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Self-control and Problematic Behaviours among Incarcerated Juveniles: Coping Strategies as a Mediator

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Abstract

Problematic behaviour among juveniles has long been a concern for the general public on a worldwide basis. 4,833 juveniles offences were reported in 2019, according to the Department of Statistics Malaysia. This study aims to examine the association between self-control, coping strategies and juvenile problematic behaviours by using coping strategies as mediators. This cross-sectional quantitative study included 229 juveniles from six juvenile rehabilitation residential institutions, also known as Sekolah Tunas Bakti in Malaysia (86.9% male and 13.1% female). A Malay version of the Self-Control Scale (Grasmick et al., 1993), The Brief-COPE Scale (Muhamad Saiful, 2011) and the Strength and Difficulties Questionnaire (Goodman, 1997) were used to examine the relationships among self-control, coping strategies and juvenile problematic behaviours. The key findings revealed that dysfunctional coping strategies mediates the association between self-control and juvenile problematic behaviours since the relationship between self-control and juvenile problematic behaviours has been widely researched in past studies. Using coping strategies as mediators, these findings supporting the notion of Gallagher's Personality-Coping-Outcome Theory. To the extent of practical contribution, the Malaysian government and Sekolah Tunas Bakti may employ the study's findings to create effective prevention or intervention initiatives that could eventually lower the number of juvenile criminal conducts.

Keywords: Self-control, Coping strategies, Problematic behaviours, Juvenile

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Introduction

Over the decades, problematic adolescent behaviour has been a global issue that has aroused public concern. In 2019, the Department of Statistics Malaysia indicated 4,833 juvenile crimes, including 4,248 first-time offenses and 585 repeat offenses. Furthermore, based on a comparative study, scholars revealed that there was 28 percent of teenagers reported negative behaviours (e.g., bullying, physical fighting, and school violence) (Mat Hussin et al., 2014) in Malaysia, which is higher than 13.3 percent of Dutch adolescents (Jansen et al., 2011) in the Netherlands. Taking this into account, recent scholars have suggested that the Malaysian government should prioritize the issue of problematic behaviours among Malaysian adolescents (Azam et al., 2019).

Past research in this area agree that problematic behaviours among juveniles are a broad topic encompassing various components. Hence, a prominent scholar, Goodman (1997), indicated that problematic behaviours comprise four main components: (a) conduct problems, (b) emotional symptoms, (c) hyperactivity, and (d) problems with peer relationships. Firstly, conduct problems include aggression, resistance, disruptive conduct, rule-breaking, and deception among adolescents (Thomas, 2010). Secondly, emotional symptoms are characterized by the daily presence of hopelessness, irritability or poor temper, nervousness, and difficulty sleeping (Meilstrup et al., 2015). It is a clinically significant psychological symptom, including signs of depression (Charbonneau et al., 2009; Moksne et al., 2010) and anxiety (Byrne et al., 2007). Thirdly, hyperactivity is an individual's tendency to move around continuously without any reason, act impulsively, and speak excessively (National Institute of Mental Health, 2022). The 5th Edition of Diagnostic and statistical manual of mental disorders (American Psychiatric Association, 2013) revealed that hyperactivity might impair adolescents' functioning and development. Lastly, peer relationship problems refer to peer rejection and peer harassment (Boivin, 2005) when juveniles do not conform to their group (Rubin et al., 2009). Peer relationship difficulties may result in social withdrawal (Jonathan & Song, 2015), victimization (Rubin et al., 2009), and loneliness at school following peer rejection (Weeks & Asher, 2012).

Adolescents' problematic behaviours can cause significant economic and social impacts on the rest of society (Welsh et al., 2008). Economically, the government must spend massive resources on juvenile detention. Additionally, juveniles who engage in problematic behaviours may suffer long-term negative repercussions, such as the loss of liberty and missed academic opportunities while incarcerated. From a societal standpoint, the consequences of adolescents' problematic behaviour may impose a social burden on society. Such negative consequences include the possibility of future unemployment, jeopardizing the community's safety and security, and creating potential emotional stress on their respective family members.

A growing number of literatures indicate that self-control is one of the most significant concepts in social and behavioural sciences (Pechorro et al., 2017). Self-control is "the self-initiated regulation of thoughts, feelings, and actions when enduringly valued goals conflict with momentarily more

gratifying goals." (Duckworth et al., 2019, p. 374). Among the pioneering scholars who have discussed this concept are Gottfredson & Hirschi (1990), who have proposed that self-control modifies one's responses to forego immediate gratification for long-term benefit. Self-control influences the execution of various tasks that involve the suppression of undesired impulses or the attentional modulation of targets against distractors (Duckworth & Kern, 2011). When an individual decides based on circumstances, self-control is necessary to help suppress basic instincts, such as resisting temptations, controlling thoughts, or persevering on complex cognitive tasks.

The conventional view of self-control in criminology is that it is a unique personality feature that emerges early in childhood and remains impressively consistent throughout one's life (Eisenberg et al., 2014). According to the general theory of crime, self-control is an essential factor in preventing juvenile problematic behaviours, as criminal behaviour includes any problematic behaviour that arises due to a lack of self-control and the availability of crime options (Gottfredson & Hirschi, 1990). Also, Gottfredson and Hirschi (1990) claimed that the influence of self-control is invariant across age, ethnicity/race, and gender groupings. To illustrate, Gottfredson and Hirschi (1990) stated that self-control is linked to problematic behaviours and that the degree of this effect is identical in both female and male offenders.

The claims of Gottfredson and Hirschi are supported by empirical evidence. For example, research by De Ridder et al. (2012), Hay and Meldrum (2015), Walters (2016), and Tehrani and Yamini (2020) underscored the crucial importance of self-control in understanding conduct disorders, delinquency, aggression, and other related problematic behaviours. Past research also indicated that individuals with high self-control are less likely to engage in problematic conduct (Bobbio et al., 2019; Burt et al., 2020; Tim, 2017; Vazsonyi et al., 2017). Moreover, juveniles with high self-control are more likely to be involved in prosocial behaviours, attain higher achievements, maintain satisfying relationships, and create better mental and physical health (Clinkinbeard et al., 2018; DeLisi, 2013). Meanwhile, other research also found that individuals with low self-control are likelier to engage in problematic conduct (Muftić & Updegrove, 2018). According to past studies, impulsiveness, a personality characteristic linked to those who lack self-control, is a risk factor for problematic behaviours among incarcerated juveniles, including suicidal behaviour (Mai et al., 2021; Nofziger & Callanan, 2016) and substance misuse (Knowles et al., 2020; Mai et al., 2021).

Besides self-control, scholars have revealed that an adolescent's coping strategy is also a significant predictor of problematic behaviour. Past scholars such as Carver (2019) and Lazarus and Folkman (1984) have defined 'coping' as an individual's thoughts and behaviours to deal with internal and external demands of stressful circumstances. Moreover, Cooper et al. (2008) have classified coping strategies into three categories: (a) problem-focused, (b) emotion-focused, and (c) dysfunctional. A problem-solving coping strategy will be geared toward resolving or moderating pressures. In other words, those that employ a problem-solving method will seek answers to their problems. Emotion-focused coping aims

to control or influence the emotional response. Individuals who practice emotion-focused coping will manage their emotional reactions to stress (Weinstein et al., 2009). Finally, a dysfunctional coping strategy is a maladaptive approach that helps an individual reduce perceived stress but not the overall stress level (Chao & Wang, 2013).

Based on past literature, Orgiles et al. (2021) and Ting et al. (2019) found that a problem-focused coping strategy was negatively associated with problematic behaviours, indicating that a problem-focused coping strategy helps reduce emotional symptoms. In addition, Power et al. (2021) also stated that a problem-focused coping strategy, specifically was significant in creating a healthy mental condition. Meanwhile, according to a review conducted by Guerreiro et al. (2013), researchers revealed that an emotion-focused coping strategy, specifically avoidant coping strategy was positively associated with self-harm behaviours among juveniles. Furthermore, past researchers have discovered a positive association between dysfunctional coping and problematic behaviours. For instance, Palupi & Findyartini (2019) found out that dysfunctional coping, such as behaviour disengagement, denial, self-distraction, substance use, venting and self-blame was linked to problematic behaviours such as emotional exhaustion and cynicism.

Since past studies have shown the links between self-control and problematic behaviours, as well as the links between coping strategies and problematic behaviours in adolescents, this suggested a possible link between self-control and coping strategies, as advocated by Agnew (2013), who stated the need to emphasize personal characteristics such as self-control and how it influences coping strategies. Some studies have supported the relationship between self-control and coping strategies. For example, Silovsky et al. (2019) found that educating juvenile offenders on impulse control and coping skills aid in the reduction of problematic behaviours. Besides, Galla and Wood (2015) have proven that individuals with high self-control are more likely to use problem-solving strategies. Moreover, Qutaiba (2021) stated that juveniles with low self-control tend to seek more passive coping skills. Similarly, Fuente and Cardekke-Elawar (2011) found that individuals with low self-control prefer emotional coping strategies, such as seeking emotional support from friends. Furthermore, an individual with low self-control frequently resorts to unhealthy coping mechanisms, such as dysfunctional coping strategies (Boals et al., 2011; Englert et al., 2011; Turanovic & Pratt, 2012).

Since there are associations between self-control and problematic behaviours (Bobbio et al., 2019; Burt et al., 2020; Tim, 2017; Vazsonyi et al., 2017), coping and problematic behaviours (Horwitz et al., 2010; Palupi & Findyartini, 2019), as well as self-control and coping, (Silovsky et al., 2019), they indicate that a mechanism exists that links these three variables together.

Research Aims

This study uses the personality-coping-outcome theory to examine the mechanism that associates self-control, coping strategies, and problematic behaviours among detained juveniles in Malaysia. A lack of studies has been conducted

on self-control, coping strategies, and problematic behaviour among incarcerated juveniles in Malaysia. According to Gallagher (1996), in the personality-coping-outcome theory, when individuals encounter stressful circumstances, their personality trait influences their coping strategies in various ways, affecting their adjustments. In other words, a coping strategy can be a mediator between self-control and juveniles' problematic behaviours.

Accordingly, it is expected that besides the direct effects of self-control and coping strategies on problematic behaviours, coping strategies also indirectly affect the effects of self-control on problematic behaviours. In other words, a complementary mediating model is a mechanism that associates the three variables. The hypotheses and conceptual framework are as follows:

H1: There is a negative association between self-control and juveniles' problematic behaviours.

H2a: There is a negative association between problem-focused coping strategies and juvenile's problematic behaviours.

H2b There is a positive association between emotion-focused coping strategies and juvenile's problematic behaviours.

H2c There is a positive association between dysfunctional coping strategies and juveniles' problematic behaviours.

H3a: There is a positive association between self-control and problem-focused coping strategies.

H3b: There is a negative association between self-control and emotion-focused coping strategies.

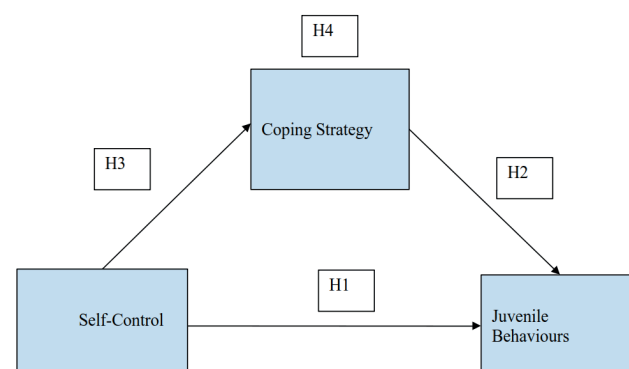
H3c: There is a negative association between self-control and dysfunctional coping strategies.

H4a: Emotion-focused coping strategy is a partial mediator for the effects of self-control on juvenile's problematic behaviours.

H4b: Problem-focused coping strategy is a partial mediator for the effects of self-control on juvenile's problematic behaviours.

H4c: Dysfunctional coping strategy is a partial mediator for the effects of self-control on juvenile's problematic behaviours.

Fig. 1. Conceptual Framework



Method

Participants

The current study enrolled 229 incarcerated juveniles between the ages of 12 and 18 (mean=16.88 years old; SD=1.13) from

all six juvenile's special rehabilitation centre (Sekolah Tunas Bakti) in Peninsular Malaysia. One hundred ninety-nine males (86.9 percent) and 30 females were included in the sample (13.1 percent). Sekolah Tunas Bakti is a government-run organization in Malaysia dedicated to assisting and educating juvenile criminals. Sekolah Tunas Bakti is a rehabilitation institution established under Section 65 (1) of the Children Act 2001 for rehabilitating and caring for juveniles involved in crime. The objectives of Sekolah Tunas Bakti are to provide education for juveniles to build their positive attitudes, form strong personalities, and equip themselves with practical skills that will enable them to live independently in society.

The current study employed the Monte Carlo Power Analysis, specifically its online calculator, in sample calculation (Schoemann et al., 2017). The criteria of the setting are as follows: The standard deviation and correlation coefficient (r) of juveniles' self-control, coping strategies, and problematic behaviours were recorded from the pilot study, power=.80, α =.05, 5000 replication and the Monte Carlo Draws per Rep was 20,000. The results showed that the minimum sample size of the current conceptual framework must be larger than 213 respondents.

Instruments

The questionnaire survey was used to investigate the association between self-control, coping strategies, and juvenile problematic behaviours.

Strength and Difficulties Questionnaires, SDQ: The 25-item Malay version of self-reported Strength and Difficulties Questionnaires, SDQ-Nurulhuda et al., 2019-was used in this study to measure juvenile behaviours. It was translated from the original English version of SDQ (Goodman, 1997). It consisted of 20 items of difficult behaviours and 5 items of prosocial behaviours. The 20-item difficult behaviours will be adopted in the current study. For each item, a 3-point rating scale (0= not true; 1= somewhat true and 2= certainly true) rates the attribute applicable to the juveniles themselves. A sample item includes "Often lies or cheats." The scoring system is described and accessible at www.sdqinfo.com. A higher total score on the four difficult behaviour subscales indicates more severe problematic behaviours. The Cronbach's alpha of the Malay version of SDQ was 0.7, indicating a reliable scale (Nurulhuda et al., 2019).

Self-control Scale: The 18-item Malay self-control scale (Mohammad Rahim et al., 2013) was used in this study to measure juveniles' self-control. It was translated from the original English version of the self-control scale (Grasmick et al. 1993). The Malay self-control scale is a unidimensional scale and consists of 18 items. For each item, the measure ranges from 1: (strongly disagree) to 5: (strongly agree). A sample item includes "I often act on the spur of the moment." A high score of the item indicates a low level of self-control. A few items were reverse scored, including items 2, 4, 5, 8, 11, 12, 13 and 16. The score of 18 items can be added together to get the total score, which indicates each juvenile's self-control. In the current study, a higher total score indicates a higher self-control among juveniles. The Cronbach's alpha of the Malay

version of the self-control scale was 0.8, indicating a reliable scale (Mohammad Rahim et al., 2013).

Brief COPE: The 28-item Malay Brief-COPE (Muhamad Saiful, 2011) was used in the current study. The questionnaire was translated from the original English Brief-COPE (Carver 1997). The questionnaires contain 14 subscales, including self-distraction, active coping, denial, substance abuse, use of emotional support, use of instrumental support, behavioural disengagement, venting, positive reinterpretation, planning, humour, acceptance, religion and self-blame. Each subscale consisted of two items, which made up 28 items of the questionnaires. According to Cooper et al (2008), the 14 subscales are categorized as three types of coping strategies, including 6 items on problem-focused coping, 10 items on emotional coping and 12 items on dysfunctional coping strategies. For each item, there was a four-point rating scale (1= I haven't been doing this at all; 2= A little bit; 3= A medium amount; 4= I have been doing this a lot) which rates the frequency of juveniles use each coping style. A sample item includes "I've been turning to work or other activities to take my mind off things." A higher total score of each subscale indicates more frequently the juveniles had used that particular type of coping strategy. The Cronbach's alpha of the Malay version of Brief-COPE was 0.83 (Muhamad Saiful, 2011).

Procedures

After getting ethical approval from the university (U/SERC/203/2020), the researcher obtained permission from the Department of Social Welfare Malaysia (Jabatan Kebajikan Malaysia) for authorization to collect data at Sekolah Tunas Bakti.

Based on the Department of Social Welfare Malaysia's approval (JKMM 100/12/5/2: 2020 / 417), the researcher approached all six Sekolah Tunas Bakti in Peninsular Malaysia by phone and email. As all the participants were under 18, guardian consent was needed in the study. As all the juvenile participants were incarcerated in the institute and stayed apart from their parents, the guardian consent forms were obtained from the principal/counsellor from the six Sekolah Tunas Bakti before data collection, besides the research team also provided informed consent forms to the participants, which were attached with the questionnaires. The participants were required to fill in the informed consent form before answering the questionnaires. They were also advised to withdraw at any point if they felt uncomfortable. Moreover, to protect the privacy and confidentiality of the participants, only the study team has access to the collected data.

After getting consent from guardians and participants, a pilot study was conducted in one of the Sekolah Tunas Bakti. The pilot study included 30 participants. Based on the result of the pilot test, the Cronbach's alpha was .71 for the Strength and Difficulties Questionnaires (SDQ), .70 for the Self-control scale, and .78 for the problem-focused coping strategy (Brief-COPE), .79 for emotion-focused coping strategy (Brief-COPE) and .81 for dysfunctional coping strategy (Brief-COPE). A Cronbach's Alpha score of 0.70 implies a reliable and valid survey (Saunders et al., 2015)

The date of actual data collection is based on an email conversation with the principals and counselors of Sekolah Tunas Bakti. Researchers visited Sekolah Tunas Bakti in Marang, Sungai Besi, Taiping, Sungai Lereh, Teluk Ayer Tawar, and Jerantut. Each juvenile participant received an individual survey. The method of purposeful sampling was chosen. Participants must be incarcerated adolescents from Sekolah Tunas Bakti.

Statistical Analysis

The current study employed SPSS and SmartPLS 3.3.3 to analyse data. Firstly, SPSS was used to describe the data. Then, SmartPLS was used to examine the hypotheses. All of the scales in the current study were translated from previous studies and theoretically established. The scales used in the study reflexively specified. Hence, current study employed PLS algorithm (PLS) as PLS algorithm (PLS) could be used for both reflective and formative construct (Garson, 2016). Also, current study employed bootstrapping method to test the path significances and mediation analysis for the variables.

Data cleaning

Multivariate skewness and kurtosis were used to examine the normality of juveniles' behaviour (problematic behaviours), coping strategies (emotion-focused, problem-focused and dysfunctional coping), and self-control (Mardia, 1970). The current study used Web Power, a type of online calculator, to determine the value of Mardia's skewness and kurtosis (Zhang et al., 2018). The results revealed that the data was not multivariate normal, Mardia's multivariate skewness ($= 2.07$, $p < 0.001$) and Mardia's multivariate kurtosis ($= 41.26$, $p < 0.001$). Hence, current study employed the SmartPLS, a non-parametric analytic software to evaluate the study's measurement and structural model as suggested by prominent scholars, namely Hair et al., (2014) and Ramayah et al., (2017). To test the relevance of the path coefficients, the Bootstrapping method with 5000 resamples was also implemented. In addition, the missing values have been marked as 999. The current study applied mean replacement to work with questionnaires with a maximum of 5% missing data.

Overall, final sample consisted 229 participants. The age range of participants was 11 to 18 years ($M = 16.88$, $SD = 1.13$).

Descriptive statistic

Descriptive statistic: Table 1 provides the overview of the variables, specifically showing the mean, standard deviation and minimum and maximum scores of the various subscales.

Tab. 1. Descriptive statistic of all variables

Construct	Minimum	Maximum	M	SD
problem-focused coping	6	30	17.08	4.19
emotion-focused coping	14	50	27.41	6.08
Dysfunctional coping	13	60	28.17	7.32
problematic behaviour	5	30	15.64	4.96
self-control	22	90	48.87	11.53

Results

Measurement Model

Construct Reliability: Composite reliability and Dijkstra and Henseler's rho (ρ_A) are used to assess the reliability of the measurement scales. The findings suggested that the latent constructs of all measurements are acceptable as their composite reliabilities and Dijkstra and Henseler's rho (ρ_A) are above the recommended values of .7 (Hair Jr et al., 2014).

In the current analysis, the average variance extracted (AVE) values are below 0.5, which is less than the recommended threshold. According to Hair et al. (2014), if AVE values are below 0.5, the variance attributed to measurement error surpasses the variance explained by the construct. Nevertheless, Fornell and Larcker (1981) suggested that convergent validity can still be considered adequate even when more than 50% of the variance is due to error, as long as other conditions are met. In our study, although the AVE value is under 0.5, the composite reliability exceeds 0.6. According to Fornell and Larcker (1981), this indicates an acceptable level of convergent validity since the reliability of each measure for the construct, as well as the average variance extracted, can be evaluated analogously.

Tab. 2. Construct reliability of all measurements

Construct	Total Items	Rho_A	Composite Reliability	AVE
coping-problem-focused	10	0.80	0.83	0.31
coping-emotion-focused	6	0.76	0.81	0.32
coping-dysfunctional	4	0.78	0.83	0.44
problematic behaviour	20	0.70	0.74	0.14
self-control	18	0.71	0.76	0.17

Discriminant Validity: The Heterotrait-Monotrait Ratio of Correlations (HTMT)

Criterion was used to examine the discriminant validity of the measurements. According to Henseler et al. (2015), when the indexes of other measurements of the HTMT value is below 0.90, the discriminant validity of the measurements is acceptable (see Table 3).

Tab. 3. Discriminant validities of all measurements

	1.	2.	3.	4.	5.
1. dysfunctional coping					
2. emotion-focused coping	.58				
3. problem-focused coping	.43	.89			
4. problematic behaviour	.63	.57	.50		
5. self-control	.67	.53	.47	.68	

Coefficient of Determination, Effect Size and Collinearity Statistics of Measurements: The results of the analyses were shown in Table 4. The variance inflation factor (VIF) of scales are below 5 indicating that no collinearity issue was found (Hadi et al., 2016). Besides, the results also revealed a medium effect size of the dysfunctional coping strategies on problematic behaviours (Sullivan & Feinn, 2012).

Tab. 4. Coefficient of effect size (f²) and collinearity statistics (VIF) of measurements

Exogenous	Endogenous	R ²	f ²	VIF
self-control	Problem-focused coping strategies	0.04	0.05	1
self-control	Emotion-focused coping strategies	0.10	0.11	1
self-control	Dysfunctional coping strategies	0.29	0.40	1
Self-control	Problematic behaviours	0.29	0.06	1.41
Problem-focused coping strategies			0.00	1.87
Emotion-focused coping strategies			0.02	2.17
Dysfunctional coping strategies			0.08	1.64

Structural Model

The present study adopted a one-tailed bootstrapping test to estimate the association between two variables with a 95% confidence interval. In this study, the gender and age of the respondents serve as control variables. The control variables genders, $p=.12$, age, $p=.23$ are not significant to the problematic behaviours.

Direct Effects

As shown in Table 5, after controlling the gender and age of participants, the result showed that self-control was negatively associated with juveniles' problematic behaviour $p<.001$. In terms of coping strategies, dysfunctional coping strategies were positively associated with juveniles' problematic behaviours, $p<.001$. However, problem-focused and emotion-focused coping strategies were not associated with juveniles' problematic behaviours, $p = .42$ and $.08$, respectively.

Also, self-control was negatively associated with emotion-focused and dysfunctional coping strategies, $p < .001$. Nevertheless, self-control was not significantly associated with problem-focused coping strategies, $p = .08$

Mediating Effects

The Mediating Role of Coping Strategies.

As shown in Table 6, results showed that dysfunctional coping strategies mediate the relationship between self-control and juveniles' problematic behaviours, $p<.001$. However, emotion-focused and problem-focused coping strategies were not a mediator for the association between self-control and juveniles' problematic behaviors.

The specific indirect effect of self-control on juveniles' problematic behaviours through dysfunctional coping strategy was significant, $p<.001$. As the direct effect of self-control on juveniles' problematic behaviours was not significant, the results indicated an indirect only mediating effect (Zhao et al., 2010).

Tab. 5. Results of the Structural Equation Modelling

	Hypothesis	Beta	S.E.	T Values	95% CI	
					Lower	Upper
Juvenile's Problematic Behaviour						
Self-control --> problematic behaviour	H1	-0.44	0.13	3.31***	-0.49	-0.05
Problem-focused coping --> problematic behaviour	H2a	-0.04	0.17	0.20	-0.25	0.32
Emotion-focused coping --> problematic behaviour	H2b	0.11	0.12	1.39	-0.05	0.35
Dysfunctional coping --> problematic behaviour	H2c	0.27	0.12	2.29***	0.02	0.43
Coping strategies						
Self-control --> Problem-focused coping strategy	H3a	-0.209	0.15	1.30	-0.44	0.03
Self-control --> Emotion-focused coping strategy	H3b	-0.31	0.11	2.76***	-0.50	-0.23
Self-control --> Dysfunctional coping strategy	H3c	-0.54	0.09	5.93***	-0.65	-0.41
Control variables						
Age --> problematic behaviour		0.08	0.09	0.89	-0.09	0.23
Gender --> problematic behaviour		0.10	0.09	1.12	-0.06	0.23

* $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Tab. 6. Results of the Mediation Effect (one-tailed test)

	Hypothesis	Beta	SE	T Values	95% CI	
					Lower	Upper
Mediation relationship						
Problem-focused coping strategy as mediator						
self-control -> problem-focused coping -> problematic behaviour	H4a	-0.007	0.06	0.13	-0.13	0.06
Emotion-focused coping strategy as mediator						
Self-control -> emotion-focused coping strategy -> problematic behaviour	H4b	-0.05	0.05	1.05	-0.14	0.02
Dysfunctional coping strategy as mediator						
Self-control -> dysfunctional coping -> problematic behaviour	H4c	-0.15	0.07	2.11***	-0.24	-0.01

* $p<0.05$, ** $p<0.01$, *** $p<0.001$.

Tab. 7. Results of the Mediation Effect (one-tailed test)

	Beta	Std Error	T Values	95% CI	
Mediation relationship				Lower	Upper
Dysfunctional coping strategy as mediator					
Indirect effect:	-0.15	0.07	2.11***	-0.24	-0.01
Direct effect:	-0.23	0.15	1.52	-0.53	-0.04
Total effect:	-0.47	0.13	3.43***	-0.61	-0.32

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Discussion

Juvenile problematic behaviours are critical since they may harm adolescent development and become a social issue in our society. As a result, it is crucial to determine the contributing factors of these behaviours to ensure that policymakers, parents, and educators can pinpoint effective interventions for these juveniles. Throughout the past decades, several scholars have established a relationship between self-control and problematic behaviours in adolescents (Burt et al., 2020), self-control and coping strategies (Silovsky et al., 2019) as well as coping strategies and problematic behaviours among adolescents (Palupi & Findyartini, 2019). These connections imply the presence of a mechanism that associates these three variables. The current study adopted the personality-coping-outcome theory as the theoretical framework to study the relationship between self-control, coping strategies, and problematic behaviours among juveniles. It was expected that besides the direct effect of self-control on problematic behaviour, coping strategies also mediate the effects of self-control on a juvenile's problematic behaviours. A complementary mediating model was proposed. A lack of relevant studies have been conducted among incarcerated juveniles to focus on self-control, coping strategies, and problematic behaviours in Malaysia.

The current study found a significant negative association between self-control and problematic juvenile behaviours. This is aligned with previous studies, which indicated that individuals who lack self-control are impulsive and more prone to participate in hazardous activities (Knowles et al., 2020; Mai et al., 2021; Nofziger & Callanan, 2016; Pratt et al., 2010). In addition, Gottfredson & Hirschi's (1990) general theory of crime also supports the notion, stating that juveniles with low self-control are likelier to engage in problematic behaviours. Individuals who lack self-control are frequently described as individuals who have struggled to regulate their thoughts and feelings and behave rationally. More specifically, Baumeister and Vohs (2004) explained that individuals with low self-control are more inclined to act out provocatively, express higher resentment, and handle confrontations less effectively during irritability.

When looking at the association between coping strategies and problematic juvenile behaviours, the findings found no significant association between problem-focused and emotion-focused coping strategies with juvenile problematic behaviours. These results contradict past research. For example, Orgiles et al. (2021) and Ting et al. (2019) found that a problem-focused coping strategy was negatively associated with problematic behaviours. A Guerreiro et al. (2013) study stated that an emotion-focused coping strategy was positively associated with problematic behaviours among juveniles. The

current study's finding is inconsistent with past studies, maybe because Ting et al. (2019) and Orgiles et al. (2021) conducted the research at secondary schools while the current research obtained its sample from incarcerated institutions. According to Shulman and Cauffman (2011), incarceration impacts how juveniles cope with and handle obstacles. For instance, juveniles from standard schools often employ problem-focused coping strategies (active coping) to find a solution or proper emotionally focused strategies (such as acceptance) to cope with life situations that cannot be changed. Meanwhile, incarcerated juvenile offenders use maladaptive coping strategies, such as dysfunctional coping strategies, to lessen their mental suffering rather than seeking ways to alleviate it. Hence, the current findings showed that no single fundamental coping strategy would be effective for all juveniles (Blum et al., 2012). Moreover, the coping strategies used by ordinary juveniles may be ineffective for incarcerated juveniles. A possible explanation suggested by Grey et al. (2015) that the effectiveness of active coping depends on the resources available. Active coping is effective when resources are high but is ineffective when resources are low. In other words, even if incarcerated juveniles use the problem and emotion focused coping strategy to tackle their problems, they may be unable to find enough resources to cope their problems effectively.

The current study demonstrated a positive association between dysfunctional coping and juvenile problematic behaviours. The findings are consistent with previous studies, suggesting that incarcerated juveniles frequently use dysfunctional coping techniques. For example, Horwitz et al. (2010) demonstrated that people who utilize dysfunctional coping strategies (self-blame) would engage in problematic behaviours. The results may also be explained by Tetzner and colleagues (2017), who stated that adolescence is characterized by challenging transformations and increasing expectations and needs. When individuals struggle or disagree with others during adolescence, they blame themselves to varying degrees. Self-blame is a dysfunctional coping strategy that might raise the risk of behavioral problems, such as depression and anxiety (Jannati et al., 2020).

When looking at the association between self-control and coping strategies among juveniles, the findings found no significant association between self-control and problem-focused coping strategies. The current finding contradicts a study by Hyerin et al. (2020) with 485 university students in Korea. Their findings discovered that individuals with high self-control are more likely to approach problems rationally, such as using a problem-focused coping strategy. Also, the current findings are not aligned with a study conducted by Qutaiba (2021) with 465 college students in Israel. The findings reveal

that high self-control predicts a high level of problem-focused coping strategies. These insignificant results may indicate a contextual effect, as Grey et al. (2015) suggested. The past studies were conducted with college/university students, who are more mature compared with our current sample of incarcerated juveniles. University or college students with high self-control would use rational thinking and action-oriented approach when encountering difficult situations (Qutaiba, 2021). Based on research comparing the maturity of juveniles and adults, scholars indicated that juveniles are less mature than adults. Thus, juveniles are less capable of demonstrating logical and rational thinking during challenges (Cauffman et al., 2018). Hence, this explains why the respondents of the current study, specifically juvenile respondents, are less likely to use problem-focused strategies to cope with challenging situations.

The findings of this study showed a negative association between self-control with emotion-focused and dysfunctional coping strategies. According to past research, an individual's level of self-control affects the sort of coping strategies they pick (Galla & Wood, 2013). Firstly, the current study showed that individuals with high self-control would be less likely to use emotion-focused coping strategies. Furthermore, past studies supported these findings (Qutaiba, 2021; Fuente & Cardekke-Elawar, 2011) by revealing that individuals with low self-control are likelier to use emotion-focused coping strategies. The findings of the negative association between self-control and dysfunctional coping strategies are aligned with past studies, showing that individuals with high self-control seldom use dysfunctional coping strategies. Nonetheless, the effect size of self-control on emotional-focused is small, $f^2 = .11$, while compared to a large effect size of self-control on dysfunctional coping strategy, $f^2 = .39$.

The current findings revealed that a dysfunctional coping strategy was a mediator between self-control and problematic juvenile behaviours, that low self-control incarcerated juveniles who frequently used the dysfunctional coping strategy are more likely to have problematic behaviours. Both Emotion-focused and problem-focused coping strategies were not a significant mediator between self-control and problematic behaviours. As the expectations from the personality-coping-outcomes theory, incarcerated juveniles have tried to use different coping strategies to cope their problems, but those low self-control incarcerated juveniles are more likely to use the dysfunctional coping strategy, and thus they are more likely to involve in problematic behaviours. Those low self-control incarcerated juveniles also used emotional-focused coping strategy, but the use of this coping strategy does not lead to problematic behaviours. Also, the current findings supported a notion proposed by past research. For example, Powers et al. (2020) had conducted a longitudinal research with 1,314 students using a structural equation modelling approach. The data indicated that adaptive coping techniques such as active coping, instrumental support, positive reframing, planning, and acceptance do not affect the relationship between self-control and anxiety behaviour. Meanwhile, the data showed that coping strategies such as denial, substance abuse, behavioural disengagement, and self-blame partially mediate the relationship between self-control and anxiety. According to the findings, students who lack self-control typically engage

in dysfunctional coping techniques, which result in emotional symptoms, such as anxiety (Powers et al., 2020).

Similar findings have been reported in different contexts, such as the studies conducted by Lucke et al. (2023) among 183 undergraduate students; self-control is associated with alcohol problems through a dysfunctional coping strategy, not an emotion- or problem-focused coping strategy. Also, based on the study conducted by Boals et al. (2011) with 723 undergraduate students, individuals with low self-control will use dysfunctional coping strategies which cause adverse outcomes.

From a theoretical standpoint, this study supported the extension of Gallagher's Personality-Coping-Outcome Theory on the study of incarcerated juveniles. Gallagher's Personality-Coping-Outcome Theory states that coping strategies mediate the relationship between personality and outcome variables. The current study found that low self-control incarcerated juveniles are more likely to use dysfunctional coping strategies and, thus, more likely to have problematic behaviours. In terms of practical implications, this study intends to aid the Department of Social Welfare Malaysia (Jabatan et al.) in preventive and intervention programs. Counselors can conduct workshops, seminars, or programs to help juveniles improve their self-control and use positive strategies to cope with their problems to reduce their problematic behaviour by overcoming dysfunctional coping strategies.

The study has several limitations. Firstly, this study encountered limitations primarily due to low Average Variance Extracted (AVE) values for certain constructs, which may suggest potential measurement errors (Hair et al., 2014). While the findings provide valuable insights, it is crucial to acknowledge that these low AVE values could be influenced by several factors, particularly the engagement levels of participants. Given that the participants were problematic juveniles, it is possible that they faced challenges in maintaining focus while responding to the survey questions. To improve participant engagement in future research, incorporating interactive activities between questionnaire sections or dividing the answering process into shorter sessions may be beneficial. Furthermore, low AVE values signify that the constructs may not effectively capture the underlying dimensions they are supposed to measure. As a result, the findings of this study should be viewed as indicative and preliminary rather than conclusive. This limitation underscores the necessity for further research to enhance the validity and reliability of the constructs, indicating that the results may not be applicable beyond the context of this study.

Secondly, the research was conducted within the Malaysian context. The culture of incarcerated institutions in other countries may differ, potentially leading to generalization issues. Therefore, it is recommended that future researchers replicate this study in other countries to test the model and confirm the role of coping strategies as a mediator between self-control and juvenile problematic behaviour.

Conclusion

In conclusion, the findings align with the personality-coping-outcome theory by demonstrating that dysfunctional coping

strategies mediate the association between self-control and problematic juvenile behaviours. Meanwhile, emotion-focused and problem-solving coping strategies need to have this mediation impact. However, the interpretation needs to be cautious due to the limitations. First, the current study's design is cross-sectional. As a result, it takes work to establish a causal relationship between variables. Second, because the current study enrolled only incarcerated juveniles from Malaysia's Sekolah Tunas Bakti, the findings may need to be generalizable to other adolescents enrolled in regular schools in Malaysia. As a recommendation, future research should employ a longitudinal design to establish causal relationships between variables. Finally, future research might include adolescents from regular secondary schools to assess the study's robustness.

Ethical Approval

After getting ethical approval from the university (U/SERC/203/2020), the researcher obtained permission from the Department of Social Welfare Malaysia (Jabatan Kebajikan Malaysia) for authorization to collect data at Sekolah Tunas Bakti.

Data availability statement

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

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Author Contributions

Teoh Xi Yao conducted data collection and analysis and was responsible for writing the manuscript. Siah Poh Chua served as the academic supervisor, while Pung Pit Wan and Gan Su Wan acted as academic co-supervisors, providing guidance and suggestions for improving and revising the paper. All authors contributed to revising the manuscript and approved the final version for publication.

Conflict of Interests

The authors declare that they have no conflict of interests regarding the publication of this manuscript.

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