle school students' perception and evaluation of school life quality by reducing their sense of life meaning.

Thirdly, the sense of control has an indirect effect on the satisfaction of school life through the sense of life meaning. A high level of sense of control effectively promotes positive self-evaluation, goal pursuit and positive action^[25], which is conducive to individuals' meaningful life. Low levels of control can lead to negative emotions and withdrawal behaviors^[25], and even form learned helplessness, which destroys the experience of meaning in life. As mentioned above, sense of meaning in life is an important factor affecting life satisfaction and subjective well-being. Therefore, the dark triad can indirectly affect the school life satisfaction of middle school students by controlling the path of feeling the sense of life meaning.

The results of this paper preliminarily indicate the internal mechanism of the dark triad affecting school life satisfaction, and also enrich and confirm the current research on the relationship between personality and life satisfaction. This study suggests that while cultivating junior high school students' academic development, schools should pay attention to the uniqueness of each child, set up reasonable academic planning, give full free space for development, increase their sense of autonomy and control and sense of life meaning, so as to improve school life satisfaction and promote the healthy growth of junior high school students.

4. Conclusion

The dark triad was significantly negatively associated with a sense of control, meaning in life, and satisfaction with school life. There was a significant positive correlation between sense of control, sense of meaning in life and satisfaction with school life. The dark triad indirectly predicted the school life satisfaction of junior middle school students through the mediating effect of sense of control and sense of life meaning respectively. The dark triad indirectly predicted the school life satisfaction of junior middle school students through the mediating effect of sense of control → sense of life meaning.

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