ORIGINAL ARTICLE

Paternal Attachment, Negative Life Events, Automatic Thoughts and Depressive Symptoms of Adolescents in Peninsular Malaysia

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ABSTRACT

Introduction: Depressive symptoms are major public health issues with significantly increasing rates during adolescence. Specific factors and mechanisms associated with depressive symptoms still need to be identified. The present study aimed to examine direct relationships between paternal attachment and negative life events (NLE) to depressive symptoms. Indirect effect of automatic thoughts on the relationships was also examined. **Methods:** A sample of 1030 adolescents aged between 13 and 19 years (mean=15.36) was recruited using probability proportional to size cluster sampling from selected states in Peninsular Malaysia to complete self-report measures on the study variables. **Results:** Structural equation modelling indicated that paternal attachment in terms of secure, approachability and anxious fearful were directly associated to depressive symptoms. Broadly, increases in secure and approachability attachments followed by decreases in depressive symptoms. Adolescents who experienced anxious fearful attachment seemed to be more vulnerable to depressive symptoms. Moreover, results from mediation analyses revealed that automatic thoughts mediated the effect of two attachment variables (i.e., anxious fearful and responsiveness) and NLE to depressive symptoms. **Conclusion:** These findings shed light on the concurrent effects of attachment and life events on depressive symptoms, providing evidence on how to reduce depressive symptoms among adolescents. The current study also expands knowledge on the role of automatic thoughts as potentially relevant mediator. Intervention and prevention programs aimed at preventing adolescents from the deleterious effects of depressive symptoms should involve both parents and adolescents in order to promote optimal attachment relationships and minimize depressive cognitions in adolescents.

Keywords: Paternal attachment, negative life events, automatic thoughts, depressive symptoms

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INTRODUCTION

Globally, about 350 million people are suffering from depressive symptoms (1). Depressive symptoms are among the major human blights that can affect a larger portion of an individual's life course. Over the past few decades, literature has seen adolescence as a high risk period for the commencement of depressive symptoms (2-4). As an individual progress through adolescence, depressive symptoms become more prevalent.

Adolescence is a challenging developmental period that is typified by a convergence of physical, psychological and social challenges. During this stage, adolescents experience several dramatic formative transformations that signal their passage into adulthood. Life transformations in social relationships, emotions, cognitions, body image, school and social functioning make adolescence a high-risk period for the development of various mental health problems. Such transformations will induce several expectations, that if unmet, will confront adolescents with ambiguity and contribute to the development of internalizing psychopathology, particularly depressive symptoms (5,6).

Depressive symptoms occur quite frequently among adolescents and it is a forerunner for other serious psychological problems (7). The incidence and appearance of depressive symptoms in adolescents have been described across age, sex and ethnic groups from numerous samples around the world in both cross-sectional (2,8) and longitudinal studies (9,10). In view of

reports that depressive symptomatology is an epidemic issue across the globe, it has become one of the most widely studied research topics in Malaysia.

Since depressive symptoms appear to be one of the popular topics of psychological health research in Malaysia, a growing number of studies (11-13) has been conducted to delve into the prevalence of depressive symptoms in Malaysian adolescents. For example, 9.8% of 235 adolescents from 14 residential homes in Malaysia were reported to have a major depressive disorder (12). In addition, a study conducted by Kaur, Cheong (11) revealed that 17.7% of adolescents who participated in the Malaysia Global School-based Health Survey were found to have depressive symptoms. Similarly, a cross-sectional study (13) that was conducted on adolescents from Johor, Malaysia reported that 33.2% had mild depressive symptoms, while the prevalence rates for moderate, severe and extremely severe depressive symptoms were 21.5%, 18.1% and 3.0%, respectively. These studies (11-13) underlined the idea that Malaysian adolescents constitute a high-risk population for depressive symptoms. Therefore, considerable attention should be directed toward understanding the developmental etiology of depressive symptoms in Malaysian adolescents.

Social interactions play an important role in adolescents' development (14). Adolescents internalize their ongoing interactions with parents into "internal working models" that subsequently influence their expectations and beliefs regarding the social world. These expectations and beliefs are developed based on adolescents pattern of attachment with parents, specifically whether adolescents feel accepted and loved, or neglected and unwanted by their parents. Variations of attachment patterns with parents are categorized based on the degree to which adolescents perceive their parents' to be available in times of need and feel comfortable going to them for support (15). Specifically, securely attached adolescents manifest better psychological well-being and higher sociability compared to those with an insecure attachments such as avoidant and anxious. Father and mother attachments are equally important in adolescents and comprised equal foci in past research although they may differ qualitatively (16). Mothers have always been known as the primary caregivers in contemporary society. Therefore, mothers commonly act as a secure base that provide support and care especially in times of distress. Differently, through attachment relations, fathers are more likely to promote exploration, autonomy and risk taking of adolescents (16). Previous studies (17, 18) have revealed distinct contributions of paternal and maternal attachment in adolescents. For example, secure father attachment contributed significantly to several factors of socio-emotional adjustment while secure mother attachment contributed to all of the factors from socio-emotional adjustment (17). Additionally, a meta-analysis study revealed that stronger effect sizes were found for maternal attachment than paternal attachment in examining the association between attachment to parents and delinquency (18).

Previous research conducted on parent-adolescents interactions has primarily concentrated on mothers even though as an individual approaches adolescence, the influence of fathers becomes more equivalent to mothers (19). Based on the recent upsurge of interest in the fathers' influence on adolescent's development, increased research on paternal attachment is deemed necessary since research related to fathers remains understudied when compared to mothers. While much research has focused on maternal attachment during infancy or childhood, paternal attachment and its role on the development of depressive symptoms in adolescents have received an increasing attention in recent years (19). Attachment theory (20) hypothesizes that adolescents who experience secure attachment which is characterized by responsiveness, and adequate satisfaction of physical and emotional needs will develop internal representations of their attachment figure (i.e. fathers) as safe and available all the time. This will subsequently become a prototype for adolescents' future relationships and influence their later psychological development, including depressive symptoms (7,21).

Apart from paternal attachment, NLE is also considered as an important factor that may foment the development of depressive symptoms in adolescents (22-25). Adolescents' views about themselves, the world and the future are influenced by major life events and life circumstances. The uncontrollable life events that result in various bad outcomes will increase the likelihood of developing depressive symptoms in adolescents (25). Previous studies support the idea that NLE predicts an increase in depressive symptoms and the onset of major depressive symptoms in adolescents (22-25). A multi-wave study (23) on a composite of NLE comprising minor illness or injury, being hurt by friends or peer, and significant fight with a family member, has highlighted an important pathway through which NLE may lead to the development of depressive symptoms in adolescents. A cross-sectional study also revealed that higher numbers of NLE, such as argument with close friends, and a family member was arrested, were positively associated with depressive symptoms in adolescents (26).

Despite emerging interest in the relationships between attachment, NLE and depressive symptoms in adolescents, research among Asians is still lagging far behind the extensive studies amongst the Western population. Needless to say, a small but growing body of empirical research (25,27,28) has been carried out to investigate the influence of NLE on depressive symptoms in the Asian population. Additionally, empirical research related to depressive symptoms in adolescents commonly focus on one predictor, either paternal attachment or NLE at a time. Limited research

was found that combined and analysed the unique effect of these predictors simultaneously in a study. Since these two variables are almost certainly correlated, perhaps a combination of paternal attachment and NLE will provide a better framework in understanding the emergence of depressive symptoms in adolescents.

A review of past studies has highlighted the predictors that contribute to the development of depressive symptoms in adolescents (25,27,28). Despite a large body of research that examined the direct relationships between paternal attachments, NLE and adolescents' depressive symptoms, scarce research has addressed cognitive factors that can stimulate the occurrence of depressive symptoms in adolescents (29). Beck's (30) model of depression suggested that automatic thoughts trigger the existence of depressive symptoms. Adolescents who are suffering from having negative and maladaptive cognitions which are characterized by depressogenic thinking could possibly enhance their experience of depressive symptoms (31). On the other hand, past studies have attempted to explore the potential role of automatic thoughts as mediator (32-34). Although the presence of automatic thoughts in depressive symptomatology has been evident in previous research, its etiological role as an underlying mechanism has been less well-understood (29).

In light of previous research, the main purpose of this study was to evaluate the role of paternal attachment and NLE as predictors of depressive symptoms in adolescents. In addition, the study explored the potential mediating role of automatic thoughts on these predictive relationships. This study desired to advance parents' and adolescents' understanding on the influence of paternal attachment, NLE and automatic thoughts on adolescent development, particularly on how to alleviate the deleterious effect of depressive symptoms. In the future, this study is expected to provide government and concerned practitioners with important information for intervention and prevention strategies for the next generation. This will consequently facilitate the reduction and prevention of adolescent depressive symptoms.

MATERIALS AND METHODS

Participants
Participants for the present study were 1030 adolescents from several daily government secondary schools in Peninsular Malaysia. All the participants were recruited using probability proportional to size sampling. Their age spanned from 13 to 19 years with an average of 15.36 years (SD = 2.08; Range = 13 – 19). Seventy-seven percent of the adolescents was identified as Malay and more than half (59.4%) of them were females. A large proportion (54.6%) of the adolescents reported to have middle aged fathers (Mean= 48.76, SD. = 6.41). A majority of the fathers had good levels of education

(57.2% had a high school degree, and 29.8% had at least a bachelor's degree) nonetheless, 12.9% of the fathers had not completed high school. Further, more than half of the participants came from families in which the father was employed and with a mean monthly family income of RM2949.23 (Sd. = 2359.96).

Measures
Paternal attachment
Paternal attachment was assessed using adolescents' report on the Domains of Adolescent Attachment Scale-Malay (DAAS-Malay) (35), which has established psychometric properties. The DAAS-Malay scale comprised 23 items and was rated on a five-point Likert scale ranging from 1 (not at all) to 5 (very much). There were four items under secure, five items under anxious fearful, seven items under responsiveness, and seven items under approachability. Higher scores for each subscale indicated a high level of each paternal attachment subscale. The internal reliabilities of the secure, anxious fearful, responsiveness and approachability attachments for the study sample were 0.74, 0.67, 0.85 and 0.82, respectively.

Negative life events
Life Events Checklist-Malay (LEC-Malay) (36) was administered to measure adolescents' negative life events. The LEC-Malay contains 23 events that may have occurred in the adolescent's life. Specifically, the LEC-Malay measures negative life events concerning self or significant others, for example death of someone close, conflict with others, parental divorce and failure in a test. Adolescents rated the frequency of each event using a 3-point Likert scale ranging from 0 (never) to 2 (more than once). A sum score was generated by adding up all the negative life events experienced by the adolescents throughout their life. Higher scores indicated more negative life events experienced by the adolescents. In the current study, Cronbach's alpha was equal to 0.83.

Automatic thoughts
Adolescents completed Automatic Thoughts Questionnaire (ATQ) (37), which is a 30-item scale designed to measure the spontaneous negative self-statements and disturbing thoughts that may experience by the adolescents. The ATQ scale is rated on a 5 point Likert scale from not at all (1) to all the time (5). Higher scores indicated increased severity of negative automatic thoughts in adolescents. The Cronbach's alpha for this scale in the present study was 0.94.

Depressive symptoms
Adolescents reported on their depressive symptoms using the Beck Depression Inventory-Malay (BDI-Malay) (38). The BDI-Malay is a self-report scale that assess the severity of depressive symptomatology such as sadness, pessimism, loss of satisfaction, and failure based on 20 symptoms that could be rated from 0 to 3 according to intensity and degree of severity. Higher scores indicated

more severity of depressive symptoms. The Cronbach's alpha calculated for this scale was 0.86.

Data analyses
Preliminary analyses were conducted to examine the descriptive statistics and correlations among the study variables. In terms of multivariate analysis, the present study utilized structural equation modeling with the maximum likelihood method using AMOS 20.0. The model goodness of fit was assessed using a set of recommended goodness of fit, specifically Root Mean Squared Error of Approximation (RMSEA) < 0.05, Comparative Fit Index (CFI) > 0.90 and normed chi-square ($\chi 2/df$) < 5 (39). As additional preparation for examining the structural relations between the study variables, a measurement model was developed. Parceling technique was conducted due to a large number of items belongings to some of the variables. A full path structural model comprised parceled variables of the paternal attachment variables, negative life events, automatic thoughts and depressive symptoms was evaluated. Finally, the present study conducted mediation analyses using bootstrapping estimation procedure (40) to investigate whether automatic thoughts was the mechanism through which paternal attachment variables and NLE associated with depressive symptoms. An indirect effect will be considered as significant when zero is not included in the lower and upper limits of the 95% confidence intervals (40).

RESULTS

Preliminary analyses
Means, standard deviations, and bivariate correlations of all study variables are as presented in Table 1.

Table 1: Means, standard deviations, and bivariate correlations of study variables

|		1	2	3	4	5	6	7
1.	Secure	1						
2.	Anxious Fearful	-.392***	1					
3.	Responsiveness	.672***	-.361***	1				
4.	Approachability	.569***	-.294***	.755***	1			
5.	Negative Life Events	-.013	.162***	-.143***	-.138***	1		
6.	Automatic Thoughts	-.237***	.398***	-.304***	-.247***	.375***	1	
7.	Depressive Symptoms	-.168***	.306***	-.222***	-.212***	.285***	.553***	1
	Mean	17.19	9.52	24.31	22.85	15.27	60.69	11.80
	Sd.	2.86	3.72	5.63	5.96	7.31	18.66	7.88

Note. ***p<0.001, Sd. = Standard deviation

Significant correlations were observed for all attachments variables and NLE with both automatic thoughts and depressive symptoms. In particular, secure, responsiveness and approachability attachment were negatively correlated with both automatic thought (secure: r = -.237, p < 0.001; responsiveness: r = -.304, p < 0.001; approachability: r = -.247, p < 0.001) and depressive symptoms (secure: r = -.168, p < 0.001; responsiveness: r = -.222, p < 0.001; approachability: r

= -.212, p < 0.001). On the other hand, anxious fearful and NLE were positively correlated with automatic thoughts (anxious fearful: r = .398, p < 0.001; NLE: r = .375, p < 0.001) and depressive symptoms (anxious fearful: r = .306, p < 0.001; NLE: r = .285, p < 0.001). Generally, all of the independent variables in the present study correlated significantly with automatic thoughts and depressive symptoms, in which the magnitude of the correlations ranged from 0.168 to 0.553, and in the predicted directions.

Structural equation modelling
The full path hypothesized structural model which included parceled variables of paternal attachment, NLE, automatic thoughts and depressive symptoms was examined using structural equation modeling to determine whether the model fits the study data using the recommended goodness-of-fit. Figure 1 shows the hypothesized model with estimated standardized regression coefficients.
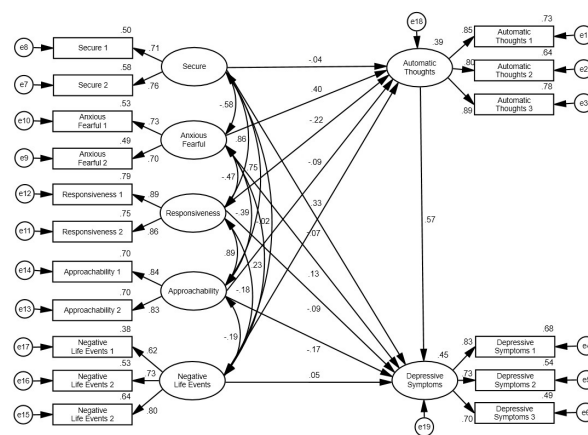

Figure 1: Initial structural model. SEM analysis indicated that the hypothesized model was a good fit to the data with χ^2=370.836, df =98, $\chi^2/$ df =3.784, p < 0.001, CFI = 0.968, GFI = 0.957, RMSEA = 0.05.

The indices for goodness-of-fit indicated that the initial structural model was a good fit to the data ($\chi2$=370.836, df =98, $\chi2/$ df =3.784, p <0.001; CFI = 0.968; GFI = 0.957; RMSEA = 0.05). Although the fit indices showed a fitting model, possible better-fit statistics for the data and a more parsimonious model could be obtained by removing non-significant paths one at a time (41) with standardized weights of less than .10 because it is deemed to be of minor importance (42) and can be deleted from the model without affecting its fit (43).

Four insignificant paths (Path 1: secure to automatic thoughts, Path 2: negative life events to depressive symptoms, Path 3: responsiveness to depressive symptoms and Path 4: approachability to automatic thoughts) were removed one by one at a time. A series of $\chi2$ difference tests (Path 1: $\Delta\chi2$=0.11, df=0, Path 2: $\Delta\chi2$=0.95, df=2, Path 3: $\Delta\chi2$=0.04, df=1 and Path 4: $\Delta\chi2$=0.62, df=1) was also conducted when a path was removed. Overall, the deletion of all the non-significant

paths with a standardized weight of less than .10 in the structural model did not jeopardize the overall adequate fit of the model. As a result, a most parsimonious model as depicted by Figure 2 was attained. The final structural model successfully achieved a better goodness of fit where $\chi^2 = 372.558$, df = 103, $\chi^2/df = 3.653$, p < 0.001; CFI = 0.968; GFI = 0.957; RMSEA = 0.05. The overall model explained 39% of the variance in automatic thoughts and 45% of the variance for depressive symptoms.
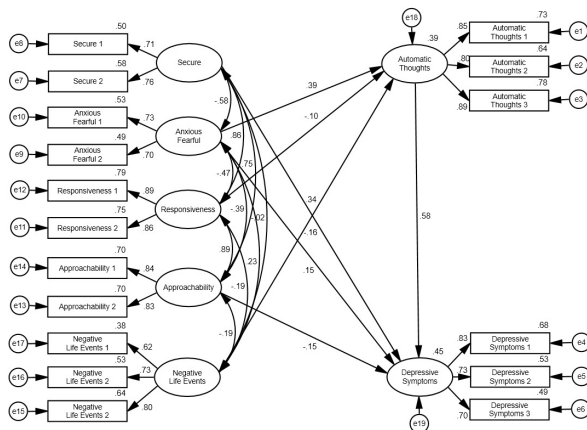
Figure 2: Final structural model. Four non-significant paths with standardized weights of less than .10 were removed one at a time to obtain a more parsimonious model. Deletions of these paths in the structural model did not jeopardize the overall model fit. Results revealed a final model with better goodness of fit where $\chi^2 = 372.558$, df = 103, $\chi^2/df = 3.653$, p < 0.001, CFI = 0.968, GFI = 0.957, RMSEA = 0.05.

An examination of the final model revealed several significant relations. Exogenous variables of secure (B = -.16, p = 0.038), anxious fearful (B =.15, p = 0.008) and approachability (B =-.15, p = 0.015) were found to have a direct, yet small influence on depressive symptoms while NLE was found to have no significant relationship with depressive symptoms. In addition, a closer review of the final model revealed that automatic thoughts had a moderate (B =.58, p = 0.001) influence on depressive symptoms.

Results of the bootstrapping analysis also clearly indicated that the indirect effects of anxious fearful (indirect effect point estimate = .23, SE = .032, p<0.001, bootstrap 95% CI =.169 to .298), responsiveness (indirect effect point estimate = - .06, SE = .023, p<0.05, bootstrap 95% CI = -.101 to -.010) and NLE (indirect effect point estimate = .20, SE = .026, p<0.001, bootstrap 95% CI = .150 to .250]) on depressive symptoms through automatic thoughts were statistically different from zero.

DISCUSSION

Results of the present study were consistent with past studies (21,47) which indicated that higher paternal attachment in terms of secure could reduce the risk of having depressive symptoms in adolescents. Secure attachment could provide a feeling of confidence in others and safeness in the world, capability to discover the environment and be involved effectively with other people (20). Securely attached adolescents usually react positively to the induction of positive affection provided by their fathers, such as protecting them from danger and trouble, or caring about them (7,44). The ability of adolescents to experience feelings of security from the fathers will subsequently serve as a secure base and a safe haven which can defend against the development of depressive symptoms in adolescents. It is conceivable that adolescents who internalize a representation of their fathers as comforting and available when needed tend to demonstrate positive emotions and probably will have less tendency to engage in maladaptive attitudes. By the same token, a greater sense of security will allow adolescents to be inspired by the psychological support provided by their fathers, essentially shielding them against depressive symptoms.

On the contrary, anxious fearful attachment would elevate the risk for depressive symptoms in adolescents. The finding is consistent with earlier studies (19,46) which found that adolescents with anxious fearful attachment to their fathers were more likely to intensify the risk of depressive symptoms. Depressive symptoms emerge when adolescents continually attempt to re-establish attachment but are unable to do so due to disengagement or condemnation from fathers (14,19). This behavioural pattern is most pronounced among anxious fearful attached adolescents who perceive inconsistent attunement in their relationships with their fathers. Moreover, these adolescents may harbour negative thoughts and feelings toward their fathers, such as describing their fathers as unavailable when needed, feeling angry with their fathers for no apparent reason, often worrying that their fathers do not really love them, thinking that their fathers make them doubt themselves and avoiding getting too close to their fathers. Further, these adolescents may become obsessed with bidding for the father's attention and be less involved in exploratory behaviour that contributes to less autonomy and exploration; hence promoting later disappointment and difficulties. Overwhelming difficulties may lead adolescents to perceive themselves as a failure and subsequently increase their vulnerability to depressive symptoms (14).

Additionally, findings from the present study attempted to show that approachability attachment exerts a similar effect on depressive symptoms as secure attachment. Results from the current research augment prior literature (19,21) by demonstrating that the presence of approachability attachment in father-adolescent relationship could also contribute to fewer depressive symptoms in adolescents. The current study suggests that when fathers are positive, warm, and supportive, adolescents may feel better about the relationships with the father which, in turn may decrease severity of internalizing problems, specifically, depressive

symptoms.

Several findings that emerged from the present study on the indirect effects of automatic thoughts on the relationships of paternal attachment and NLE to depressive symptoms in adolescents warrant additional attention. A more detailed inspection of the present findings revealed that the structural relations of anxious fearful and responsiveness attachment to depressive symptoms, as well as NLE to depressive symptoms were indeed mediated by automatic thoughts. These findings are in accordance with results from past research (45-48) which signified that automatic thoughts served as the underlying cognition that acted as one of the vulnerable factors for depressive symptoms in adolescents. As such, negative schema can be interpreted as a contributory cause for the increase in the likelihood of the occurrence of depressive symptoms.

CONCLUSION

On the whole, findings from the study suggested direct connections between several attachment variables (i.e. secure, anxious fearful and approachability) to the development of depressive symptoms in Malaysian adolescents. Theoretically, experiences of adolescents with primary caregivers that lead to secure attachment contribute to the obstruction of the onset of depressive symptomatology (49). Findings from the present study are congruent with Bowlby's postulation (14,44) regarding the relationships between attachment and depressive symptoms. Adolescents who reported perceiving their fathers as available when needed, and feeling loved as well as comfortable and close to their fathers tended to experience fewer depressive symptoms. A sense of security and approachability are formed when adolescents have confidence in their fathers' accessibility. In contrast, anxious fearful attachment acted as a risk factor that elevated symptoms of depression in adolescents. Depressive symptoms may be produced by unavailability of fathers in time of need or due to unpredictable and unresponsive attachment relationships.

Automatic thoughts on the other hand emerged as a cognitive mechanism that triggered the development of depressive symptoms through three indirect pathways from: 1) responsiveness attachment to depressive symptoms, 2) anxious fearful attachment to depressive symptoms and 3) NLE to depressive symptoms. Findings of the present study supported the mediating role of automatic thoughts in the development of depressive symptoms. Specifically, negative automatic thoughts was associated with adolescents' depressive symptoms in response to an emotional bonding with fathers that is characterized by anxious fearful and less responsiveness attachments as well as having experienced frequent NLE. Thus, the occurrence of depressive symptoms in adolescents involved various factors, including interpersonal (i.e., attachments with fathers), intrapersonal (i.e., negative life events) and cognitive (i.e., automatic thoughts) factors. Findings from the present study clearly advance existing literature by providing a better framework for understanding the etiology of depressive symptoms in adolescents. Educators, practitioners and those working with or for adolescents may find information from the present study useful for designing various prevention and intervention programs related to adolescents in order to promote optimal attachment relationships and minimize depressive cognitions in them.

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