



UNIVERSITI PUTRA MALAYSIA

***PARENTAL ATTACHMENT, COGNITIVE DISTORTION,
SELFREGULATION AND EXTERNALIZING PROBLEM BEHAVIOR
AMONG JUVENILE IN REHABILITATION INSTITUTIONS IN MALAYSIA***

ATHIRAH YASMIN BINTI MOHD SHAKIR

FEM 2021 1



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By

ATHIRAH YASMIN BINTI MOHD SHAKIR

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia,
in Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

October 2019

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DEDICATION

This Thesis is dedicated to:

**Allah (SWT),
The Most Gracious, All-Knower and Most Merciful**

**Prophet Muhammad (SAW),
Peace & Blessing of Allah Be Upon Him**

**My Beloved Handsome Husband,
Mohd Hasmil Izzudin Bin Harun**

**My Beloved Parents,
Hj. Mohd Shakir Ismail & Hj. Rosnah Saad**

**My Beloved Parents-In-Law
Harun Awang & Fatimah Che Ngah**

**My Beloved Little Siblings,
Liyana Izzati Mohd Shakir & Spouse
Syaza Raihan Mohd Shakir
Muhammad Syahmi Wajdi Mohd Shakir**

**My Beloved Siblings In-Law,
Fahaizatun Harun
Fahaizawahir & Spouse
Fahaizaelawati & Spouse
Fahaizatuima & Spouse
Mohd Hasnul Shahril & Spouse
Fahaizatul Noor Ain Harun
Fahaizatul Noor Shairah Harun**

All My Beloved Nephews & Nieces

&

**In Loving Memory,
Our Babies who prematurely returned to our Creator
Haura' Al-Maqsurah Binti Mohd Hasmil Izzudin (D.O.B. 12/1/2016)
Haura' Afiyaa Binti Mohd Hasmil Izzudin (D.O.B. 14/8/2018)
Al-Fatihah**

Alhamdulillah, Bonda did it, my babies!

Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

PARENTAL ATTACHMENT, COGNITIVE DISTORTION, SELF-REGULATION AND EXTERNALIZING PROBLEM BEHAVIOR AMONG JUVENILE IN REHABILITATION INSTITUTIONS IN MALAYSIA

By

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October 2019

Chairman : Professor Rozumah Baharudin, PhD
Faculty : Human Ecology

The present study aimed to examine a structural model on the relationship between parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking), and the mediating effect of cognitive distortion. This study also examined whether the structural model is moderated by juvenile offenders' self-regulation. A quantitative and cross-sectional approach was applied in the present study. This study was based on a large national research (Baharudin, Zulkefly & Arshat, 2015). A total of 440 juvenile offenders aged between 14 to 18 years old from all eight Juvenile Rehabilitation institutions or Tunas Bakti School (TBS), Malaysia were involved in this study. There were 268 males and 172 females who were identified via stratified random sampling technique. The Domain of Adolescent Attachment Scale-Malay (DAAS-Malay) (Zulkefly & Wilkinson, 2013), the Youth Self Report (YSR) (Achenbach, 1991), the 16-item version of 'How I Think' Questionnaire (HIT-16-Q) (Ara & Shah, 2015), and the Self-Regulation Scale (SRS) (Novak & Clayton, 2001) were utilized to assess the key variables of the study. The data were analyzed using the Statistical Package for Social Science (SPSS) and Analysis of Moment Structures (AMOS). The findings of the present study revealed that majority of juvenile offenders in the rehabilitation institutions reported high levels of aggressive and rule-breaking/delinquent behavior as well as cognitive distortion. Whereas, the levels of paternal and maternal attachment and self-regulation among juvenile offenders were lower. Prior to the structural model testing, all of the key variables were validated with confirmatory factor analysis. The model indicated that both paternal and maternal attachment were significantly and negatively related to aggressive behavior; meanwhile, the respective relationship of paternal and maternal attachment with rule-breaking behavior was found to be insignificant. Moreover, the indirect effect indicated that the relationships of both paternal and maternal attachment with aggressive behavior were partially mediated by cognitive distortion. In contrast, the paths from paternal and maternal attachment to rule-breaking behavior were found to be completely mediated by cognitive distortion. Besides, the multi-group analysis found no significant moderation

effect of juvenile offenders' self-regulation on the model. This study concludes that parental attachment (i.e., paternal and maternal) and cognitive distortion possess protective effects against juvenile offenders' externalizing problem behavior (i.e., aggressive and rule-breaking). The present findings imply that any effort to reduce juvenile offenders' externalizing behavior should focus on the quality of parental attachment and cognitive distortion. Further, the findings presented in this study may contribute to the design of a more effective intervention program which aims to foster parental attachment and cognitive distortion to protect juveniles from engaging in externalizing problems.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**PERAPATAN KEIBUBAPAAN, PENGHEROTAN KOGNITIF,
PENGATURAN KENDIRI DAN MASALAH TINGKAH LAKU DALAM
KALANGAN JUVANA DI INSTITUSI PEMULIHAN DI MALAYSIA**

Oleh

ATHIRAH YASMIN BINTI MOHD SHAKIR

Oktober 2019

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Kajian ini bertujuan mengkaji model struktur hubungan antara perapatan keibubapaan (iaitu bapa dan ibu) dan masalah tingkah laku (iaitu agresif dan melanggar peraturan), dan kesan perantaran pengherotan kognitif. Kajian ini juga mengkaji sama ada model struktur dimoderasi oleh pengaturan sendiri remaja. Satu pendekatan kuantitatif dan keratan rentas telah diaplikasikan dalam kajian ini. Data kajian ini berdasarkan kajian nasional berskala besar (Baharudin, Zulkefly & Arshat, 2015). Sejumlah 440 pesalah juvana yang berumur antara 14 hingga 18 tahun dari semua lapan institusi Pemulihan Juvana atau Sekolah Tunas Bakti (TBS) di Malaysia terlibat dalam kajian ini. Mereka merupakan 268 lelaki dan 172 perempuan yang dikenalpasti melalui teknik pensampelan rawak berstrata. *Domain of Adolescent Attachment Scale-Malay* (DAAS-Malay) (Zulkefly & Wilkinson, 2013), *Youth Self Report* (YSR) (Achenbach, 1991), *16-item version of 'How I Think' Questionnaire* (HIT-16-Q) (Ara & Shah (2015), (Barriga & Gibbs, 1996), dan *Self-Regulation Scale* (SRS) (Novak & Clayton, 2001) digunakan untuk menilai pemboleh ubah utama kajian ini. Data dianalisis dengan menggunakan perisian *Statistical Package for Social Science (SPSS)* and *Analysis of a Moment Structures (AMOS)*. Dapatan kajian semasa ini mendedahkan bahawa majoriti pesalah juvana di institusi pemulihan melaporkan tahap tingkah laku agresif dan melanggar peraturan serta pengherotan kognitif sendiri yang tinggi. Manakala, tahap perapatan bapa dan ibu, beserta pengaturan sendiri dalam kalangan pesalah juvana adalah rendah. Sebelum ujian model struktur, semua pemboleh ubah utama telah disahkan dengan menggunakan analisis faktor pengesahan. Model ini menunjukkan bahawa kedua-dua perapatan bapa dan ibu adalah signifikan dan dikaitkan secara negatif dengan tingkah laku yang agresif; sementara itu, hubungan antara perapatan bapa serta ibu dan tingkah laku melanggar peraturan didapati tidak signifikan. Selain itu, kesan secara tidak langsung menunjukkan bahawa hubungan antara kedua-dua perapatan bapa serta ibu dan tingkah laku agresif dimoderasi secara separa melalui pengherotan kognitif sendiri. Sebaliknya, hubungan dari perapatan bapa dan ibu kepada tingkah laku melanggar peraturan didapati dimoderasi sepenuhnya oleh pengherotan kognitif sendiri. Di

samping itu, analisis pelbagai-kumpulan menunjukkan tiada kesan penyederhanaan yang signifikan oleh pengaturan sendiri pesalah juvana dalam model tersebut. Kajian ini menyimpulkan bahawa perapatan keibubapaan (iaitu bapa dan ibu) dan pengherotan kognitif mempunyai kesan pencegahan ke atas masalah tingkah laku luaran pesalah juvana (iaitu agresif dan melanggar peraturan). Dapatan kajian ini mencadangkan sebarang usaha untuk mengurangkan tingkah laku luaran pesalah juvana harus berfokuskan kepada kualiti perapatan keibubapaan dan darjah pengherotan kognitif sendiri. Tambahan, dapatan kajian ini juga menawarkan satu langkah ke arah pembangunan program intervensi yang lebih berkesan bertujuan menguatkan perapatan keibubapaan dan pengherotan kognitif untuk melindungi juvana daripada penglibatan masalah tingkah laku.



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In the Quran, Allah (SWT) says:

“Help one another in acts of piety and righteousness. And do not assist each other in acts of sinfulness and transgression. And be aware of Allah. Verily, Allah is severe in punishment” (Quran 5:2).

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October 2019



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LIST OF ABBREVIATIONS

| | |
|----------|--|
| AAQ | Adolescent Attachment Questionnaire |
| ABS | Antisocial Behavior Scale |
| AGB | Aggressive Behavior |
| AMOS | Analyses of Moment Structure |
| AQ | Aggression Questionnaire |
| ASCT | Attachment Story Completion Task |
| ASEBA | Achenbach System of Empirically Based Assessment |
| ASQ | Attachment Styles Questionnaire |
| CBCC | Child Behavior Checklist |
| CBT | Cognitive-behavioral Therapy |
| CD | Cognitive Distortion |
| CFA | Confirmatory Factor Analysis |
| CFI | Comparative Fit Index |
| CPCL | Child Problem Checklist |
| CTQ | Childhood Trauma Questionnaire |
| DAAS | Domains of Adolescent Attachment Scale |
| DOS/DOSM | Department of Statistics Malaysia |
| EC | Effortful Control |
| EDA | Exploratory Data Analyses |
| EQUIP | Evaluation and Quality Improvement Program |
| ERGS | Exploratory Research Grant Scheme |
| GAD | Generalized Anxiety Disorder |
| GFI | Goodness of Fit Indices |

| | |
|---------|---|
| GOF | Goodness of Fit |
| HISBA | Household Income/Basic Amenities Survey |
| HIT | How I Think |
| IPPA | Inventory of Parent and Peer Attachment |
| IWMs | Internal Working Models |
| M | Mean |
| MA | Maternal Attachment |
| MCAR | Missing Completely at Random |
| MDS | Moral Disengagement Scale |
| ML | Maximum Likelihood |
| MOE | Ministry of Education |
| MST | Multi-Systemic Therapy |
| NKRA | Reducing Crime National Key Results Areas |
| PA | Paternal Attachment |
| PAQ | Parent Attachment Questionnaire |
| PARQ | Adult Parent Acceptance and Rejection/Control Questionnaire |
| PSRS | Proportionate Stratified Random Sampling |
| RBB | Rule-Breaking Behavior |
| RMP | Royal Malaysian Police |
| RMSEA | Root Mean Square Error of Approximation |
| SCID-II | Structured Clinical Interview II Disorder |
| SD | Standard Deviation |
| SE | Standard Error |
| SEM | Structural Equation Modeling |

| | |
|------|--|
| SEQ | Self-Esteem Questionnaire |
| SES | Socioeconomic Status |
| SIE | Standardized Indirect Effect |
| SPSS | Statistical Package for the Science Social |
| SRDB | Self-Reported Delinquency Behavior |
| SRDQ | Self-Reported Delinquency Questionnaire |
| SRS | Simple Random Sampling |
| SRS | Self-Regulation Scale |
| TBS | Tunas Bakti Schools |
| UK | United Kingdom |
| UPM | Universiti Putra Malaysia |
| UPNM | National Defense University |
| WHO | World Health Organization |
| YSR | Youth Self Report |

CHAPTER 1

INTRODUCTION

Chapter one starts with the background of the study which focuses on externalizing problem behavior among Malaysian adolescents. Upon revealing issues related to the topic, declarations of the problem statement as well as research questions are presented. Next, an explanation of the theoretical background that guided this study is presented, followed by the conceptual framework specifically designed for this research. Following the conceptual framework, the objectives of the study are stated in general and specific terms. Then, the research hypotheses based on the objectives are enumerated, followed by the significance of the study and the definitions of terminologies. Lastly, at the end of the chapter, the limitations of the study are presented.

1.1 Background of the Study

Adolescence is categorized as an extreme phase in human development and growth, which starts at age 10 to 19, and is referred to as the stage between childhood and adulthood (World Health Organization (WHO) Malaysia, 2011). However, some researchers assert that the age range for adolescence is 12 to 22 years, depending on their developmental progress (Hintikka, 2007). This is parallel to the assertion by Sawyer, Azzopardi, Wickremarathne, and Patton (2018) that adolescence ranges from 10 to 24 years old.

The adolescent stage corresponds to the most crucial period within a person's lifetime as it is clearly characterized by remarkable swiftness and changes in development. It cannot be denied that adolescence is frequently related to behavioral problems or delinquent behavior (Gaik, Abdullah, Elias & Uli, 2013; Hasan & Husain, 2016). Some scholars define externalizing behavior as a set of behavior that breaks the customs of conventional culture or established rules (Gaik et al., 2013). Meanwhile, others view externalizing behavior as a group of behavioral problems expressed through adolescents' external behaviors or undesirable actions toward the environment. Specifically, externalizing behavior encompasses various acts such as verbal bullying, physical and relational aggression, vandalism, defiance, theft and juvenile delinquency (Achenbach, 1985, 1991; Campbell, Shaw, & Gilliom, 2000; Eisenberg et al., 2001; Paczkowski, 2003). Past literature has revealed numerous factors which have been linked to externalizing behavior among adolescents. Among these are personal characteristics and external factors comprising attitudes, expectations and past experiences that may potentially affect interpersonal relationships (Ezinga, Weerman, Westenberg & Bijleveld, 2008; Gaik et al., 2013).

Erikson (1950) stated that the biggest challenge faced by adolescents is struggling with finding their identity and role confusion. Likewise, trying to be accepted and acknowledged in the society is considered as a difficult challenge for them. On the other hand, conflicts occurring between an adolescent and the people around him or her may lead to negative perceptions and revenge towards others due to the feeling of rejection. Consequently, rebellious actions such as being involved in externalizing problems become manifestations of adolescents' feelings of anger. It cannot be denied that during adolescence, most adolescents face a period of "storm and stress" (Hall, 1904), that may be due to various challenges, especially conflicting relationships with their parents due to poor parental attachment during childhood. In the context of adolescent misconduct, a few studies have exposed that insecure attachment, which arises from the failure in assimilating attachment experiences at home, leads to communication and cognitive distortion as well as negative activities (e.g., crime, bullying, gangsterism, sexual misconduct, and drug abuse) among adolescents (Acharya & Relajo, 2017; Baharudin, 2017; Choon et al., 2013; de Vries, Hoeve, Stams, & Asscher, 2016; Hoeve, Jan, Stams, van der Put, Dubas, van der Laan & Gerris, 2012; Mikulincer & Shaver, 2011). It is clear that criminal delinquency among adolescents is increasing and influenced by certain factors directly involved in adolescent development, for example, parents, family, school, community, social institutions and government (Kassim, 2006).

Notably, children under the age of 18 who have committed an act that would be considered as a crime if perpetrated by an adult are referred to as juveniles (Child Act 2001). Accordingly, the Prison Act 1995 defines a young delinquent or a juvenile as a prisoner who is less than 21 years old (Law of Malaysia, 2009). Moreover, under a court order, juveniles are detained in a rehabilitation institution or Tunas Bakti School instead of in prisons. It is important to note that recent (within past five years) statistical data from the Department of Social Welfare in Malaysia have revealed an alarming number of adolescents age 12 to 17 who are involved in various social ills and crimes. In detail, the total number of cases reported in 2015 was 4,569. This figure indicates a decrease of cases from the previous year, in 2014, which was 5,096; however, repeated offenses recorded an increment of 12.4% from the 371 cases in 2014 to 417 cases in 2015 (Department of Statistics, 2016). Furthermore, in a report provided by the Malaysia Department of Statistics, 4,886 adolescents under the age of 18 were caught due to criminal involvement in 2016, with 6.9% more than the total number of juvenile offenders in 2015 (Children Statistics, 2017). Based on the latest statistics by the Malaysia Department of Statistics and the Social Welfare Department, a total number of 5.4 million children involved in criminal acts was reported in 2017. Among these, 5.1 million were males and the rest (0.3 million) were female children (Department of Statistics, 2018).

Table 1.1 shows the statistical report provided by the Social Welfare Department regarding the number of children and adolescents involved in crimes by age groups in the year 2016. Accordingly, the total number of children and adolescents arrested due to criminal cases in Malaysia was 4,886.

Table 1.1 : Statistics of Children Involved in Crime by Age Groups (2016)

| Age Group (Years) Type of Crimes | 10 - 12 | 13 - 15 | 16 - 17 | 18 - 21 | Total |
|--|-----------|------------|-------------|------------|-------------|
| Property-related crimes | 37 | 473 | 1168 | 39 | 1717 |
| People-related crimes | 6 | 140 | 492 | 28 | 666 |
| Minor Offense | 3 | 22 | 56 | 0 | 81 |
| Infringement of Supervision Terms | 0 | 1 | 8 | 3 | 12 |
| Drug | 14 | 209 | 1228 | 83 | 1534 |
| Gamble | 0 | 4 | 33 | 1 | 38 |
| Weapon/Firearms | 0 | 14 | 37 | 2 | 53 |
| Traffic | 1 | 33 | 203 | 5 | 242 |
| Escape from an Approved School | 2 | 1 | 7 | 0 | 10 |
| Others | 5 | 78 | 419 | 31 | 533 |
| Total | 68 | 975 | 3651 | 192 | 4886 |

(Source: Social Welfare Department, 2018)

Table 1.1 reveals that the highest proportion of young individuals involved in crimes belongs to the age group 16 to 17 years old (3651 cases), followed by the age group 13 to 15 years old (975 cases), then those 18 to 21 years old (192 cases). Notably, although the age group 10 to 12 years old recorded a minimal (68 cases) number of cases, it still depicts the fact that children start to be involved in criminal activities at an early age. These alarming figures are consistent with those reported in past studies (e.g., Harden & Mann, 2015; Loeber & Farrington, 2014; Swendsen, Burstein, Case, Conway, Dierker, He & Merikangas, 2012), which underscored that problem behavior increase with age, mainly between the childhood and adolescence stages. This may be due to the failure in expressing biological maturation and greater frustration among adolescents (Dijkstra, Kretschmer, Pattiselanno, Franken, Harakeh, Vollebergh, & Veenstra, 2015). However, the percentage of adolescents involved in crimes decline during the late adolescence stage due to maturation, which is responsible for controlling their problem behavior (Steinberg, 2010, 2014). Moreover, all cases recorded in Table 1.1 encompass property-related crimes, people-related crimes, minor offense acts, infringement of supervision terms, drugs, gambling, weapon/firearms, traffic, and escaping from an approved school and others.

Apart from that, as shown in Table 1.2, the Social Welfare Department revealed that the highest number of children involved in crimes according to ethnic group in 2016 belonged to Malays (3,429 cases). The ethnic group with the second highest proportion of children involved in criminal activities were the Indian juveniles (457 cases), followed by the Chinese (305 cases), and the natives of Sabah and Sarawak, with 274 and 143 cases, respectively.

Table 1.2 : Statistics of Children Involved in Crime by Type of Crimes and Ethnic Groups (2016)

| Ethnic Group Type of Crimes | Malay | Chinese | Indian | Sabah Natives | Sarawak Natives | Others | Total |
|--|--------------|----------------|---------------|----------------------|------------------------|---------------|--------------|
| Property-related crimes | 1265 | 54 | 176 | 112 | 55 | 43 | 1705 |
| People-related crimes | 464 | 62 | 88 | 20 | 9 | 8 | 651 |
| Minor Offenses | 54 | 21 | 12 | 3 | 3 | 0 | 93 |
| Infringement of Supervision Terms | 8 | 1 | 3 | 0 | 0 | 0 | 12 |
| Drug | 1131 | 55 | 106 | 91 | 49 | 89 | 1521 |
| Gamble | 4 | 31 | 1 | 0 | 2 | 1 | 39 |
| Weapon/Firearms | 27 | 6 | 5 | 0 | 1 | 9 | 48 |
| Traffic | 170 | 29 | 10 | 12 | 15 | 4 | 240 |
| Escape from an Approved School | 3 | 0 | 5 | 0 | 0 | 0 | 8 |
| Others | 303 | 46 | 51 | 36 | 9 | 112 | 557 |
| Total | 3429 | 305 | 457 | 274 | 143 | 66 | 4874 |

(Source: Social Welfare Department, 2018)

The aforesaid data provide a glimpse of Malaysian adolescents who are having difficulties in controlling their behavior, which may eventually result in more serious crimes. In fact, according to a report provided by the Ministry of Rural Development, with the source retrieved from the Economic Planning Unit under the Department of Statistics, in 2016, the mean monthly household gross income of the top 20%, middle 40% and bottom 40% of households showed that Malay families had the lowest monthly income compared to the Chinese and Indian groups. This low family socioeconomic status (SES) has been proven by previous studies (e.g., Fitzsimons, Goodman, Kelly & Smith, 2017; Shong, Abu Bakar, & Islam, 2018; Mazza, Lambert, Zunzunegui, Tremblay, Boivin & Côté, 2017; Ponnet, 2014; Yoshikawa, Aber & Beardslee, 2012) to be significantly associated with behavioral problems among children and adolescents. Taking everything into account, the current social problem can directly threaten safety and raise worry among Malaysian citizens (Soh, 2012). For that reason, understanding the prevalence and related aspects of externalizing problem behavior among Malaysian adolescents especially among juvenile offenders must be considered. In other words, a study must be conducted to understand the potential factors that exacerbate adolescents' exposure to externalizing problem behavior.

In addition, parental attachment has long been acknowledged as a causative aspect that can foster both positive and negative development of behavior among adolescents (e.g., Acharya & Relajo, 2017; Choon et al., 2013; de Vries et al., 2016; Hovee et al., 2012). The implications of attachment have been well-defined and described in criminological and psychological literature. Specifically, a poor or broken attachment at home can lead to criminal and delinquent acts of an individual. Comparatively, Bowlby (1969) argued that a lack of attachment at home brings about a distrusting interpretation of the society that tolerates delinquent behavior and crimes. Meanwhile, in the juvenile setting, most

young offenders basically experience neglect, abuse and insecurity in their relationships with their parents during their free-living period before entering rehabilitation institutions (Lázaro & López, 2010; Shaw & Frost, 2013). For that reason, recent reports on the occurrence of externalizing problem behavior among Malaysian juveniles have heightened the need to comprehensively explore the role of parental attachment (Kuthoos, Endut, Selamat, Hashim & Azmawati, 2016; Siti Noor Fazarina, Razima Hanim, Azahar & Norhamidah, 2016; Zakaria, Noor & Khir, 2018). Furthermore, most attachment researchers have agreed that maternal and paternal attachment develop independent of each other (Chao, 2011; George, Cummings, & Davies, 2010; Goodsell & Meldrum, 2010; Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010; Lopez, 2013; Pong, Johnston, & Chen, 2010). Scholars have also suggested that the two forms of parental attachment be examined individually (de Vries et al., 2016; Lopez, 2013; Ratner, 2013). Both paternal and maternal attachment have unique and differential impacts on certain aspects of an adolescent's later development (Baharudin, 2017), such as social-emotional adjustment (Baharudin, Chiah, & Zulkefily, 2012), personality development (Bowlby, 1969, 1980) and cognitive performance (West, Mathews, & Kerns, 2013).

Nonetheless, limited research has highlighted the cognitive factors that can stimulate the development of externalizing problem behavior among adolescents (Fischback, 2018; Van Leeuwen, Rodgers, Gibbs, & Chabrol, 2014). Abel and colleagues (1984) as well as prior studies have proposed that cognitive distortion, which develops from the conflict between external reinforcements (i.e., social figures) and internal self-condemnation, triggers the involvement of externalizing problem behavior. Due to the quality of parent-child attachment, adolescents become exposed or involved in unproductive activities (Doll, Jones, Osborn, Dooley, & Turner, 2011; Flouri, Tzavidis, & Kallis, 2010; Hanewald, 2011; Tan, Tohid, Su, Tan, Azimah, & Khairani, 2012) and concurrently demonstrate failure or suboptimal performance in many aspects of functioning, including cognitive processes. The attachment theory highlights the impact of consistent communication with the attachment figures at home, especially the parents, on an infant's cognitive development. In the adolescence stage, adolescents normally possess cognitive distortions about themselves, the others and their surroundings due to their attachment history. It is a fact that cognitive distortion is one of the outcomes of attachment which is initiated during early parent-child relationships (Ainsworth, 1989; Lieberman & Pawl, 1990). Undeniably, past studies have endeavored to investigate the potential mediating role of cognitive distortion (Capuano, 2011; de Vries et al., 2016; Smeijers, Brazil, Bulten, & Verkes, 2018); but information on its etiological role as an underlying mechanism that could explain the association between parental attachment and externalizing behavior is inadequate in literature (de Vries et al., 2016; Ó Ciardha & Ward, 2013; Smith, 2011), especially in the Asian context (Gaik et al., 2013; Jafari, Baharudin & Archer, 2016; Latiff, Akhtari-Zavare, Esfehiani, Bakar, Yit, Siew & Adzmann, 2018; Yeoh & Woo, 2010). Needless to say, by investigating the mediating role of cognitive distortion, an imperative next step towards the understanding of adolescent externalizing problem behavior can be attained. In addition to the significance of cognitive distortion, numerous findings regarding the moderating effect of individual self-regulation approaches often appear when attachment, cognitive development and behavioral outcomes are investigated (Flouri, Midouhas & Joshi, 2014; Jutengren, Kerr & Stattin, 2011; King, Lengua & Monahan, 2013; Majstorovic,

2015; Pace, D'Urso & Zappulla, 2018). Past research has proposed that self-regulation among adolescents is responsible for controlling externalizing problem behavior since the different dimensions of self-regulation hold diverse antecedents and outcomes, especially in the form of cognitive and behavioral consequences. Self-regulation was found to be a good prevention of abnormal behavior (Sanders & Mazzucchelli, 2013) since it linked to affective and impulse control patterns, however, a low degree of self-regulation leads to problematic externalizing behavior among adolescents (Moilanen, 2007).

In a nutshell, the present study aims to investigate the relationships among parental attachment (i.e., paternal and maternal), cognitive distortion, externalizing problem behavior (i.e., aggressive and rule-breaking) and self-regulation. Such an exploration will provide strong evidence that juvenile offenders with strong paternal and maternal attachment are more likely to possess less cognitive distortion and are able to regulate their behavior from being aggressive and getting involved in crimes. Additionally, the vital roles of the father and the mother on the development of adolescent behavioral outcomes can be highlighted since both forms of attachment uniquely impact certain aspects of an adolescent's later development (West et al., 2013). Apart from that, adolescent developmental outcomes are affected by parental attachment indirectly through internal resources such as cognitive distortion (Acharya, 2013; Acharya & Relajo, 2017; de Vries et al., 2016; Love & Murdock, 2012; Morley & Moran, 2011; Smeijers et al., 2018), since the latter has been regarded as one of the imperative mechanisms of mental schemas in preventing adolescents from engaging in risky behavior (Capuano, 2011; Haldaman, 2012; Helmond, Overbeek, Brugman, & Gibbs, 2015; Panourgia & Comoretto, 2017; Wallinius, Johansson, Lardén, & Dernevik, 2011). For that reason, the present study sought to provide detailed explanations on the role of parental attachment (i.e., paternal and maternal) in the formation of cognitive distortion, which further results in externalizing problem behavior among adolescents nowadays. By employing cognitive distortion as a mediating mechanism, risky or externalizing problem behavior among juvenile offenders as well as other adolescents can be avoided. Thus, parents, caregivers, adolescents, probation officers and personnel of rehabilitation institutions, along with practitioners and policy makers can make use of the present findings as guidelines in solving social problems, especially those involving adolescents in Malaysia.

1.2 Statement of Problem

It is a fact that Malaysian adolescents nowadays undergo difficulties in managing their externalizing behavior in order to adapt to their current physical changes as well as in fulfilling the requirement of their social roles (Ahmadian, Hamsan, Abdullah, Samah & Noor, 2014; Arshat, Ng & Pai, 2016; Choon et al., 2013; Mallow, 2015; Shong et al., 2018). Undeniably, this phenomenon provide a picture of the dramatic upsurge in the prevalence of external problem observed across the adolescence stage (Rispe, 2012; Shariff, 2015) which brings about criminal acts and violence among adolescents (Dória, Antoniuk, Assumpção Junior, Fajardo & Ehlke, 2015; Idris, 2017; Jakobsen, Fergusson & Horwood, 2012; Murray, et al., 2014).

Apart from that, in the context of the present study, crimes are considered as the second major social concern among Malaysian citizens next to economic issues. The Reducing Crime National Key Results Areas (NKRA), a strategic performance indicator headed by the Malaysia Ministry of Home Affairs via the Royal Malaysian Police (RMP), was implemented to eliminate crime in Malaysia. Despite the decline in the recent total crime index, the Crime Investigation Department of RMP reported an increase in the violent crimes reported, from 21,810 cases in 2015 to 22,326 cases in 2016. In relation to the present study, it is important to realize that the statistical data from the Malaysia Department of Social Welfare have revealed an alarming number of adolescents aged 12 to 17 who have been involved in social ills and crimes and have been admitted to rehabilitation institutions. In detail, the total number of cases reported in 2015 was 4,569. This figure indicates a decrease from the previous year, in 2014, which was 5,096; however, repeated offenses recorded an increase of 12.4%, from 371 cases in 2014 to 417 cases in 2015. Equally important, based on a report provided by the Malaysia Department of Statistics, a total number of 4,886 adolescents under the age of 18 were involved in crimes in 2016, with an increment of 6.9% juvenile offenders from the year 2015 (Children Statistics, 2017). Moreover, the Malaysia Department of Statistics, with the Social Welfare Department as the authorized source, revealed that, in the year 2017, about 5.4 million out of 9.4 million children were involved in crimes, in which, 5.1 million were males and 0.3 million were female children (Department of Statistics, 2018). Such statistical reports may not be a good sign for the development of Malaysian children and adolescents.

The aforementioned data are supported by the widespread news reports on juvenile delinquency, for instance, bullying among adolescents, which is considered one of the externalizing problem behavior. Perhaps the most compelling evidence for such cases which surprised the entire country was the death of a Malaysian navy cadet named Zulfarhan Osman Zulkarnain, a student at the National Defense University in June 2017, (UPNM), due to bullying by his colleagues (The New Straits Time, 2nd June 2017). A similar bullying case was reported, that of an 18-year-old victim named T. Nhaveen, who was not only beaten up, but was also sexually assaulted by a group of male adolescents aged 16 to 18 (The New Straits Time, 15th June 2017). By the same token, the biggest incident that incited fear among Malaysians involved a group of adolescents (aged 11 to 18) who set fire to Tahfiz School in Datuk Keramat due to revenge, which resulted in the death of 23 people (i.e., 21 students and 2 wardens) (The Star, 14th September 2017). Altogether, it is clear that Malaysian adolescents are having difficulties in controlling their behavior which eventually lead them to commit even more serious crimes. This phenomenon threatens the safety of and provokes worries among Malaysians. A few studies have reported the crimes committed by Malaysian youngsters such as, truancy, destructive behavior and pornography (Mey, 2010); thereby highlighting the increasing prevalence of juvenile delinquency which is alarming to the country (Nasir, Zamani, Yusoff & Khairudin, 2010; Ting, 2011), insofar as it may affect the sustainability of future leaders (Mallow, 2015). Moreover, numerous studies in Western countries have provided an estimate of the prevalence of behavioral problems; yet, there is scarcity of research on adolescent behavioral problems in developing countries including Malaysia (Mey, 2010; Kuthoos et al., 2016; Shariff, 2015).

Malaysian adolescents undergo a similar development progress as those from other countries (e.g., de Looze et al., 2014) and are not exempt from being involved in externalizing problem behavior (Shuhada, 2015; Zakaria et al., 2018). As years passed, externalizing problem behavior has become one of the major issues in Malaysia that gained a lot of attention from countless sectors, such as the government, academicians, politicians, and society as a whole (Choon et al., 2013; Mey, 2010; Zakaria et al., 2018). According to scholars (e.g., Georgiou & Symeou, 2018), externalizing behavior encompasses different acts such as property violation, theft, vandalism, physical aggression, risky sexual behavior, verbal bullying, rule-breaking and substance abuse. All of these delinquent activities are considered as proofs for the negative actions of children due to their surrounding environment. Thus, in this modern era, scholars have identified several potential factors for externalizing problem behavior, such as the quality of parental attachment perceived by adolescents (Al-Yagon, 2015; de Vries et al., 2016; Neves Nunes et al., 2013; Pan et al., 2017), cognitive distortion (Blount, 2012; Helmond et al., 2015; Hernandez, 2017; ten Cate, 2011) and self-regulation (Graziano, Slavec, Ros, Garb, Hart & Garcia, 2015; Lonigan, Spiegel, Goodrich, Morris, Osborne, Lerner, & Phillips, 2017; Perry, Calkins, Dollar, Keane, & Shanahan, 2017; White, Jarrett, & Ollendick, 2013).

Evidence has revealed that parental attachment perceived by adolescents is an essential determinant of externalizing problem behavior. In fact, studies suggest that most adolescents with externalizing problem behavior have insecure parental attachment (Fearon, Bakermans- Kranenburg, Van IJzendoorn, Lapsley & Roisman, 2010; Hovee et al., 2012). In a few studies conducted by Fearon et al. (2010) and Hovee et al. (2012) revealed that parent-adolescent attachment is related to delinquency as well as aggressive behavior. Based on their meta-analysis of attachment, they have agreed that insecure and disorganized attachments did contribute to the increment risk for externalizing problems among children. Their findings supported those of an earlier study by Deater- Deckard and colleagues (2009), which highlighted the role of family on child conduct problems, both concurrently and longitudinally. Besides, according to Neves Nunes and colleagues (2013), poor maternal attachment lead to higher aggressive and delinquency among young adolescents; meanwhile, poor paternal attachment perceived by young adolescents was found to be related to social withdrawal. In other word, the results highlighted on the aggressive children with signs of delinquency as having low confidence in the availability, responsiveness and emotional support from their parents. Hence, a strong relationship with parents will encourage children and adolescents to abide by the conventional rules enforced by their parents, thereby leading to the prevention of involvement in delinquent acts (Hovee et al., 2012). However, there has been little discussion about the importance of family relationships, especially on the influence of parental attachment on the development of Malaysian adolescents' externalizing behavior (Kuthoos et al., 2016; Siti Noor Fazarina et al., 2016; Zakaria, Noor & Khir, 2018). Such a limitation may hinder the reduction of the reported cases on juvenile delinquency in the country as evidenced by the statistical data previously reported.

Externalizing problem behavior in the society have been observed to be a serious consequence of high levels of cognitive distortion among high-risk children and adolescents (Panourgia & Comoretto, 2017). Haushalter (2015) defined cognitive distortion as irrational thinking patterns that may contribute to reducing behavior-related guilt. A few studies have reported that the presence of cognitive distortion among adolescents is linked with antisocial behavior (Van der Velden, Brugman, Boom, & Koops, 2010), proactive and reactive aggression (Koolen, Poorthuis, & van Aken, 2012) as well as rule-breaking subtypes (Blount, 2012). More recently, de Vries and colleagues (2016) also proposed that cognitive distortion holds an important role in the path from attachment to aggressive behavior in the adolescent sample in their study. Notably, when juvenile offenders enter rehabilitation institutions, they bring with them a set of problems, mostly involving poor childhood experiences such as parental neglect and abuse that affected their behavior (Shaw & Frost, 2013). Meanwhile, Lázaro and López (2010) also found that adolescents in residential care displayed insecurity in their relationship with parents, a poor perception of control over life events as well as a negative self-concept before getting into the institution. This may explain the alarming occurrence of externalizing problem behavior among Malaysian adolescents in the present study. Plus, a few local scholars also underlined the need of conducting more advance investigations in the terms of understanding the way of living among young Malaysian offenders (Mohammad & Azman, 2018), from the angle of parental attachment (Kuthoos et al., 2016), as well as other vulnerability to their externalizing problem behavior before rehabilitations. Henceforth, it is necessary to do a more in-depth research on parental attachment and cognitive distortion of juveniles since this mental state potentially causes them to engage in problem behavior (Helmond, et al., 2015).

From the neurobiological perspective, a core of a neural network, namely the ventromedial prefrontal cortex, was found to be related to behavioral decision-making and irrational decision-making, which has the same definition as cognitive distortion (Blount, 2012). Additionally, direct measures of cognitive distortion in most research may possibly reflect fundamental belief systems, worldviews or attitudinal schemas. However, to date, there is inadequate research employing indirect methods, as highlighted by Ó Ciardha and Ward (2013). It is a fact that cognitive distortion plays crucial role in the development of externalizing behavior among Malaysian juvenile in rehabilitation institutions (Nasir et al., 2010), and Smith (2011) also has suggested to observe potential mediators such as cognitive distortion, on the link between parental attachment and externalizing problem behavior. Yet, as observed from prior studies, there is still lacking in number of empirical information on the mediating mechanism of adolescents' cognitive distortion underlying the relationship between parental attachment and externalizing behavioral outcomes (Bao et al., 2015; de Vries et al., 2016), more so in the Malaysian context.

Another variable that has been implicated in the occurrence of externalizing problem behavior is self-regulation (Panourgia & Comoretto, 2017; Flouri et al., 2014). Duckworth (2011) described self-regulation as the capability to behave purposely in controlling emotions, thoughts and behavior. Review from past studies, self-regulation has been proposed as a potential moderator in explaining the development of antisocial

behavior in children and adolescents (Wills & Dishion 2004; Dishion & Patterson 2006). Plus, Majstorovic (2015) suggested that self-regulation (i.e., effortful control) is a worthy moderating variable due to its well-established influence on the relationship between risky vulnerabilities and maladjustment. Such effect was also found in a study conducted by Vasey and colleagues in 2013. Generally, research outside Malaysia have generated mixed findings on the moderating role of self-regulation in the relationship between parental aspects and external as well as internal behavioral outcomes (Flouri et al., 2014; Kim-Spoon et al., 2012; Majstorovic, 2015). Although these investigations reported many interesting results, little work has examined the moderating effect of self-regulation mainly among Malaysian juvenile offenders.

Furthermore, it is important to know that most studies on externalizing problem behavior in Malaysia were carried out with a normative and high-risk group of adolescents who were not staying in the rehabilitation institutions; hence, they may not have been involved in crimes at all. Still, there is no specific study which attempted to identify the relationships between juvenile offenders' attachment with their parents (i.e., paternal and maternal), cognitive distortion, and self-regulation with externalizing problem behavior (aggressive and rule-breaking). Taking everything into account, this study attempted to examine a more appropriate sample (i.e., adolescents who have been caught due to criminal involvement) to fill in the knowledge gaps identified in previous studies (see Gaik et al., 2013; Kuthoos et al., 2016; Ó Ciardha & Ward, 2013; Paczkowski, 2003; Siti Noor Fazarina et al., 2016; Zakaria et al., 2018). Overall, with the presented factors and lack of studies conducted in Malaysia, this study was designed to examine the direct relationship between parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking), the mediating role of cognitive distortion in the said direct relationship, and moderating role of self-regulation.

1.3 Research Questions

According to the structural relations among variables, the present study addressed the following research questions:

1. What is the personal profile of juvenile offenders in the rehabilitation institutions in Malaysia?
2. What are the levels of parental attachment (i.e., paternal and maternal), externalizing problem behavior (i.e., aggressive and rule-breaking), cognitive distortion and self-regulation among juvenile offenders?
3. To what extent do juvenile offenders' perceptions of parental attachment (i.e., paternal and maternal) and cognitive distortion influence externalizing problem behavior (i.e., aggressive and rule-breaking)?
4. Does cognitive distortion mediate the structural relations between juvenile offenders' perceptions of parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking)?

5. Does self-regulation moderate the structural relations between juvenile offenders' perceptions of parental attachment (i.e., paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking)?

1.4 Research Objectives

This section elaborates on the general and specific objectives of the study.

1.4.1 General Objective

The general objective of this study was to determine the relationships between parental attachment (i.e., paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders, with self-regulation as a potential moderator.

1.4.2 Specific Objective

1. To describe the personal profile of juvenile offenders (age, sex, duration of staying in the institution, parents' age, parents' monthly income).
2. To describe the levels of parental attachment (i.e., paternal and maternal), externalizing problem behavior (i.e., aggressive and rule-breaking), cognitive distortion and self-regulation of juvenile offenders.
3. To determine the relationship between perceived parental attachment (i.e., paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders.
4. To examine the mediating effect of cognitive distortion in the structural relations between perceived parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders.
5. To examine the moderating effect of self-regulation on the structural relations between perceived parental attachment (i.e., paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders.

1.5 Research Hypotheses

The hypotheses of the present study were constructed based on the specific research objectives. Altogether, there were thirteen hypotheses formulated by the study.

Objective 3: To determine the relationship between perceived parental attachment (i.e., paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders.

- H α 1: Paternal attachment is significantly related to aggressive behavior.
- H α 2: Maternal attachment is significantly related to aggressive behavior.
- H α 3: Paternal attachment is significantly related to rule-breaking behavior.
- H α 4: Maternal attachment is significantly related to rule-breaking behavior.
- H α 5: Paternal attachment is significantly related to cognitive distortion.
- H α 6: Maternal attachment is significantly related to cognitive distortion.
- H α 7: Cognitive distortion is significantly related to aggressive behavior.
- H α 8: Cognitive distortion is significantly related to rule-breaking behavior.

Objective 4: To examine the mediating effect of cognitive distortion in the structural relations between perceived parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders.

- H α 9: There is a significant mediating effect of cognitive distortion in the structural relation between paternal attachment and aggressive behavior of juvenile offenders.
- H α 10: There is a significant mediating effect of cognitive distortion in the structural relation between maternal attachment and aggressive behavior of juvenile offenders.
- H α 11: There is a significant mediating effect of cognitive distortion in the structural relation between paternal attachment and rule-breaking behavior of juvenile offenders.
- H α 12: There is a significant mediating effect of cognitive distortion in the structural relation between maternal attachment and rule-breaking behavior of juvenile offenders.

Objective 5: To examine the moderating effect of self-regulation on the structural relations between perceived parental attachment (i.e., paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders.

- H α 13: The structural relations between perceived parental attachment (i.e. paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking) of juvenile offenders are moderated by self-regulation.

1.6 Theoretical Background

This section begins with a brief introduction on the nature of a theory and how it was incorporated into the present study. It will then be followed by a discussion of the four major theories that guided this study, specifically Bandura's social cognitive theory (1969), Bowlby's attachment theory (1969), and Erikson's psychosocial development theory (1950). These theories have provided evidence on the relationships among parental attachment (i.e., paternal and maternal), externalizing problem behavior (i.e., aggressive and rule-breaking), cognitive distortion and self-regulation.

1.6.1 Social Cognitive Theory (Bandura, 1986)

Social cognitive theory (Bandura, 1986) highlighted the importance of socialization process on human behavior, for example, the effect of parent-child relationship on child or adolescent's behavior outcomes. As illustrated in Figure 1.4, this socialization process was explained by three reciprocal interacting elements, that is environment, personal factors and behavior.

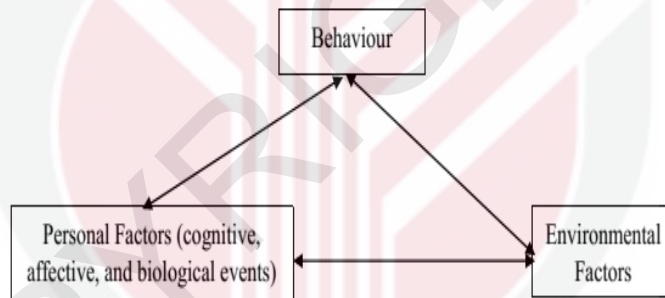


Figure 1.1 : Social Cognitive Theory (Bandura, 1986)

Based on Bandura's (1989) point of view, physical environment and social influences, generally, those who are in the microsystem (i.e., family, peers and community), are considered as the environment elements. It is a fact that human behavior is affected by social and physical environments, still, human behavior outcomes also alter their surrounding environment in reciprocal way. For example, parents do not get upset towards their children unless they took improper actions against the parents expectation. Hence, the surrounding environments, mainly the social environments possess crucial role in shaping behavior and way of thinking or vice versa.

In the meantime, Bandura (1989) proposed personal factors as the cognitive abilities, emotional state, beliefs and physical characteristics/biological events, which assist to action or behavior outcomes. In other word, human behavior is determined by own belief, emotion and thought patterns. So as to influence the personal element,

environment was found to be responsible in providing information and guidelines for a person to take any actions. Bandura (1986) added that individual learns from their social environment while processing what they learnt utilizing cognitive abilities. It also can be related to common phenomenon among children or adolescents who always imitate and observe intention of aggressive behavior and angry reactions of their parents or people around them. This theory also provides insight into the parents' role in the socialization process since parents are the nearest role models for children or adolescents (Bandura, 1969). Thus, from this theory, learning behavior through observation and imitation of others was found to be noteworthy (Bandura, 1977). All in all, this principle is termed triadic reciprocity and it can be resolved that, social cognitive theory emphasizes the impact of human's proactive nature on behavior outcomes through self-system.

Apart from that, capability in self-regulating thoughts, feeling, determination and behavior was also considered as the central to social cognitive theory. Bandura (1978, 1991) has promoted self-regulation as a crucial technique or process of controlling and directing behavior. In other word, self-regulation is considered as the idea of appropriate or inappropriate behavior and relevant selection of actions (Williams, 2010). Comprehensively, operative self-regulation is denoted by a cyclical process of active monitoring of performance environment, development of efficient task strategies, skilful strategies implementation and results monitoring (Locke & Latham, 1990; Zimmerman, 1989).

Development of the degree of self-regulation in children and adolescents is closely linked to the process of socialization and social influences; mainly the nuclear family. Children and adolescents who grow in a family environment will normally internalize self-regulatory models as well as the pattern perceived in their parents. This has been supported by Brody and colleagues (1996) as they identified the essential role of parental processes in developing self-regulatory among children. Good interaction between parents and children not only led to greater self-regulation, yet, the children will concurrently have healthier social and cognitive development. In contrast, based on the triadic perspective, by neglecting or viewing social and physical environment factors as a stumbling block to personal development, a person was found to have lack sufficient self-regulatory skill to manage their lives (Bandura, 1991). Moreover, disengagement of moral self-regulatory principles has been associated with the incidence of aggression, crime and any other misbehavior among adolescents (Bandura, Barbaranelli, Caprara & Pastorelli, 1996).

In social cognitive theory, Bandura (1986, 1991) conveyed a clearer view of the role of socialization process and self-regulation in explaining the human behavior as the outcome. Applied to this study, the environment element namely relationship with parents is believed to influence the adolescents' outcome (i.e., aggressive and rule-breaking behavior) via the personal element (i.e., cognitive distortion). Moreover, it is expected that adolescents' self-regulation gives impact on the environment, personal element and externalizing problem behavior, served as potential moderator.

1.6.2 Attachment Theory (Bowlby, 1969)

Bowlby (1969, 1982), who developed the attachment theory, stated that attachment refers to an instinctual system which is responsible for maintaining proximity to the attachment figures and contributes to an individual's survival. In other words, this widely used theory emphasizes that attachment is viewed as an affectional bonding existing between parents (i.e., father and mother) or caregivers and children (Bowlby, 1988). Notably, stressful situations may lead to attachment behavior displayed among children (Rice, 1990) in order to maintain proximity to their attachment figures. However, once a parent-child attachment relationship (i.e., paternal and maternal) is disturbed, long-term negative consequences such as aggressive and delinquent behavior are often observed in children and adolescents (Bowlby, 1944, 1973; Marsh, McFarland, Allen, McElhaney, & Land, 2003). In short, the attachment theory (Bowlby, 1969) was used in this study due to its postulation on the importance of the quality of the parent-child relationship, specifically that with the father or the mother, in influencing numerous factors throughout an individual's life (Schore & Schore, 2008). As emphasized by extant literature, parental attachment (i.e., paternal and maternal) may be deemed as a vital construct in understanding the behavioral patterns of individuals (e.g., Al-Yagon, 2015; Fearon et al., 2010; Forslund, 2018).

Based on Figure 1.2, the three important elements highlighted by the attachment theory that explain the effect of attachment throughout an individual's lifespan include, the quality of attachment, behavioral/outcomes of attachment, and the cognitive process. The quality of attachment or attachment styles such as secure or insecure attachment commonly results in a few attachment behavior among children. In 1951, Bowlby emphasized that attachment can be explained in terms of four behavioral characteristics, namely, proximity maintenance (represents the need to be close to a caregiver), the child seeks the attachment figure (for protection and comfort or safe haven when facing distress), the designation of the attachment figure as the child's secure base (helps the child to discover the surroundings without fear and doubt) and separation distress (refers to anxiety that results from the absence of attachment figures).

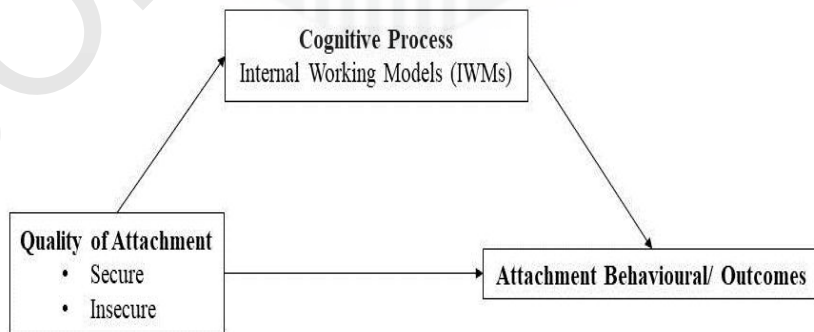


Figure 1.2 : The Attachment Theory (Bowlby, 1969)

Correspondingly, Ainsworth (1961, 1967) suggested three patterns of attachment behavior depending on the strength and quality of mother-child attachment relationship, namely, secure, insecure and non-attached. According to Ainsworth (1967), secure attachment entails more physical contact, more mother-child interaction, social encouragement, the rapid gratification of creature-comfort and also a feeling of freedom to explore the surrounding environment. However, the non-attached category was omitted, and insecure attachment was divided into two categories consisting of insecure-avoidant and insecure-resistant/ambivalent attachment.

Secure attachment is also known as Type B, which is exhibited when a child cries once separated from the mother but calms down easily upon reunion. In contrast, insecure-avoidant or Type A is manifested by infants' refusal to have contact with their mothers upon reunion and they usually divert their attention to other things around them. Such avoidance by the child occurs as a strategy to elude anger that may bring about bad responses to the attachment figure (Belsky & Nezworski, 1988). Meanwhile, the insecure ambivalent/resistant or Type C is displayed when infants feel upset due to the absence of their mothers, and later, upon reunion, they are not easily comforted. Specifically, they repel contact, although they seek proximity. They want to be close to the mother, yet they feel irritated with their mothers and are definitely hard to console. They also cling to their mothers and find it quite tough to play again (Ainsworth, Blehar, Waters & Wall, 1978). Lastly, Main and Solomon (1990) added a fourth category, that is, insecure-disorganized or Type D. This category indicates the disorganization of adaptive strategies of an infant, which occurs when he/she is in need of safety and comfort, but the caregivers display fearsome behavior towards him/her. Nevertheless, such parental behavior may be exhibited when caregivers have experienced unpleasant situations, such as unresolved loss and trauma.

Further, according to Bowlby (1988), the cognitive process in the attachment theory refers to the internal working models of relationships constructed by children based on their attachment experiences with their caregivers or parents (i.e. depends on the quality of attachment with the father and mother at home). Specifically, the attachment system employs cognitive components, particularly the internal working models or mental representations of the self, the attachment figures (i.e., father, mother and caregivers) and the environment during interactions between the child and the primary caregiver, the child's own actions as well as the reactions received by the child from these actions (Cicchetti, Cummings, Greenberg & Marvin, 1993; Johnson et al., 2010).

In 2000, Waters and Cumming extended Bowlby's supposition of the beginning and merging of attachment patterns which is attained in early childhood (Bowlby, 1969). They highlighted that the attachment theory is also applicable to understanding the evolution of working models concerning experiences during the adolescence stage (Allen et al., 2003). The basic framework of the internal working model process comprises a wide range of positive as well as negative attachment-relevant memories and mental schemas formed by a combination of previous experiences mainly occurring at home and during childhood. Similar to the clarifications made by attachment theorists such as Lyddon, Bradford, and Nelson (1993), as well as Schneider (1991), the internal

working model constructed during childhood becomes rigid and hard to be altered and tend to be consistent during adolescence. The cognitive bias function or cognitive distortion has been found to exist among children and adolescents during their novel experiences, which potentially leads to negative attachment behavior (Bowlby, 1944, 1973). For instance, an insecurely attached child with maladaptive internal working models of others will engage in high levels of problem behavior to fight against the hostile environment; with the opposite occurring for the securely attached child (Bowlby, 1973). It cannot be denied that children and adolescents with different attachment styles not only vary in their internalized expectations regarding their parents or caregivers, but also perform distinct ways of information processing (Dykas & Cassidy, 2011). This can be explained by internal working models involving biased/distorted interpretations of certain situations and are presented via their actions or responses in the form of behavior (Barrett & Holmes, 2001; Blaustein & Kinniburgh, 2018).

All in all, the quality of parent-adolescent attachment relationship serves as a groundwork for later working models, which can generally be explained by an adolescent's mental representation of his or her perceptions of the self and ability via exhibited behavior (Ainsworth, 1989). Remarkably, the attachment theory (Bowlby, 1969) offers a relevant framework within which to examine the developmental outcomes related to institutionalization since it highlights the imperative role of the early dyadic parent-child attachment relationship for adolescents' wellbeing and it has given rise to the development of well established procedures for the attachment relationship assessment (Cassidy & Shaver, 2008). In general, the quality of parental attachment, whether secure or insecure, is an important factor and has significant implications for children's current and later development (Bowlby, 1969, 1973, 1982, 1991; Marvin & Britner, 2008). The confirmation of an internal working model (i.e., cognitive process) that depends on the quality of parent-child attachment will endorse the stability of attachment patterns as well as attachment behaviors/outcomes across the lifespan, especially at the adolescence stage (Bowlby, 1981; Collins & Read, 1990). Therefore, in the present study, parental attachment (i.e., secure and insecure parental attachment with the father and the mother) was derived from the attachment theory (Bowlby, 1969) to further investigate the behavioral outcomes of attachment, particularly, the externalizing problem behavior of juvenile offenders. Furthermore, based on the attachment theory (Bowlby, 1969), parental attachment has been found to influence the outcomes of attachment behavior through the cognitive process. As a consequence, this study employed the attachment theory to study the mediating effect of cognitive processes (i.e., negative internal working models/cognitive distortion) on the link between parental attachment (i.e., paternal and maternal) and juvenile offenders' externalizing problem behavior.

1.6.3 Psychosocial Development Theory (Erikson, 1950)

The psychosocial development theory (Erikson, 1950) emphasizes the prominence of social and cultural factors across the lifetime. Generally speaking, the psychosocial development theory (Erikson, 1950) provides a robust theoretical standpoint on the development of children, adolescents and adults. In light of personality development,

eight critical stages were proposed by the psychosocial development theory (Erikson, 1950, 1959, 1966, 1968a, 1968b). The first stage refers to the development of trust versus mistrust, which corresponds to the infantile age (0 to 1 ½ years). Next, is the autonomy versus shame and doubt stage during early childhood (1½ to 3 years). A critical period for the development of initiative versus guilt occurs at around age three to five years; whereas, age six to eleven is when either industry or inferiority develops. Once a person enters the adolescence period, the identity versus role-confusion stage takes place. Moreover, early adulthood (20 to 25 years) becomes the crucial stage for the formation of either intimacy or isolation. The next is the critical development phase for generativity versus stagnation which occurs at about 25 to 60 years. The final stage of integrity versus despair corresponds to old age. Based on Erikson's point of view, individuals come across a crisis related to the social expectation of their corresponding age group. Conflict develops between newly evolving personal needs and social demands in each stage, generally resulting in a crisis, which can further impact the development of an individual. In addition, the development of each continual aspect of personality hinges on the outcomes that shaped the earlier stages. As such, children who are incapable of positively resolving the crisis at an earlier stage may have difficulty in later stages such as adolescence and adulthood.

In the present study, the sample consisted of Malaysian adolescents, specifically juvenile offenders aged 14 to 18 years old. In view of the psychosocial development theory, it may be assumed that the respondents of this study are going through the identity versus role confusion stage. It cannot be denied that adolescence is a phase of the great revolution in which adolescents experience physical and biological maturation, gain new expectations for social adjustments, suffer from problems pertaining to self-image, and undergo a very stressful life especially in the early transition stage.

Erikson (1950) added that the major challenge experienced by adolescents is struggling with their own identity as well as role confusion. Based on the theory of psychosocial development, identity is considered as the highest accomplishment during adolescence (Erikson, 1956). Identity denotes the sense of self in the life context, while role confusion refers to the inability of a person to see clearly who he or she is and relate positively with the environment. This stage coincides with puberty and the reawakening of the sexual urge due to natural biological processes. At the same time, adolescents struggle to be accepted and affirmed by people around them, yet they also seek to have their own identity in the society. These young people go through much confusion as they have to perform a number of things and must deal with external influences, such as their parents as well as peers. In fact, most adolescents, including, juvenile offenders may develop a negative role identity, which refers to the rebellious denial of the expectations of parents and even the society (Kroger, 2000). Conflicts occurring between adolescents and the people around them, especially their parents, will create negative perceptions and revenge towards their parents due to the feeling of not being accepted that develops within the adolescent mind. As a result, they choose to demonstrate their anger by means of rebellious actions. Thus, the concept of role confusion introduced by Erikson (1970) is useful in explaining difficulties in the process of identity formation due to the influence of social figures (i.e., parents, peers and society) as well as struggling with

cognitive, physical and biological changes which could potentially lead to internalizing and externalizing problems among juvenile offenders.

1.7 Integration of Theories

Apparently, there is not a single theory that is capable of explaining the roles of parent-child relationship, personal and cognitive factors on the development of externalizing problem behavior among adolescents, mainly juvenile offenders. This framework integrates Erikson's psychosocial development theory and Bandura's social cognitive theory at the context level, meanwhile, Bowlby's attachment theory at the individual level.

The present study engages all three theories in describing how parental attachment (i.e., paternal and maternal), cognitive distortion and self-regulation influence externalizing problem behavior (i.e., aggressive and rule-breaking behavior) among juvenile offenders. The Erikson's Psychosocial development theory is employed to discuss on the identity versus role confusion stage, on which, adolescents have encountered a lot of conflicts in life, struggle to be accepted and affirmed by the society and experience confusions to do several things due to external factors or social figures. Moreover, failures to fulfil their desires could bring about a negative role identity, specifically, the rebellious denial of parents' and society's expectations (Kroger, 2000). At the same time, the Bandura's Social Cognitive Theory is used to discuss in detail on how externalizing problem behavior was acquired and maintained through human's proactive nature (i.e., environment factor) and self-system (i.e., personal/cognitive factors). All these three reciprocal interacting elements explained the effect of socialization process at context level. Meanwhile, at the individual level, Bowlby's attachment theory emphasizes on the importance of emotion bonding between parent and their children/adolescents, or known as parental attachment and the existence of biased internal working models due to negative attachment-relevant memories will result in negative attachment behaviors (Bowlby, 1944, 1973). Besides, cognitive distortion was operationalized in the present study as representing the negative or biased internal working models developed by adolescents and was consistent with Bandura's (1986) elaboration on the personal/cognitive factors in social cognitive theory. To put it briefly, Bandura (1986) has provided the fundamental view of social influences at context level, specifically, refers to the role of parental attachment as introduced by Bowlby (1969) on adolescents behavioral outcomes, via biased cognitive process (i.e., cognitive distortion) along the crucial developmental stage, that is the identity versus role confusion stage (Erikson, 1950), which is representing the bigger context in this study (refer Figure 1.3).

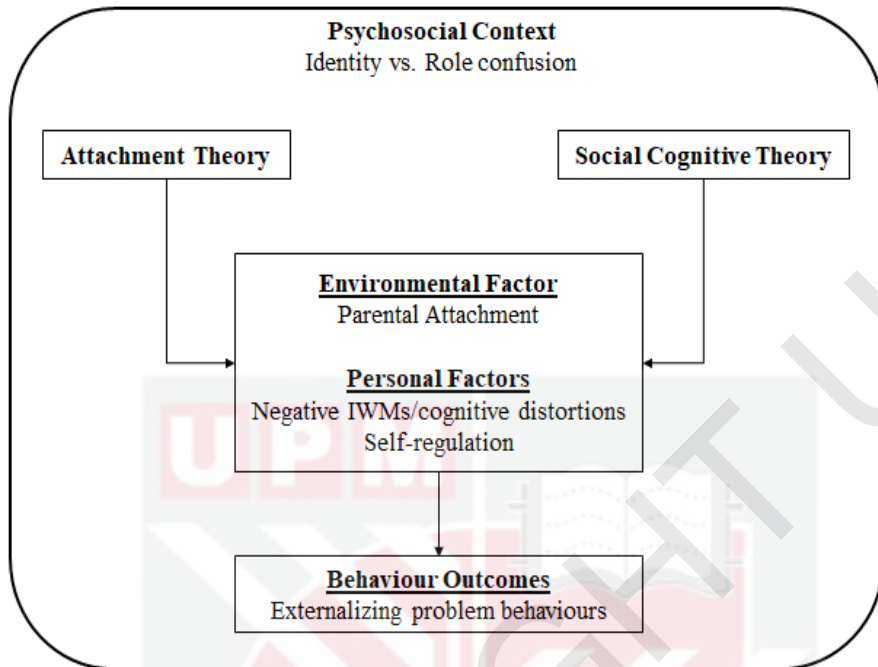


Figure 1.3 : Theoretical Framework of the Present Study

However, as psychosocial development theory and attachment theory do not focus on the self-regulation, the element mentioned by Bandura’s Social Cognitive Theory is adopted to complement Bowlby’s idea on behavioral development of adolescents. Once again, Bandura’s Social Cognitive Theory is used to discuss about the role played by self-regulation on the three reciprocal interacting elements. By referring to this theory, self-regulation is a vital technique in controlling and directing behavior, which is denoted by a cyclical process of active monitoring of performance environment, development of efficient task strategies, skilful strategies implementation and results monitoring (Locke & Latham, 1990; Zimmerman, 1989). Instead, low self-regulatory skill is associated with a wide range of personal problems, such as misbehavior, crime and aggression (Bandura et al., 1996). This is due to the less effective socialization process (Brody et al., 1996) and mere misinformation of personal practices (Prochaska, DiClemente, & Norcross, 1992), which resulted in arduous changes in behavior. Thus, the present study intended to investigate the relationships between social environment (i.e., parental attachment) and juvenile offenders’ externalizing problem behavior (i.e., aggressive and rule-breaking behavior) via personal/cognitive element (i.e., cognitive distortion), as well as self-regulation as moderator.

1.8 Conceptual Framework

Conceptual framework as presented in Figure 1.4 was developed based on the integration of the Erikson's Psychosocial Development Theory (1950), Bandura's Social Cognitive Theory (1986) and Bowlby's Attachment Theory (1969). The dependent variable in this study is externalizing problem behavior, which is measured by aggressive and rule-breaking behavior among juvenile offenders. The independent variable is parental attachment (i.e., both paternal and maternal attachment) during juvenile offenders' free-living period. The mediating variable is juvenile offenders' level of cognitive distortion, while self-regulation as the moderating variable.

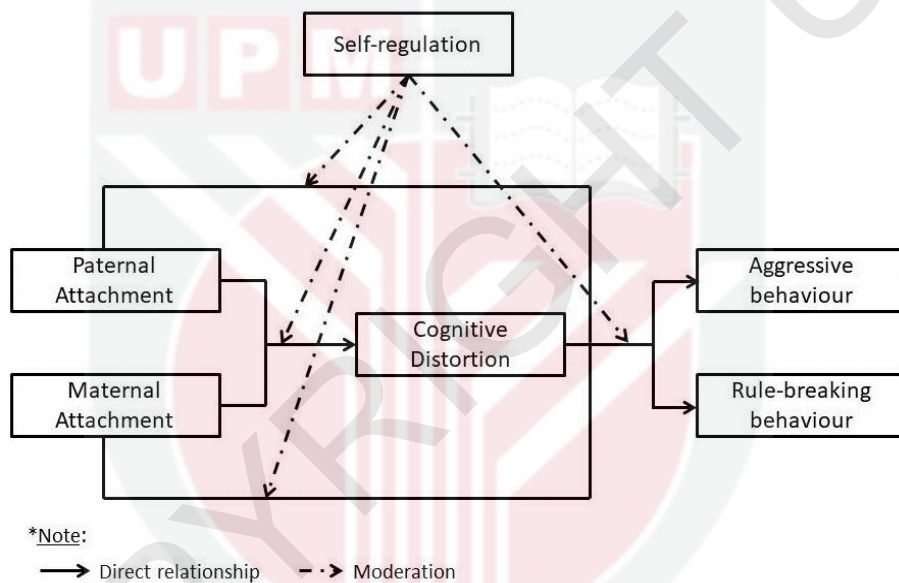


Figure 1.4 : Conceptual Framework of the Present Study

The Psychosocial Development Theory suggests that externalizing problem behavior among adolescents or juvenile offenders are the highlighted output of social acceptance since they have to struggle and face multiple issues in order to fulfil the social expectations. Under these circumstances, Bandura's Social Cognitive Theory (1969) proposes that externalizing problem behavior are learned and reinforced from the social influences, especially the parents and personal/cognitive factors of the adolescents. To be more specific, Bowlby's Attachment Theory (1969) recommends the importance of emotional bonding between parents and their children or adolescents, known as parental attachment on the behavioral outcomes. According to this theory, adolescents who possess better or secure attachment with parents tend to be calmer and better attitudes, while, adolescents with poor or insecure parental attachment are more likely to exhibit externalizing problem behavior (Ratip, 2013; Suis @ Mohd Rusdy et al., 2016).

Bandura's Social Cognitive Theory (1986) and Bowlby's Attachment Theory (1969) focus on the role of cognitive factor, which is cognitive distortion on externalizing problem behavior. Personal environment (Bandura, 1986), refers to parental attachment also acts as groundwork for internal working models across the challenging adolescence phase (Bowlby, 1969). The existence of biased internal working models or cognitive distortion due to negative attachment-relevant memories from the parents will result in negative attachment behaviors (Bowlby, 1944, 1973). Concerning the internal working model, this research further explored cognitive distortion as a potential factor that mediates the direct path between parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking) among juvenile offenders. Previous study by Vries and colleagues (2016) confirmed the mediating role of cognitive distortion on the link between parental attachment and externalizing problem among adolescents. In line with Bandura (1986) and Bowlby (1969), it revealed that poor social influence; insecure parental attachment as factor that assists to predict externalizing problem behavior of children and adolescents who possess higher cognitive distortion (de Vries et al., 2016; Smeijers et al., 2018).

Moreover, Bandura's Social Cognitive Theory (1986) also underlines that thoughts, feeling, determination and behavior can be controlled and directed by self-regulation. Low self-regulatory skill is associated with a wide range of personal problems, such as misbehavior, crime and aggression (Bandura et al., 1996). This theory basically states that development of the degree of self-regulation in children and adolescents is closely linked to the process of socialization and by viewing social and physical environment factors as an obstruction to personal development; adolescents will ends with lack sufficient self-regulatory skill to manage their lives (Bandura, 1991). In this regard, the relationship between parental attachment and externalizing problems behavior were predicted to differ across self-regulation. Thus, it is expected that adolescents' self-regulation gives impact on the environment, personal element and externalizing problem behavior, served as potential moderator in this study.

In a nutshell, the present study explored all variables simultaneously and this study was designed to extend existing literature in several ways. First, the present study aims to examine the relationships between parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking). Second, this study investigates cognitive distortion as a prospective mediator in the association between parental attachment (i.e., paternal and maternal) and externalizing problem behavior (i.e., aggressive and rule-breaking). Finally, this study tests if the relationships among parental attachment (i.e., paternal and maternal), cognitive distortion and externalizing problem behavior (i.e., aggressive and rule-breaking) would be stable across self-regulation or also refers to moderating role of self-regulation.

1.9 Significance of the Study

Adolescents make up a huge portion of any developing country, including Malaysia. They are not only seen as the future leaders, but as individuals who will be the foremost

contributors to Malaysia in terms of human capital and socioeconomic development. For that reason, it is essential to improve understanding of countless factors that influence the behavioral development of adolescents.

It is vital to note that the findings of this study may benefit relevant authorities, for example, future researchers in related fields, adolescents, parents, the community, policy makers, probation officers, personnel of all juvenile rehabilitation institutions and the government (especially the Ministry of Women, Family and Community Development, the Department of Social Welfare of Malaysia and the Ministry of Education) as all these sectors play imperative roles in controlling the social problems of adolescents nowadays. It cannot be denied that externalizing problem behavior among adolescents require persistent attention. Hence, this is an important study as it is expected to provide a better understanding of the current issues among adolescents, including those who are in the rehabilitation institutions.

Under this circumstance, the present study may provide additional knowledge to existing body of literature on Asian adolescents' externalizing problem behavior (i.e., aggressive and rule-breaking), particularly in exploring the contributing roles of parental attachment (i.e., paternal and maternal), cognitive distortion, and self-regulation specifically among juvenile offenders. This study can also be used as reference and guide to scholars and future researchers in exploring other potential variables that might relate to externalizing problem behavior (i.e., aggressive and rule-breaking) among adolescents.

Apart from that, this study may offer valuable information to juvenile offenders as well as all Malaysian adolescents about the importance of having a good relationship with their parents or caregivers and on the capability of cognitive distortions in influencing and controlling their externalizing problem behavior (i.e., aggressive and rule-breaking). Adolescents' internal conflicts (i.e., cognitive distortion and low level of self-regulation) and quality of parental attachment (i.e., paternal and maternal) are catalysts to social problems. Therefore, it is expected that this study will be able to guide adolescents in making changes in themselves in relation to personal and social functioning as it can assure them of a better life in the future.

From the theoretical perspective, the findings of this study may refine family institutions' (e.g., parents) knowledge and understanding of the impact of quality of parental attachment and cognitive distortion on the behavioral outcomes of adolescents. It is also believed that the results of this study will encourage parents to pay more attention to their grown-up children, specifically in terms of their behavioral aspects and educate parents about the needs of their children to be loved and fully supported throughout their adolescence stage.

In addition, this study is expected to provide guidance to the community in dealing with cognitively distorted adolescents who are involved in externalizing problem behavior. It is a fact that adolescents tend to demonstrate rebellion through their behavior, which is contrary to the norms of the society due to their failure in fulfilling social expectations linked to their own cognitive distortion. Hence, these young people should not be marginalized from their microsystem. The community should intervene by using appropriate approaches such as giving an advice or any form of assistance considered applicable for both parents and adolescents to ensure that externalizing problem behavior can be controlled and worse consequences can be prevented altogether.

As to the probation officers, the personnel of juvenile rehabilitation institutions, counselors and other related parties, the findings of this study can serve as a valuable standard for conducting more effective family-based programs that aim to improve the quality of parental attachment. Doing so may provide a solution to parent-adolescent conflict and tackle the problem regarding cognitive distortion that has been found to lead to externalizing problem behavior among adolescents. Additionally, the findings of the present study may offer helpful information to policy makers in designing appropriate strategies, for example, preventive programs and treatments at all social levels, together with new effective policies which need to be implemented to avoid cognitive distortion and externalizing problem behavior among adolescents. Besides, the outcomes of this study could be employed as guidelines for policy makers to improve strategies in organizing and coordinating training required by secondary school teachers to resolve issues related to adolescent externalizing problem behavior at the school level.

Lastly, as aptly noted by Idris (2017), there is a lack of current studies on the effectiveness of parenting programs in handling behavioral problems among Malaysian children and adolescents; hence, the descriptive findings of this study may provide beneficial information to government authorities, such as the Ministry of Women, Family and Community Development, the Ministry of Education and the Department of Social Welfare, that may be utilized to take initiatives in offering essential support to parents, caregivers and even teachers. Such support can be implemented via interventions or campaigns with the aim to improve the quality of parental attachment, mainly among young parents, in constructing healthy cognitive as well as behavioral outcomes of the children, and for the sake of the country's betterment.

1.10 Definition of Terminology

In this section, the main research variables and other related concepts are defined conceptually as well as operationally or how they were applied in the present study. The purpose of this section is to familiarize the readers with the research constructs and offer a basis for the study. These concepts include adolescent, externalizing problem behavior, parental attachment, cognitive distortion, and self-regulation.

Adolescent

Conceptual definition

The World Health Organization (WHO, 2011) and Santrock (2016) describe an adolescent as a young person who is experiencing the transitional process from childhood to adulthood stage, normally occurring at 10 to 19 years old. Nevertheless, other scholars, such as Sawyer and colleagues (2018) have recently suggested that adolescence might correspond to 10 to 24 years old, depending on the developmental progress of the adolescent.

Operational definition

In this study, an adolescent refers to a juvenile offender who was staying at a rehabilitation institution (i.e., Tunas Bakti School) during the duration of this study and aged 14 to 18 years old.

Juvenile Offenders

Conceptual definition

As prescribed in the Juvenile Court Act 1947, juvenile offenders refer to young people less than 18 years old and are undergoing a rehabilitation program as ordered by the court due to criminal involvement. Meanwhile, according to the Prison Act 1995, a juvenile offender is as an underage prisoner, more precisely below 21 years old.

Operational definition

Operationally, adolescents who were undergoing treatment and rehabilitation program from any of the eight rehabilitation institutions or Tunas Bakti Schools in Malaysia.

Externalizing Problem Behavior

Conceptual definition

According to Wallinius (2012), externalizing problem behavior pertain to acting out aggressive and conduct-disorder behavior. In general, externalizing problem behavior refers to negative outward actions towards the surrounding environment; therefore involving violations of important social or moral norms, violence and substance abuse (Barriga, Morrison, Liau, & Gibbs, 2001).

Operational definition

In the present study, externalizing problem behavior refers to the aggregated score of the responses on the Youth Self Report (YSR) (Achenbach, 1991). The higher the scores, the higher the level of aggressive and rule-breaking behavior committed.

Parental Attachment

Conceptual definition

Bowlby (1988) defined parental attachment as an affectional bond between parents or caregivers and children that binds them together in space and endures over time. Meanwhile, Armsden and Greenberg (1987) defined attachment as a strong love bond. Thus, it is clear that a parent is an important attachment figure and social support system that allows adolescents to discover and master new environments (Armsden & Greenberg, 1987).

Operational definition

Operationally, parental attachment refers to the total scores obtained from The Domain of Adolescent Attachment Scale-Malay (DAAS-Malay) which was revised by Zulkefly and Wilkinson (2013). The higher the score, the higher the quality of paternal and maternal attachment as perceived by juvenile offenders.

Cognitive Distortion

Conceptual definition

Based on the definition by Barriga, Gibbs, Potter and Liao (2001), cognitive distortion refers to inaccurate ways of conferring meaning upon experiences. In detail, cognitive distortion is often employed as an umbrella term for pseudo-explanations and rationalizations for deviant behavior and offense-supporting attitudes (Barriga, Landau, Stinson, Liao, & Gibbs, 2000; Maruna & Copes, 2004; Ó Ciardha & Gannon, 2011) or criminal thinking patterns and criminal minds (Wallinius et al., 2011).

Operational definition

Cognitive distortion refers to the accumulated score of the responses on the 16-item version of 'How I Think' Questionnaire (HIT-16-Q) which was revised by Ara and Shah (2015). Cognitive distortion was operationally associated with externalizing behavior among juvenile offenders. A higher score indicates a higher level of cognitive distortion among juvenile offenders.

Self-Regulation

Conceptual definition

Self-regulation mainly refers to the capability to increase control of bodily functions, manage grateful feelings and maintain focus and attention of a person in an adaptive manner across norm context (Bernier, Carlson, Deschênes, & Matte-Gagné, 2012; Jahromi & Stifter, 2008; Phillips & Shonkoff, 2000; Volling, McElwain, Notaro, & Herrera, 2002). Other terms which have been used synonymously with self-regulation include executive functioning (i.e., cognitive tasks related to self-regulation), emotional regulation and self-control or effortful control (i.e., behavioral tasks related to self-regulation) (Raver, Jones, Li-Grining, Zhai, Bub, & Pressler, 2011).

Operational definition

Operationally, self-regulation among juvenile offenders in the present study refers to the total scores obtained from the Self-Regulation Scale (SRS) (Novak & Clayton, 2001). Higher scores reveal better capability of self-regulation among juvenile offenders.

1.11 Limitations of the Study

Several limitations were identified and should be recognized so that they will be addressed in future works. The first major limitation of this research study arose from the selected research design. This study was cross-sectional in nature which precludes the interpretation of the causal relationships between the study variables (i.e., parental attachment, cognitive distortion and externalizing problem behavior). A cross-sectional design is carried out at one point in time. Due to this, the data provided no indication of the sequence of certain events; hence, it is impossible to infer symptom development or causality over time. In view of this, the findings of this study should be cautiously interpreted.

Next, this study is limited by its reliance on information derived from self-report and retrospective measure (i.e., parental attachment), that is, depending only on self-reports of the juvenile offenders. In other words, the research results were based on the reflective reports of respondents regarding their relationship with parents, right before they get into the rehabilitation institution (throughout their adolescence stage only). Although personal memories that are stated and restated become more stable over time (Bauer, Tasdemir-Ozdes & Larkina, 2014; Barnier, Hung, & Conway, 2004; Peterson, Warren & Short, 2011; Stone, Barnier, Sutton, & Hirst, 2010), it cannot be denied that it may bring potential biases into the data due to the possible misinterpretation and recall of adolescents pertaining to their relationships with the parents, cognitive state and problematic behavior (Colet, Pamies, Carrasco, & Seva, 2012).

The final limitation pertains to the methodology and data analyses of the present study. Due to the small sample size of the present study, it might have caused the decrease of the statistical power of the results and the non-significant paths found in the final structural model. Indeed, a larger sample size can provide better explanations on the relationships among the variables of interest.

1.12 Chapter Summary

This chapter presented the introduction of the present study, which highlighted the requirements for conducting the research, followed by the statement of the problem and the derivation of the five research questions. The ensuing subtopics consisted of objectives and research hypotheses. Next, three theories (i.e., Bowlby's attachment theory (1969), Bandura's Social Cognitive theory (1989) and Erikson's psychosocial development theory (1950) were incorporated in this study to develop the conceptual framework. Lastly, the significance of the study, definitions of terminologies along with the limitations of study were also discussed. The next chapter will comprehensively review and discuss the literature relevant to the present study.



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BIODATA OF STUDENT

Athirah Yasmin Mohd Shakir was born in Sungai Petani, Kedah, Malaysia on the 12th of March 1990. Her primary education platform commenced at Sekolah Kebangsaan Sungai Dua, Penang. She continued her secondary education at Sekolah Menengah Kebangsaan Agama Al-Irshad, Penang for three years (Form 3), before moving to Johor Bahru with her family. She then completed her secondary education at Sekolah Menengah Kebangsaan Taman Universiti, Johor. Then, she obtained her degree with first class honored in Bachelor of Science in Human Development, minoring in Developmental Psychology from Universiti Putra Malaysia. Due to her passion in psychology and her ambition to be a psychologist, she pursued the degree of Doctor of Philosophy (Ph.D) in Developmental Psychology at the same university, with privilege to skip Master. Throughout her study period, she was well-supervised by Prof. Dr. Rozumah Baharudin, participated in research, attended some academic events, seminars and workshops as well as published journal articles. Her academic related achievements and experiences are elaborated below:

Academic Related Achievement and Experiences

Academic Awards

- Vice Chancellor's List Award (First Semester of 2012/13): Awarded to students with grade point average (GPA) 4.00.
- Dean's List Award (First Semester of 2011/12, Second Semester of 2011/12, & Second Semester of 2012/13): Awarded to students with grade point average (GPA) 3.75 and above.
- Principle' Award (First Semester of 2009/10, First Semester of 2011/12, & Second Semester of 2012/13): Awarded to students with grade point average (GPA) 3.50 and above.
- MyBrain 15 MyPhD (September 2013 – September 2016) – Scholarship by Ministry of Higher Education Malaysia

Research Experiences

- Assisted in Project "The Malaysian Parenting Behavior Inventory" from September 2013 to May 2014.
- Research Assistant for Project "Exploring the Pathways from Parental Religiosity to Problem Behaviors and Cognitive Functioning for Muslim Adolescents" from June 2013 to May 2015.
- Graduate Research Assistant for Project "Development of a Cognitive Vulnerabilities Model for Psychological Problems in Adolescents: Attachment

and Negative Life Events as Predisposing Factors” from August 2017 to October 2017.

Teaching Experiences

- Tuition teacher for Bahasa Malaysia subject (secondary school) at Al-Hidayah Tuition Centre, Bangi, Malaysia from March 2014 to November 2015.
- Home tutor for Mathematics, Science and English subjects (primary and secondary school) from January 2015 to present.
- Demonstrator for FEM 3002 (Research Methodology) course at Universiti Putra Malaysia (UPM), from February 2018 to present.

Certificate Course/Workshop

- Putra Sarjana Seminar on “Time Management”, by School of Graduate Studies, UPM, 11 September 2013
- Putra Sarjana Seminar on “Academic Careers”, by School of Graduate Studies, UPM, 12 September 2013
- Putra Sarjana Seminar on “The Mind of An Academic”, by School of Graduate Studies, UPM, 12 September 2013
- Putra Sarjana Seminar on “Avoiding Plagiarism”, by School of Graduate Studies, UPM, 26 September 2013
- Putra Sarjana Seminar on “Academic and Professional Networking”, by School of Graduate Studies, UPM, 27 September 2013
- Putra Sarjana Seminar on “Organising Your Writing”, by School of Graduate Studies, UPM, 30 September 2013
- Workshop on How to Write A Quantitative Research Proposal, Class of FEM 6001, Faculty of Human Ecology, UPM, 29 October 2014
- Workshop on Organizing and Writing Literature Review, Class of FEM 6001, Faculty of Human Ecology, UPM, 12 November 2014
- Workshop on Systematic Literature Review with ATLAS.ti, The UKM Graduate Centre Workshop Series 12/2016, 17 March 2016

LIST OF PUBLICATIONS

Journal Article (Published)

- Shakir, A. Y. M., Zulkefly, N. S., Baharudin, R., Arshat, Z., & Ismail, Z. (2020). Maternal Attachment and Cognitive Distortions as Predictors of Aggressive Behaviors among Juvenile Offenders in Malaysia. *Journal of Advanced Research in Dynamical and Control Systems*, 12 (08-Special Issue), 1026-1032.
- Shakir, A. Y. M., & Su'ud, S. D. (2020). Gender Differences in the Relationship Between Peer Relationship, Loneliness and Social Anxiety Symptoms among Students from Single-Parent Families in MSU, Shah Alam. *Solid State Technology*, 63(6), 11228-11244.
- Shakir, A. Y. M., & Ramasenteram, M. (2020). The Relationships between Loneliness, Parenting Styles, and Suicidal Behavior among University Students. *Psychology and Education*, (57)9, 2508-2512.
- Aziz, D. A., Shakir, A. Y. M., & Suhaime, N. S. (2020). Mindfulness, Self-Compassion, and Psychological Flexibility as Predictors of Depression among Students. *Psychology and Education*, (57)9, 2504-2507.

Journal Article (Submitted)

- Shakir, A. Y. M., Zulkefly, N. S., Baharudin, R., Arshat, Z., & Ismail, Z. (2020). Maternal Attachment and Cognitive Distortion of Malaysian Adolescents in Juvenile Rehabilitation Residential Schools: Self-Regulation as Mediating Mechanism. *Polish Psychological Bulletin (PBB)*.
- Shakir, A. Y. M., & Carmergam, S. (2021). Financial well-being, Mindfulness and Marital Duration as Predictors of Relationship Satisfaction among Married Couples in Malaysia. *Polish Psychological Bulletin (PBB)*.



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