



The impact of a paradigm shift module based on cognitive behavioral therapy on the subconstructs of self-awareness, attitude, trait, and behavior among criminal offenders

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Abstract: Recidivism remains a persistent challenge in criminal justice, highlighting the need for effective, evidence-based rehabilitation strategies. Despite current programs, many offenders relapse into criminal behavior due to unresolved psychosocial issues. This study examines the effectiveness of the Paradigm Shift Module (PSM), based on cognitive behavioral therapy (CBT), in enhancing self-awareness among criminal offenders—a key factor in behavioral transformation. A quasi-experimental design with pretest and posttest measures was employed. A total of 80 offenders were selected through purposive sampling and divided into two groups: a treatment group that received the PSM intervention and a control group with no intervention. The Paradigm Shift Instrument (PSI), developed by the researcher, was used to assess self-awareness across three subconstructs: attitude, trait, and behavior. The PSI demonstrated strong psychometric properties, with a content validity index (CVI) of ≥ 0.95 and a Cronbach's alpha of .955. Statistical analysis, including paired sample t-tests and multivariate analysis of covariance (MANCOVA), revealed significant improvements in the treatment group. Attitude scores increased from $M = 1.85$ to $M = 3.27$ ($t = -22.910$, $p < .05$); trait from $M = 1.89$ to $M = 3.23$ ($t = -20.916$, $p < .05$); and behavior from $M = 1.89$ to $M = 3.21$ ($t = -21.547$, $p < .05$). The MANCOVA results confirm a significant treatment effect, while age and recidivism history showed no significant influence. The findings indicate that the PSM is a promising and effective intervention for fostering self-awareness, supporting rehabilitation, and reducing the likelihood of reoffending among incarcerated individuals.

Keywords: age; attitude; recidivism; self-awareness; trait

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Introduction

Society continues to face the issue of repeated criminal behavior, despite the government's efforts to rehabilitate offenders and reintegrate them into society. The mission of the Malaysian Prison Department is to develop productive individuals through effective rehabilitation and the delivery of modules based on five core elements: knowledge, attitude, skills, intelligence, and humanity. However, studies have found that many offenders struggle with cognitive conflicts and self-control issues (Chiat, 2021). Jasni et al. (2018) found that the lack of access to continuous rehabilitation programs made former inmates more likely to relapse into drug abuse. Similarly, Samad et al. (2017) emphasized that weak personal character and life pressures contributed significantly to recidivism. Consequently, Visser and Eason (2021a, 2021b) report that many psychologists agree that changing unwanted or negative behaviors requires a shift in thinking patterns, as thoughts and emotions significantly influence behavior. Criminal behavior is often fueled by specific thought patterns that drive individuals toward unlawful actions; therefore, the cognitive behavioral therapy (CBT) approach is utilized to help those with criminal records adjust their attitudes and develop skills to avoid high-risk situations.

Budiyono et al. (2020) also demonstrated that CBT helps inmates identify negative thought patterns and replace them with positive thinking, enhancing their psychological resilience. This approach has also proven effective in helping inmates develop better functional skills and adapt successfully after release. Naeem et al. (2021) found that cultural adaptation of CBT focuses on three main areas: cultural awareness and related issues; assessment and engagement; and adjustment of therapeutic techniques. Their findings also indicate that the past decade has witnessed an increase in the culturally-adapted use of CBT across various settings in Asia, with proven effectiveness.

Furthermore, findings by Miller (2022) and Saxena and Sahai (2024) indicate that while CBT has varied effects across different offender categories, it is generally effective in reducing recidivism, particularly among offenders involved in drug-related crimes, domestic violence, and sexual offences. Therefore, this study aims to examine the effectiveness of the Paradigm Shift Module (PSM), which is based on CBT, in enhancing the subconstructs of self-awareness—namely, attitude, trait, and behavior—among criminal offenders, to reduce their risk of reoffending. The module is also expected to be a valuable reference for prison rehabilitation officers implementing effective rehabilitation programs.

The PSM is conceptually grounded in the principles of CBT and further informed by three major psychological theories: self-awareness theory (Duval & Wicklund, 1972); self-perception theory (Bem, 1972); and social learning theory (Bandura, 1977). These theoretical frameworks collectively support the module's design, content, and delivery, which aims to facilitate internal cognitive transformation and behavioral change among criminal offenders. CBT, developed by Aaron T. Beck and influenced by Ellis's rational emotive behavior therapy (REBT), emphasizes the reciprocal relationship between thoughts, emotions, and behaviors (A. T. Beck et al., 2015; Ellis & Ellis, 2011; Fall et al., 2017). It enables individuals to recognize, evaluate, and modify maladaptive thought patterns contributing to dysfunctional behaviors. In the PSM, CBT is applied through structured cognitive exercises that enhance emotional regulation, disrupt negative thinking, and promote adaptive behavioral outcomes. These processes are essential in addressing the distorted beliefs commonly found among offenders.

Self-awareness theory (Duval & Wicklund, 1972) posits that individuals become motivated to alter their behavior when they know a discrepancy between their actual conduct and internal

standards. In alignment with this theory, the PSM incorporates reflective activities such as “Use of Time,” “Focus,” and “Past Experience,” which are designed to promote metacognitive awareness. These exercises help participants evaluate their behavioral patterns in relation to personal values and societal expectations, thus fostering greater self-regulation and accountability.

Self-perception theory, proposed by Bem (1972) asserts that individuals develop insights about their identity by observing their behaviors and the contexts in which they occur. This perspective is operationalized in the PSM through sessions such as “Self-Perception” and “Writing a New Life Script,” which guide participants in reconstructing their self-narratives and committing to new personal trajectories based on positive behavior and cognitive reframing.

Social learning theory emphasizes that human behavior is learned through observational learning, imitation, modeling, and reinforcement (Bandura, 1977). Within the PSM, this theory is reflected in experiential activities such as “Forming New Behavior,” “Commitment,” and “Self-Discipline,” which focus on behavioral modeling, repetitive practice, and reinforcement of desired behaviors. These elements support the development of new habits through both structured guidance and self-directed action.

In addition to these psychological foundations, the PSM is also philosophically influenced by the paradigm shift concept advanced by Proctor (2021). According to Proctor, paradigms are deeply ingrained mental programs that govern habitual thinking and behavior patterns. He posits that meaningful and lasting change can only occur when individuals reprogram these internal belief systems. The PSM reflects this philosophy by assisting participants in challenging their limiting beliefs; reframing internal dialogues, and adopting a constructive and purpose-driven self-concept. It aligns with the module's overall aim of cognitive realignment as a pathway toward behavioral

rehabilitation. In summary, integrating CBT with these complementary psychological and motivational theories provides the Paradigm Shift Module with a robust theoretical framework. It facilitates a multidimensional approach to offender rehabilitation by addressing cognitive distortions, enhancing self-awareness, and promoting behavioral transformation grounded in psychological theory and personal responsibility.

In the PSM, self-awareness serves as a crucial tool to help criminal offenders assess and modify their attitudes, traits, and behaviors so that these elements are better aligned with societal norms and personal goals. The module is designed to promote holistic rehabilitation and reduce the risk of reoffending through a structured approach emphasizing three key dimensions. The first of these is attitude, which refers to an individual's way of thinking and acting. Through self-awareness, offenders can recognize negative attitudes such as dishonesty, indifference, or resistance to change. The PSM encourages them to use their time more productively and to adopt attitudes that reflect responsibility and a willingness to change.

The second dimension is trait, which encompasses personal abilities, talents, and identity. Self-awareness helps offenders identify their strengths and limitations—such as latent skills or emotional impulsivity—and cultivate resilience and self-confidence to face life's challenges. Finally, behavior, which includes daily actions shaped by routine or habit, is addressed through the PSM's integration of cognitive and social learning techniques. These strategies guide offenders in evaluating whether their behaviors align with their long-term goals and societal expectations, enabling them to replace maladaptive behaviors such as substance abuse or aggression with constructive alternatives that benefit themselves and society.

Empirical evidence indicates that integrating self-awareness strategies with CBT can significantly enhance the effectiveness of inter-

vention programs for criminal offenders. An et al. (2019) and Derlic (2022) report that combining self-awareness training and CBT techniques improves individuals' cognitive and emotional awareness, thereby contributing meaningfully to rehabilitation outcomes. Similarly, Zarghani et al. (2019) emphasize that enhanced emotional self-awareness enables offenders to better understand and regulate their emotional responses, reducing the likelihood of aggressive or criminal behavior. Additionally, Chethiyar and Rukumangadan (2020) found that incorporating CBT techniques into awareness-based interventions enhanced self-regulation and equipped offenders with essential cognitive skills to modify maladaptive thought patterns, particularly those associated with aggression. Collectively, these findings suggest that integrating CBT with self-awareness not only addresses psychological and behavioral deficits, but also fosters more comprehensive and sustainable rehabilitation outcomes.

This study demonstrates that the integration of CBT with structured self-awareness development is effective in enhancing the subconstructs of self-awareness—namely, attitude, trait, and behavior—among criminal offenders. Through the PSM, offenders are guided to reflect on and modify negative attitudes, discover and strengthen personal traits, and replace maladaptive behaviors with more socially acceptable alternatives. The study's novelty lies in developing a comprehensive, theory-driven module that systematically translates the abstract construct of self-awareness into three measurable domains, each supported by specific intervention strategies. This structured approach offers a targeted method for cognitive and behavioral transformation, and presents a practical framework for rehabilitation programs aimed at reducing recidivism through the cultivation of holistic self-understanding and self-regulation.

Consequently, the study aims to examine the effectiveness of the CBT-grounded PSM in enhancing self-awareness among criminal

offenders. Focus was placed on three specific subconstructs of self-awareness: attitude, trait, and behavior. Additionally, the study sought to determine whether age and recidivism history significantly influenced the intervention outcomes within the treatment group. In line with these objectives, it was hypothesized that there would be significant differences in the mean pretest and posttest scores for each self-awareness subconstruct between the treatment and control groups. Furthermore, age and recidivism were expected to demonstrate significant main and interaction effects on the self-awareness outcomes among participants who received the intervention.

Methods

Participants

Ethical approval to conduct the research was obtained from the Human Research Ethics Committee Sultan Idris Education University on September 27 2023, under reference UPSI/PPPI/PYK/ETIKA(M)/Jld. 16(166), together with approval from the Prison Policy Division, Headquarters of the Malaysian Prison Department on November 15 2023, under reference PRIDE.BDK.Rd.500.8/9/1 Jld. 69(4). The study participants were selected using purposive sampling. As Idris (2013) explains, this involves the deliberate selection of individuals who possess specific characteristics relevant to the research objectives and are known to the researcher. This method was chosen because of the linguistic limitations of the prison population, as not all offenders are literate or proficient in the Malay language. The participants were therefore selected based on their alignment with the research focus, thus ensuring that both the treatment and control groups shared similar demographic and psychological characteristics.

The inclusion criteria for the study participants were as follows: a) currently serving a sentence or detention order in a prison or Special

Rehabilitation Center; b) a Malaysian citizen (Malay, Chinese, Indian, or other ethnicities); c) able to read, speak, and write in Malay; d) free from infectious diseases; e) in good mental health; and f) in possession of at least a Lower Certificate of Education (LCE) or Lower Secondary Evaluation qualification.

The sample size was determined using Cohen's power analysis table (Cohen, 1998), which considers statistical power and effect size, particularly for studies with unknown population sizes. For this study, the statistical power was set at .80, with an estimated effect size of .70, based on the recommendations of Periasamy (2017). Accordingly, a total of 80 male participants were selected. All participants were between the ages of 21 and 60 and were serving prison sentences of more than three years for offenses including violent crime, property crime, gambling, prostitution, and drug-related offenses. Prior to participation, all the participants provided informed consent.

To preserve the experimental design's internal validity and minimize treatment contamination, the participants were divided into two groups: a treatment group and a control group. The groups were selected from two prison housing blocks—Block A and Block B. Each block houses approximately 800 inmates. From Block A, which was designated for the treatment group, 100 eligible offenders were identified, with 40 randomly selected to undergo the intervention. From Block B, which was designated for the control group, 120 eligible offenders were identified, with 40 also chosen randomly. The use of separate physical locations for each group not only streamlined the logistical execution of the intervention but also reduced the likelihood of treatment contamination; that is, the unintentional exposure of control group participants to elements of the intervention. This strategy enhanced the methodological rigor and internal validity of the study.

Measures

The Paradigm Shift Instrument (PSI) is a self-developed instrument designed by the researcher and has not been adapted from any existing instrument. Its development is grounded in the principles of cognitive behavioral therapy (CBT), and it is integrated with three major psychological theories: the theory of self-awareness, the theory of self-perception, and social learning theory. The PSI was specifically constructed to measure the level of paradigm shift among criminal offenders undergoing incarceration or detention orders. The development process followed a systematic approach comprising two main phases, as outlined by Yusoff et al. (2018), the construction and validation phases. The construction phase involved item writing, expert panel evaluation, and item revision, while the validation phase included pilot testing, content validity analysis, and reliability assessment. The PSI consists of nine subscales with 63 items—30 positively worded and 33 negatively worded—rated on a four-point Likert scale. The two primary subscales are "thinking" and "behavior," while the seven supporting ones measure self-awareness regarding attitude, traits, and behavior; self-perception through internal and external interpretations; and behavior learned directly and indirectly.

Concerning validity, the PSI underwent a rigorous content validation process involving seven experts with diverse specializations in criminology, correctional psychology, counseling, and module development. This process yielded exceptionally high content validity index (CVI) values, with each scale recording CVI scores of ≥ 0.95 , and the overall average exceeding the threshold of ≥ 0.80 recommended by Davis (1992). Item-level CVI (I-CVI) and scale-level CVI (S-CVI/Ave) were calculated in accordance with Polit et al. (2007). Regarding reliability, the PSI was pilot-tested with participants from the pilot group after completing the intervention sessions. The

Cronbach's alpha coefficients for the three key subscales were: Self-awareness (.871), Self-Perception (.869), and Behavior (.888). The overall Cronbach's alpha for the IPP was .955, indicating a very high level of internal consistency. These values exceed the acceptable threshold suggested by Fraenkel et al. (2008) and Kerlinger and Lee (2000), confirming the instrument's consistency and dependability. In summary, the PSI was meticulously developed to address a specific research gap by providing a reliable and valid tool to measure paradigm shifts in the rehabilitation context of criminal offenders. It is theoretically grounded and psychometrically sound, offering a novel contribution to the field, in which such instruments are scarce.

Each item is rated on a four-point Likert scale ranging from strongly disagree (1), to disagree (2), agree (3), and strongly agree (4). The interpretation of the Likert scale is shown in Table 1, as outlined by Alico and Guimba (2015), which categorizes mean scores into four levels: low, moderately low, moderately high, and high.

Procedure

A pretest and posttest design was employed, involving both a treatment and control groups. Purposive sampling was used to select participants for each group. The control group comprised participants who shared similar criteria with the treatment group, but received no intervention. In contrast, the treatment group participated in the intervention, specifically the Paradigm Shift Module (PSM), which was conducted over two

days and comprised nine sessions, eight strategies, and eleven activities. The PSM is based on CBT and integrated with self-awareness, self-perception, and social learning theories. CBT served as the foundation for the intervention development as this approach emphasizes the relationship between thoughts, emotions, and behaviors, and how negative thinking patterns can be identified and modified to produce more adaptive behavioral changes (J. S. Beck, 2020; Tolin, 2016).

Self-awareness theory (Duval & Wicklund, 1972) proposes that when individuals focus on themselves, they tend to evaluate their behavior based on internal standards, which encourages self-change. Self-perception theory (Bem, 1972) posits that individuals form self-assessments by observing their behavior, especially when internal cues such as emotions or motivations are unclear, while social learning theory (Bandura, 1977) emphasizes that behavior is learned through observation and imitation of social models, and is influenced by rewards, punishments, and self-efficacy beliefs. The integration of these three theories formed a strong conceptual foundation for developing a comprehensive intervention module targeting self-awareness, self-perception, and behavioral change among criminal offenders.

The strategies used in the PSM included time management, focus enhancement, managing past issues, building self-perception, creating a new life script, utilizing the imagination, shaping behavior, and fostering self-commitment. The implementation of the PSM was facilitated by a practitioner

Table 1
Interpretation of Mean Score Range for the Four-point Likert Scale

Mean Range	Scoring Level
1.00 – 1.74	Low
1.75 – 2.49	Moderately Low
2.50 – 3.24	Moderately High
3.25 – 4.00	High

appointed by the researcher, a certified prison rehabilitation officer with more than five years of experience in the Human Development Program and who received specific training to deliver the PSM and administer the PSI.

In addition, pretests and posttests were administered to measure the subconstructs of self-awareness, attitude, traits, and behaviors before and after the intervention for both the treatment and control groups. Based on these comparisons, the effectiveness of the PSM intervention could be determined, specifically, whether it successfully improved the scores of self-awareness, attitudes, traits, and behaviors among criminal offenders.

Data Analysis

The data from the experimental study were analyzed using responses from the PSI

questionnaire completed by the participants. The analysis was conducted in line with the study objectives and hypotheses, aiming to examine the effects of the intervention provided, as shown in Table 2.

The data analysis's primary focus was comparing the results from the paired sample t-test (pretest and posttest) between the treatment and control groups. Additionally, MANCOVA was employed to determine if the age and recidivism factors significantly affected the pretest and posttest results for the self-awareness subconstructs of attitude, traits, and behavior in the treatment group. Data analysis was conducted using the Statistical Package for Social Science (SPSS), version 24.0.

Table 2

Data Analysis

No.	Research Question	Independent Variable	Dependent Variable	Data Analysis
1	Is there a difference in the mean pretest and posttest scores for the self-awareness subconstruct of attitude between the treatment and control groups?	Paradigm Shift Module	Self-awareness Subconstruct of Attitude	Paired Sample t-Test
2	Is there a difference in the mean pretest and posttest scores for the self-awareness subconstruct of trait between the treatment and control groups?	Paradigm Shift Module	Self-awareness Subconstruct of Trait	Paired Sample t-Test
3	Is there a difference in the mean pretest and posttest scores for the self-awareness subconstruct of behavior between the treatment and control groups?	Paradigm Shift Module	Self-awareness Subconstruct of Behavior	Paired Sample t-Test
4	Is there an effect of the age factor and an interaction effect between age and treatment on the mean pretest and posttest scores for the self-awareness subconstructs of attitude, trait, and behavior in the treatment group?	Paradigm Shift Module	Self-awareness Subconstruct of Attitude, Trait and Behavior	Multivariate Analysis of Covariance (MANCOVA)
5	Is there an effect of the recidivism factor and an interaction effect between recidivism and treatment on the mean pretest and posttest scores for the self-awareness subconstructs of attitude, trait, and behavior in the treatment group?	Paradigm Shift Module	Self-awareness Subconstruct of Attitude, Trait and Behavior	Multivariate Analysis of Covariance (MANCOVA)

Results

Data analysis of the self-awareness subconstructs—attitude, traits, and behavior—in the pretest and posttest for the treatment group revealed a significant improvement in the treatment group, who participated in the PSM intervention over nine sessions, compared to the control group, who showed no notable changes. Additionally, the MANCOVA results indicate that the age and recidivism factors did not impact the outcomes. However, only the assumption of normality was assessed. The skewness and kurtosis values for all the dependent variables fell within the acceptable range of ± 1.96 , and Q-Q plots demonstrated approximately normal distributions with no significant outliers. The assumptions of homogeneity of variance-covariance matrices and linearity were not evaluated. The absence of Box's M test and linearity assessments limits the ability to confirm the multivariate assumptions required for MANCOVA fully. Moreover, both age and recidivism were treated as categorical variables rather than continuous interval or ratio-level measures, which compromised their suitability as covariates in the analysis. As a result, the findings derived from MANCOVA should be interpreted with caution. Future research is recommended to test all the underlying assumptions and to ensure that the covariates are measured at appropriate levels to strengthen the validity of the statistical inferences.

Findings on the Self-awareness Subconstruct of Attitude

Table 3 shows the results of the paired sample t-test between the pretest and posttest in the treatment group based on the self-awareness subconstruct of attitude. The results indicate a difference in scores between the two tests in the treatment group. This is because the mean pretest score ($M = 1.8536$, $SD = .21578$) is lower than the mean posttest score ($M = 3.2714$, $SD = .26441$). Additionally, the t-test for the mean difference

between the two tests also shows a significant t-value of -22.910 ($p < .05$).

Table 4 shows the results of the paired sample t-test between the pretest and posttest in the control group based on the self-awareness subconstruct of attitude. The results indicate no significant difference in the scores between the two tests in the control group, as the mean pretest score ($M=2.6321$, $SD=.26458$) is approximately the same as the mean posttest score ($M=2.5964$, $SD=.22152$). Additionally, the t-test for the mean difference between the two tests shows a t-value of $.750$, which is not significant ($p > .05$).

Findings on the Self-awareness Subconstruct of Trait

Table 5 shows the results of the paired sample t-test between the pretest and posttest in the treatment group based on the self-awareness subconstruct of trait. The results indicate a difference in scores between the two tests in the group; the mean pretest score ($M=1.8964$, $SD=.24846$) is lower than the mean posttest score ($M=3.2250$, $SD=.31513$). Additionally, the t-test for the mean difference between the two tests shows a significant t-value of -20.916 ($p < .05$).

Table 6 shows the results of the paired sample t-test between the pretest and posttest in the control group based on the self-awareness subconstruct of trait. The results show no significant difference in the scores in the group. This is because the mean pretest score ($M=2.7179$, $SD=.28661$) is approximately the same as the mean posttest score ($M=2.7321$, $SD=.33493$). Additionally, the t-test for the mean difference between the two tests shows a t-value of $-.255$, which is not significant ($p > .05$).

Findings on the Self-awareness Subconstruct of Behavior

Table 7 shows the results of the paired sample t-test between the pretest and posttest in the treatment group based on the self-awareness

subconstruct of behavior. The results demonstrate a difference in the scores between the two tests in this group, as the mean pretest score ($M=1.8929$, $SD=.26628$) is lower than the mean posttest score

($M=3.2071$, $SD=.23981$). Additionally, the t-test for the mean difference between the two tests shows a significant t-value of -21.547 ($p < .05$).

Table 3

*Comparison of Pretest and Posttest Scores for the Treatment Group
(Self-awareness Subconstruct of Attitude)*

	Mean	Mean Difference	Standard Deviation	t-Value	Significance Level
Pretest	1.8536	-1.41786	.21578	-22.910	.000*
Posttest	3.2714		.26441		

$p < .05^*$

Table 4

*Comparison of Pretest and Posttest Scores for the Control Group
(Self-awareness Subconstruct of Attitude)*

	Mean	Mean Difference	Standard Deviation	t-Value	Significance Level
Pretest	2.6321	.03571	.26458	.750	.458
Posttest	2.5964		.22152		

$p > .05$

Table 5

*Comparison of Pretest and Posttest Scores for the Treatment Group
(Self-awareness Subconstruct of Trait)*

	Mean	Mean Difference	Standard Deviation	t-Value	Significance Level
Pretest	1.8964	-1.32857	.24846	-20.916	.000*
Posttest	3.2250		.31513		

$p < .05^*$

Table 6

*Comparison of Pretest and Posttest Scores for the Control Group
(Self-awareness Subconstruct of Trait)*

	Mean	Mean Difference	Standard Deviation	t-Value	Significance Level
Pretest	2.7179	.01429	.28661	-.255	.800
Posttest	2.7321		.33493		

$p > .05$

Table 7

*Comparison of Pretest and Posttest Scores for the Treatment Group
(Self-awareness Subconstruct of Behavior)*

	Mean	Mean Difference	Standard Deviation	t-Value	Significance Level
Pretest	1.8929		.26628		
Posttest	3.2071	-1.31429	.23981	-21.547	.000*

$p < .05^*$

Table 8

*Comparison of Pretest and Posttest Scores for the Control Group
(Self-awareness Subconstruct of Behavior)*

	Mean	Mean Difference	Standard Deviation	t-Value	Significance Level
Pretest	2.5786		.26272		
Posttest	2.5500	.02857	.23894	.624	.536

$p > .05$

Table 8 shows the results of the paired sample t-test between the pretest and posttest in the control group based on the self-awareness subconstruct of behavior. These indicate no significant difference in the scores in the group. This is because the mean pretest score ($M = 2.5786$, $SD = .26272$) is approximately the same as the mean posttest score ($M = 2.5500$, $SD = .23894$). Additionally, the t-test for the mean difference between the two tests shows a t-value of .624, which is not significant ($p > .05$).

Effect of the Age Factor

Table 9 presents the MANCOVA descriptive analysis results on the interaction effect of the treatment and age factor on the dependent variables. The results indicate that the treatment factor is significant for the mean scores of the pretest and posttest in the treatment group across all three self-awareness subconstructs: the Self-awareness Subconstruct of Attitude with $F(1, 71) = 505.079$, $p < .05$; the Self-awareness Subconstruct of Trait with $F(1, 71) = 326.574$, $p < .05$; and the Self-awareness Subconstruct of

Behavior with $F(1, 71) = 377.861$, $p < .05$. These results demonstrate that the treatment factor has a significant effect on all the dependent variables ($p < .05$), whereas the age factor has no significant effect on any of them ($p > .05$). This indicates that age does not influence the mean pretest and posttest scores for the self-awareness subconstructs of attitude, trait, and behavior.

Effect of the Recidivism Factor

Table 10 presents the MANCOVA descriptive analysis results on the interaction effect of the treatment and recidivism factor on the dependent variables. The results indicate that the treatment factor is significant for the mean pretest and posttest scores in the treatment group across the self-awareness subconstructs: the Self-awareness Subconstruct of Attitude with $F(1, 73) = 279.955$, $p < .05$; the Self-awareness Subconstruct of Trait with $F(1, 73) = 181.598$, $p < .05$; and the Self-awareness Subconstruct of Behavior with $F(1, 73) = 183.555$, $p < .05$. These results demonstrate that the treatment factor has a significant effect on all the dependent variables ($p < .05$), whereas the

recidivism factor has no such effect on any of them ($p > .05$). This means that recidivism does not influence the mean pretest and posttest scores for

the self-awareness subconstructs of attitude, trait, and behavior.

Table 9

Summary of MANCOVA Analysis to Examine the Effect of Treatment, Age, and Age Interaction on the Mean Pretest and Posttest Scores in the Self-awareness Subconstructs of Attitude, Trait, and Behavior

Dependent Variable	Independent Variable	JKD	dk	MKD	F	Significance Level
Self-awareness Subconstruct of Attitude	Treatment	28.889	1	28.889	505.079	.000*
	Age	.213	3	.071	1.239	.302
	Treatment - Age Interaction	.242	3	.081	1.411	.247
Self-awareness Subconstruct of Trait	Treatment	27.107	1	27.107	326.574	.000*
	Age	.164	3	.055	.658	.581
	Treatment - Age Interaction	.060	3	.020	.242	.867
Self-awareness Subconstruct of Behavior	Treatment	25.360	1	25.360	377.861	.000*
	Age	.105	3	.035	.523	.668
	Treatment - Age Interaction	.113	3	.038	.562	.642

$p < .05^*$

Table 10

Summary of MANCOVA Analysis to Examine the Effect of Treatment, Recidivism, and Recidivism Interaction on the Mean Pretest and Posttest Scores in the Self-awareness Subconstructs of Attitude, Trait, and Behavior

Dependent Variable	Independent Variable	JKD	dk	MKD	F	Significance Level
Self-awareness Subconstruct of Attitude	Treatment	16.095	1	16.095	279.955	.000*
	Recidivism	.215	2	.107	1.869	.162
	Treatment - Recidivism Interaction	.104	2	.052	.905	.409
Self-awareness Subconstruct of Trait	Treatment	14.527	1	14.527	181.598	.000*
	Recidivism	.043	2	.021	.268	.766
	Treatment - Recidivism Interaction	.235	2	.117	1.467	.237
Self-awareness Subconstruct of Behavior	Treatment	11.775	1	11.775	183.555	.000*
	Recidivism	.186	2	.093	1.453	.241
	Treatment - Recidivism Interaction	.114	2	.057	.890	.415

$p < .05^*$

Discussion

Self-awareness Subconstruct of Attitude

The study findings reveal that the level of self-awareness of attitude among the participants in the treatment group was at a moderately low level on the pretest, compared to that of the control group, who demonstrated a moderately high level. This imbalance suggests that the participants in the treatment group exhibited a lack of awareness regarding their own attitudes, which could potentially be a contributing factor to their previous criminal behavior. However, following the implementation of the PSM, their level of self-awareness of attitude increased significantly, reaching a high level, while that of the control group remained unchanged. These findings suggest that the PSM effectively enhances participants' ability to identify, evaluate, and modify their attitudes in a constructive manner.

Previous research supports the effectiveness of self-awareness and cognitive-based interventions in improving attitudinal awareness among prison populations. For instance, Chethiyar and Rukumangadan (2020) reported that a six-week awareness intervention involving breathing techniques and guided visualization successfully reduced aggressive behavior among female inmates by enhancing their self-awareness and emotional regulation. This intervention aligns with the PSM approach, which integrates elements of CBT and mindfulness practices into its framework.

Zarghani et al. (2019) found that integrative tauhid group therapy, which combines cognitive approaches with religious values, effectively improved emotional awareness and assertiveness among male inmates. Their findings indicated that active participation in group discussions and value-based reflections facilitated greater understanding and modification of individuals' attitudes. These outcomes support the inclusion of reflective activities in PSM, particularly in fostering attitudinal transformation among offenders.

Similarly, Paleari et al. (2022) demonstrated that excessive self-punishment was negatively associated with inmates' psychological well-being, whereas mindfulness functioned as a mediating factor in reducing its impact. The PSM adopts a comparable strategy through its component Letting Go of Negative Past Experiences, which helps participants release guilt and self-blame, thereby reshaping their attitudes toward their past in a more positive light. Additionally, Praptomojati and Subandi (2020) reported that forgiveness therapy significantly improved self-acceptance among Indonesian inmates, and played a crucial role in restructuring attitudes in a healthier manner.

Further supporting evidence is provided by An et al. (2019) and Song et al. (2021) whose studies indicate that structured mindfulness-based cognitive therapy (MBCT) programs enhance self-awareness and reduce stress and mental health symptoms. These findings underscore the importance of experiential learning over theoretical instruction alone in fostering stable and reflective attitudes. In this regard, the PSM's emphasis on daily mindfulness practices and focusing strategies is seen as a critical supplement in influencing holistic attitudinal change.

Carmo et al. (2024) also reported a significant increase in self-esteem and self-awareness among male prisoners following an 18-session mindfulness-based intervention. While there were no significant changes in levels of depression or anxiety, the improvement in self-awareness was believed to gradually support attitudinal transformation. Petrosino et al. (2021) in their meta-analysis of 22 emotional learning (EL) programs, also observed increased empathy, self-regulation, and awareness among participants—outcomes attributed to the application of mindfulness and self-reflection strategies, which mirror the structural elements of the PSM.

Waleed (2017) emphasized that deep self-reflection and intrinsic motivation were pivotal in shaping positive attitudinal change among former offenders. Self-awareness, prosocial relationships, and access to meaningful employment encouraged them to maintain responsible behavior after release. These findings reinforce the necessity of incorporating robust self-awareness strategies in rehabilitation modules such as the PSM.

Finally, Derlic (2022) concluded that integrating CBT and mindfulness-based interventions (MBIs) enhanced the effectiveness of institutional rehabilitation programs. These combined approaches help participants develop the capacity to remain present, manage negative emotions, and reduce the tendency toward criminal thought patterns. Accordingly, the PSM's structure, which blends CBT and self-awareness theory, is well-positioned to foster positive attitudinal change and reduce the risk of recidivism among offenders.

Self-awareness Subconstruct of Trait

The study findings indicate that the level of trait self-awareness among participants in the treatment group was moderately low during the pretest phase. It suggests that the criminal offenders in this group experienced difficulties in identifying and understanding their traits and characteristics, including emotional tendencies, attitudes, and behavioral reactions. In contrast, the control group demonstrated a moderately high level of awareness regarding their internal attributes and how these traits influenced their actions. Following the implementation of the PSM, the treatment group showed a significant increase in self-awareness of the trait, reaching a moderately high level. In contrast, the control group exhibited no significant change. This increase supports the conclusion that the PSM effectively enhances participants' awareness of personality characteristics contributing to behavioral formation.

This finding is consistent with the work of Lemieux (2020), who found that offenders with awareness of their criminal thinking patterns were more likely to reduce their criminal behaviors through changes derived from enhanced self-understanding. Lemieux emphasized that awareness of thought patterns such as rationalization, moral justification, and denial of responsibility is a critical early step in reshaping maladaptive behavior. In this context, the PSM creates an intervention space that allows participants to identify internal traits that may predispose them to criminal conduct and to develop change strategies through self-reflection and cognitive restructuring.

This approach aligns with CBT principles, which are embedded within the PSM framework. Participants are guided to identify core beliefs and irrational thinking patterns and to replace them with more adaptive alternatives (J. S. Beck, 2020; Tolin, 2016). Techniques such as cost-benefit analysis and cognitive restructuring form the foundation for increased awareness of previously unconscious or denied self-traits.

The self-awareness strategies in the PSM also support the findings of Waleed (2017), who demonstrated that deep self-reflection can lead to increased insight into personal traits such as impulsivity, egocentric tendencies, or excessive social dependency. Those who acquired new insights into these characteristics demonstrated improved decision-making capabilities, facilitating better social adjustment.

In addition, the study by Carmo et al. (2024) contributes to the justification of the PSM's effectiveness in developing trait awareness. Their findings demonstrated a significant increase in self-esteem and self-awareness among incarcerated males following a structured mindfulness-based intervention. It supports the assumption that structured mindfulness training, such as that integrated within the PSM, is effective

in fostering greater self-understanding and in helping participants overcome traits that hinder positive personal development.

The findings of Petrosino et al. (2021) regarding the effectiveness of emotional learning (EL) programs also revealed enhancements in self-regulation, empathy, and awareness through mindfulness and reflective exercises. These dimensions are directly related to trait self-awareness, including recognizing emotional responses, reassessing personal values, and managing emotional impulses. Therefore, including concentration techniques and guided imagination in the PSM is congruent with EL-based interventions to support participants in forming a more positive identity.

In a related context, Arora (2022) reported a significant negative correlation between mindfulness and anxiety, and a positive correlation with attention, acceptance, and present-moment focus. It suggests that mindfulness practices emphasizing non-judgmental acceptance of internal traits can enhance emotional stability and self-evaluation. Within the PSM structure, strategies such as present-moment focus and self-forgiveness are used to build a foundation for accepting past traits, while promoting the development of more balanced and constructive personal characteristics.

Derlic (2022) demonstrated that integrating CBT with mindfulness-based interventions (MBIs) helps inmates recognize and manage internal traits that may lead to criminal behavior. These findings reinforce the theoretical basis of the PSM, which combines both approaches in assisting offenders to identify traits such as narcissism, emotional vulnerability, or avoidance tendencies, and subsequently to reshape their cognitive framework towards a more meaningful life.

Self-awareness Subconstruct of Behavior

The study findings demonstrate that the level of self-awareness of behavior among the

participants in the treatment group was at a moderately low level during the pretest phase. In contrast, the control group demonstrated a moderately high level. This initial difference suggests that before the intervention offenders in the treatment group were less aware of how their behavior affected themselves and their surroundings, compared to those in the control group, who appeared to possess a higher degree of self-reflection regarding their actions. Following the implementation of the PSM, the treatment group recorded a significant increase in self-awareness of behavior, rising to a moderately high level. In contrast, the control group's remained unchanged, showing no significant differences. These results suggest that the PSM effectively enhanced participants' ability to identify, evaluate, and modify maladaptive behaviors.

Self-awareness of behavior is a critical component of the change process, as it enables individuals to understand the consequences of their actions on themselves and others. In this regard, the findings of this study are consistent with the results reported by Song et al. (2021), who found that mindfulness-based training enabled participants to face internal experiences without automatic reactions, thereby improving their capacity to regulate behavior and respond more adaptively in challenging situations. Within the PSM structure, strategies such as revisiting past actions and analyzing behavioral patterns allow participants to reevaluate their behaviors and develop more socially appropriate responses.

Furthermore, the application of CBT in the PSM targets identifying and restructuring thoughts that drive problematic behavior. As Beck (2020) and Tolin (2016) noted, CBT focuses on the automatic thoughts and core beliefs that underlie emotional and behavioral responses. In the PSM, techniques such as concentration, guided imagery, and cognitive restructuring are used to strengthen participants' self-regulation and behavioral

competencies. These elements increase their awareness of how their behavioral choices affect long-term goals.

In addition, Derlic (2022), in a review of the effectiveness of CBT and MBIs within correctional systems, emphasized that integrating these two approaches led to a reduction in aggressive behavior and enhanced reflective self-awareness. The structure of the PSM, which combines CBT and self-awareness strategies, aligns with these findings by helping participants process their internal experiences more consciously and gradually modify their behavioral responses.

Effect of Age and Recidivism Factors

The MANCOVA results on the interaction effect of treatment and age factor on the dependent variables indicate that the treatment factor significantly impacted the mean pretest and posttest scores in the treatment group across all three self-awareness subconstructs: attitude, trait, and behavior. This finding demonstrates that this factor significantly affects each self-awareness subconstruct. In contrast, the age factor and the interaction between age and treatment were not significant for the mean pretest and posttest scores across the subconstructs, suggesting that age does not influence the effectiveness of the treatment in the corresponding group. These results align with studies by Kamaruddin et al. (2019) and Ai et al. (2019), which concluded that age and age-related interactions did not impact the desire for change or levels of aggressive behavior among offenders.

Additionally, the MANCOVA results on the effects of the recidivism factor and interactions involving recidivism showed that the treatment group's mean pretest and posttest scores did not become significant for any of the three self-awareness subconstructs. Therefore, the findings indicate that recidivism factor and their interactions do not affect the effectiveness of treatment. The MANCOVA analysis also confirmed that the treatment factor significantly affected the

treatment group's mean pretest and posttest scores across all three self-awareness subconstructs. This finding further supports the significant impact of the treatment factor on self-awareness. It aligns with previous research by Ai et al. (2019) and Olver et al. (2018), who reported that recidivism factors do not influence aggression levels or lead to significant behavioral changes among offenders.

The study findings contribute meaningfully to the theoretical development of offender rehabilitation by operationalizing the abstract construct of self-awareness into three measurable domains: attitude, trait, and behavior. This conceptual clarity provides a robust foundation for future psychological models and intervention frameworks targeting criminal behavior. From a practical perspective, the PSM offers a structured, theory-driven tool for rehabilitation officers and correctional institutions. The integration of CBT with self-awareness strategies enables the development of tailor-made interventions that address offenders' cognitive and behavioral needs. The PSM can be effectively utilized within institutional settings to enhance offenders' emotional regulation; promote personal accountability; and support the internalization of prosocial values—elements essential for long-term desistance and reintegration into society. Moreover, its modular structure allows for adaptation to different cultural and institutional contexts, making it a versatile resource for broader crime prevention initiatives.

Despite its contributions, this study has several limitations. First, the quasi-experimental design without randomization may introduce selection bias, affecting the internal validity of the findings. Second, the sample consisted solely of male offenders, predominantly of Malay ethnicity, which limits the generalizability of the results to female offenders or those from other ethnic backgrounds. Third, the short duration of the

intervention did not allow for the assessment of long-term outcomes or sustained behavioral changes. Additionally, the use of age and recidivism as categorical variables rather than continuous measures may have constrained the accuracy of the multivariate analyses. Future research should adopt randomized controlled designs, include more diverse and representative samples, and conduct longitudinal follow-ups to evaluate the enduring effects of the PSM. Expanding its application to community settings and non-incarcerated populations could also help assess its broader utility as a preventive and empowerment tool.

Conclusion

In conclusion, the Paradigm Shift Module (PSM) represents a novel and impactful contribution to correctional psychology and offender rehabilitation by providing a structured, theory-driven framework that integrates CBT, self-awareness theory, self-perception theory, and social learning theory. This integration offers a multidimensional approach to rehabilitation by operationalizing the abstract construct of self-awareness into three measurable subconstructs—attitude, trait, and behavior—thereby equipping

offenders with the cognitive tools necessary to evaluate, challenge, and transform maladaptive patterns of thinking and behavior. The study findings indicate that the PSM significantly improves self-awareness across these domains, regardless of age or recidivism history, highlighting its potential applicability across diverse offender populations and correctional settings. Beyond behavior modification, the module fosters emotional regulation, self-reflection, and personal accountability, essential for long-term desistance and successful reintegration into society. Its flexible structure makes it suitable for cultural adaptation and implementation in various institutional and community contexts. Nonetheless, to further substantiate the efficacy and generalizability of the module, future research should employ randomized controlled trials, include longitudinal follow-up assessments, and involve more diverse participant samples, including female and non-Malay offenders. These steps are necessary to evaluate the long-term sustainability of the observed outcomes and to support the broader adoption of the PSM as an evidence-based, scalable intervention for offender rehabilitation and recidivism reduction.[]

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request. In adherence to ethical considerations and confidentiality agreements with correctional institutions, access to the raw data may be limited. However, de-identified datasets can be made available to qualified researchers for academic verification and replication, subject to institutional approval where necessary.

Author Contribution Statement

Lee Eng Chiat: Conceptualization; Data Curation; Formal Analysis; Methodology; Resources; Writing Original Draft; Writing, Review & Editing. **Mohammad Aziz Shah bin Mohamed Arip:** Conceptualization; Writing, Review & Editing; Content Analysis, Abstract & Review. **Fauziah binti Mohd Sa'ad:** Validation; Writing, Review & Editing.

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