Investigating the Moderating and Mediating Effects of Dysfunctional Attitudes and Self-Esteem on the Relationship between Social Support and Depression among Late Adolescents in Klang Valley Malaysia: A Moderated Mediation Model

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***Abstract*—**Seeing that the interdependence between adolescent depression and impairments in psychosocial functioning is conspicuous and evident, scrutiny on social support and cognition is a sine qua non of stimulating the psychological well-being amongst adolescents, expressly those in the stage of late adolescence who are discerned at higher risk of getting depressed. Hence, the moderated mediation model in the present investigation has been instigated to appraise the moderating and mediating effects of dysfunctional attitudes and self-esteem on the one-way relationship between social support and depression in late adolescence. Prior to this inspection, a pilot test has already been orchestrated to examine and ensure satisfactory psychometric properties of the assessment tool employed. A set of questionnaire encompassing self-report *Interpersonal Support Evaluation List*, *Dysfunctional Attitudes Scale*, *Rosenberg's Self-Esteem Scale* and *Beck Depression Inventory* were manoeuvred in a sample of 522 late adolescents taken from two local secondary schools and a university in Klang Valley, Malaysia. By way of implementing a series of multivariate analyses, the study divulged that self-esteem has noteworthily played its role of moderating the predictive relationship between social support and depression which mediated by dysfunctional attitudes in the samples, whereas the moderating effect of dysfunctional attitudes on the relationship among social support, self-esteem and depression has been insignificant, showing that dysfunctional attitudes is a remarkably consistent mediator in the one-way relationship between social support and depression moderated by self-esteem. Following the research findings, discussion has been carried out to elucidate the phenomenon.

***Keywords*—**Depression, Social Support, Self-Esteem, Late Adolescents, Dysfunctional Attitudes.

I. Introduction

HEEDING the call for boosting mental and emotional well-being amongst adolescents due to the increasing number of adolescents with psychosocial problems while development in economics and physical health have been growing swiftly in society [1], scrutiny in factors that influence adolescent depression as well as its process could be of enormous significance. As long been known, social support has been a critical component that influences psychological well-being, especially in adolescence which requires high adjustment and adaptation in terms of biology, cognition, emotion as well as social in the transition process from childhood towards adulthood. According to Major, Cooper, Zubek, Cozzarelli and Richards [2], social support is conceptualized as a source reflecting the extent to which a person's experience is stressful and allows change of situation by altering the person's interpretation and emotional reaction towards well-being. Most of the time, social support has been contemplated as an important factor contributing to mental health.

Gradually, psychological well-being becomes more vital following the enhancement of life quality. In Malaysia, National Policy on Mental Health defines mental health as capacity of individual or a group of human being and interaction among each of them in promoting subjective well-being as well as optimal functioning, together with the utilization of cognitive and emotional abilities and positive relationship to achieve individual's or group's goals for the benefit together [3]. In this case, depression, which is seen as one of the most common mental disorders in community [4] has threatened the goal towards achieving a healthy community in Malaysia, exclusively in late adolescence age ranging from 17 years to 23 years who were at risk of getting depression [5]. The number of depressed adolescence has significantly been increasing from early adolescence to late adolescence [6]. Ergo, it is of immense momentousness to study the issue pertaining to depression in late adolescence.

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Corresponding to Hilsman and Garber [7], the notion of cognition as the cause factor to evoking and maintaining depression is still on the way in searching its answer through research or study due to inconsistency of the existing research findings. Amongst cognitive models of depression, model developed by Aaron Beck is the most influential [8] in which it emphasizes cognitive perspective in developing individual depression, whereas Cohen and Syme [9] focus on the contribution of social support in governing individual health either cognitively or physically.

Besides the gravity of social support and cognition of being contributing factors to shaping individual depression, self-esteem, as part of the major developmental issues faced by adolescence [10], has been critical factor to affecting one's psychological well-being. According to Bednar, Wells and Petersen [11], high self-esteem is correlated with low psychological distress, and Solomon [12] mentioned that high self-esteem is able to reduce the tendency of acting defensively as well as cognitive distortion. However, social interaction or interpersonal learning is viewed as source and comprehension for development of self-esteem and in turn to determine individual's psychological functioning.

Given this, depression in late adolescence is in need to be studied and its contributing factors comprising social support, cognition which represented by dysfunctional attitudes in this study, and self-esteem are relevant to be investigated in this phenomenon in Malaysia context. As such, relationship among all these variables could be concluded in moderating and mediating effects whereby dysfunctional attitudes and self-esteem play the roles of moderator and mediator in the relationship between social support and depression in late adolescence. This allows clearer relationship among these variables and examining the roles of dysfunctional attitudes as well as self-esteem for the importance of psychological treatment or counseling purpose.

II. Concept and Theory

A. Social Support

According to Wills [13], social support refers to the function of social relation in which social support is meant to help one to cope with a situation. It plays a large part to influencing one's well-being with the six different functions of social support which encompass esteem or emotional support, status support, informational support, instrumental support, social companionship as well as motivational support [13].

However, operationally defined, social support is help offered by others such as family, peers or significant others from four aspects comprising belonging support, appraisal support, esteem support and material support according to the Interpersonal Support Evaluation List (ISEL) developed by Cohen, Mermelstein, Kamarck and Hoberman [14]. Specifically, belonging support refers to doing activities together whereas appraisal support is the help offered in the form of listening to a person's problems, and esteem support defined as positive comparison in one's ability of accomplishing tasks, social competency or life satisfaction, while material support means help offered in the instrumental form such as lending money, offering transportation and accommodation [15].

B. Dysfunctional Attitudes

Looking from the cognitive perspective, depression is the consequence of negative thoughts. These negative thoughts or being called dysfunctional attitudes, is defined as a set of beliefs which demonstrate rigid and perfectionistic criteria on the evaluation of personal performance and self value [16]. The characteristics of dysfunctional attitudes, as described by Beck [17], comprise the concepts of arbitrary inference, selective abstraction, overgeneralization, magnification or minimization as well as inexact labeling.

Dysfunctional attitudes is operationally defined from three aspects according to Weissman and Beck [18], they are vulnerability referring to the pessimistic attitudes that tend to exaggerate negative consequences of an action, whereas success perfectionism means the attitudes with the perfectionistic criteria that could not bear with any mistakes done in one's actions, and, social approval is defined as dependency on others' approval for a satisfactory life of one self.

C. Self-Esteem

As defined by Brown and Marshall [19], self-esteem global refers to the way of one evaluating him/herself in general. In more detailed definition, according to Braden [20], self-esteem has two interrelated aspects which entails a sense of personal efficacy and a sense of personal worth that integrates self-confidence and self-respect to be the conviction that one competent to live and worthy of living.

Operationally, according to Rosenberg [21], positive evaluation towards personal quality of oneself such as aptitudes and abilities in general defines the concept of self-esteem. Hence, it consists of two components of self-confidence and self-deprecation in describing self-perception to the personal quality.

D. Depression

Given that depression is an unusual behavior, it involves sadness in emotion, loss of interest in the activities that usually enjoyed in the past, feeling guilty, loss of eating appetite, having sleep disturbance, and so on [22]. Consistently, Beck [23] defined depression as a syndrome consists of negative thoughts, change of emotion and behavior into dysfunctional or destructive ones. Hence, it entails psychological and somatic aspects operationally according to Beck Depression Inventory.

E. Theoretical Framework

To be the fundamental base for explaining the present study, Beck's Cognitive Theory was employed to elucidate the relationship among social support, dysfunctional attitudes and depression in late adolescence. According to Aaron Beck [23], one's emotion and behavior are actually influenced by the perception of him/herself, and not the reality itself. This was as well explained by Judith Beck [24] as follows:

> "*so the way people feel is associated with the way in which they interpret and think about a situation. The situation itself does*

not directly determine how they feel; their emotional response is mediated by their perception of the situation" [24] (pp. 14).

According to Beck [24], cognition is viewed as a factor intervening activating stimuli and individual emotion.

Thus, manifestations of negative emotions and abnormal behaviors such as feeling sad, guilty and loss of interest in activities are due to the specific negative cognitive pattern or negative cognitive triad which includes negative thinking towards self, world as well as their future [25]. And, this cognitive triad is to be activated by environmental stimuli to evoke depression [26], especially those vulnerable to negative emotion with high dysfunctional attitudes and low self-esteem.

As well, the present study was planned using Social Support Model developed by Cohen and Wills [27] as a theoretical base in which this model emphasizes moderation mechanism in the relationship between negative life events and individual well-being. The present study, however, has modified the moderating role of social support as posited by the Cohen and Wills Model of Social Support into the causal factor to depression, with the literature support by Cohen and Syme [9] as well as Kessler and McLeod [28].

Taken together, integration of the aforementioned theories has been accounted for in establishing the present model of study which was supported by the view of Sacco and Vaughan [29] whereby social support is conceptualized as a factor correlated to depression and at the same time cognitive component plays a role in perceiving the social or environmental events.

III. Methodology

A. Assessment

Interpersonal Support Evaluation List (ISEL)

ISEL is a 40-item self-report questionnaire with 4-point likert scale developed by Cohen, Mermelstein, Kamarck and Hoberman [14] to assess the perceived social support that consists of four factors of support including belonging, esteem, appraisal and material. Subjects were required to respond to each item of the ISEL by choosing one of the four options ranging from 'definitely true', 'probably true', 'probably false' to 'definitely false' which described their own the best. Higher scores of ISEL indicate higher perceived social support.

Dysfunctional Attitudes Scale (DAS)

Weissman and Beck [18] has developed DAS for the purpose of assessing a set of rigid and perfectionistic beliefs of respondents in terms of vulnerability, success-perfectionism and social approval. Originally, there were total 40 items in DAS with 6-point likert self-report format. Due to consideration for making all employed questionnaires in the present study in consistent format, DAS has been modified to be 4-point likert scaled ranging from 'totally agree' to 'totally disagree'. The higher score of DAS, the higher dysfunctional attitudes of an individual.

Rosenberg's Self-Esteem Scale (RSES)

RSES that consisted of 10 items with 4-point likert scale has been developed to assess respondent's self-confidence and self-deprecation. Respondent with higher score of RSES was regarded as higher in self-esteem.

Beck Depression Inventory (BDI)

The originally 21-item BDI with 4 options for each item has been developed to assess severity of depression symptoms from the aspects of psychology and somatic. To be culturally fit in Malaysia context, the last item has been omitted from the original BDI for the present study. Higher score of BDI indicates more severe of the depressive symptoms one has.

Similarly important to any research, the validity and reliability of findings are essential to confidently discussing the findings as well as making conclusion. These were carried out by a series of psychometric properties' investigation. In this case, confirmatory factor analysis was employed to enquire into the structural validity of findings for the present study assessed by the four abovementioned questionnaires. In pilot study, each of these questionnaires was investigated its structural validity of findings followed by the improvement whereby insignificant items were omitted from the questionnaire for time 2 study.

In light of the purpose of inspecting the psychometric properties of the questionnaires, data has been amassed from a total of 83 late adolescent subjects (30 males and 53 females) at two local secondary schools in Klang Valley for pilot investigation purpose, as exhibited in Table 1. The internal consistencies of the subscales of questionnaires are moderately high ranging from 0.648 to 0.874 in alpha cronbach's coefficients, divulging the moderately high reliability of findings.

Table.1 Numbers of Respondents by Gender, School and Age for Pilot Survey

	Gender		Total
	Male	Female	
School			
A	24	38	**62**
B	6	15	**21**
Age			
17 years	0	2	**2**
18 years	6	17	**23**
19 years	24	34	**58**
Total	**30**	**53**	**83**

After performing a series of psychometric properties testing, the modification on the number of items and subscales for each questionnaire is displayed in Table 2.

Table. 2 Total Item and Subscale for each Questionnaire

No	*Assessment*	*Number of Items*		*Number of Subscales*	
		Before Change	*After Change*	*Before Change*	*After Change*
1	Interpersonal Support Evaluation List (ISEL)	40	30	4	3
2	Dysfunctional Attitudes Scale (DAS)	40	22	3	2
3	Rosenberg's Self-Esteem Scale (RSES)	10	9	2	2
4	Beck Depression Inventory (BDI)	20	19	2	2
Total Item/ Subscale		**110**	**80**	**11**	**9**

B. Subject

In the current fact-finding, a total of 522 form six students and foundation program students with age ranging from 17 years to 23 years were taken from local secondary schools and a university in Klang Valley respectively. Of the entire number of subjects, 51.7% were female as well as 78.6% were in ages between 18 and 19 years, as presented in Table 3.

Table. 3 Numbers and Percentages of Subjects by Gender, Age and Ethnic

Factor	Gender		Total	(Percentage in Total)
	Male	Female		
Age (Years)				
17	41	32	73	(14.0%)
18	130	160	290	(55.6%)
19	53	67	120	(23.0%)
20	21	9	30	(5.7%)
21	6	1	7	(1.3%)
22	1	0	1	(0.2%)
23	0	1	1	(0.2%)
Total	252	270	522	(100.0%)
Ethnic				
Malay	4	13	17	(3.2%)
Chinese	204	214	418	(80.1%)
Indian	41	42	83	(15.9%)
Others	3	1	4	(0.8%)
Total	252	270	522	(100.0%)

As depicted in Table 4, subjects reported moderately high psychological well-being in which majority of the subjects reported high perceived social support and self-esteem, 88.5% and 65.3% respectively. Steadily uniform to this situation, there were only 29.9% and 4.2% of the total number of subjects commentate on high dysfunctional attitudes and depression separately.

Table. 4 Percentages of Social Support, Dysfunctional Attitudes, Self-Esteem and Depression by Levels

Level	Social Support	Dysfunctional Attitudes	Self-Esteem	Depression
Low	11.5%	70.1%	34.7%	95.8%
High	88.5%	29.9%	65.3%	4.2%

Notes. N = 522

C. Procedure

Subsequent to coming by permissions from authorities and schools' principals, the subjects were assessed in their classrooms accordingly. In each class, subjects have been distributed questionnaire sets and given 40 minutes to answer the questionnaire after giving a briefing on the purpose of study by researcher. The subjects have politely been advised to answer the questionnaire without discussion with others as the responses to each item of questionnaire should describe the individual respondents at best.

Data accumulation was followed by the analyses of data collected after keying in all the responses. The computer softwares "*Statistical Package for the Social Sciences*" and "*Analysis of Moment Structures*" were employed to carry out the statistical analyses for research findings on the moderated mediation model.

IV. Finding

Mean dissimilarities in subjects' depression by social support, dysfunctional attitudes and self-esteem have apparently been presented in Table 5. At the significance level of 0.001, high and low social supports have significantly distinguished each other in contributing to the mean of depression, $t(520) = 6.169$, $p<0.001$, with which high social support affects appreciably lower mean of depression. Akin to this, subjects' high self-esteem has been discovered to be markedly divergent from low esteem in determining lower depression mean, $t(520) = 11.276$, $p<0.001$. As contradict to social support and self-esteem, high dysfunctional attitudes of subjects which is significantly disparate to low dysfunctional attitudes with $t(520) = -7.159$, $p<0.001$, has affected higher depression mean in the same direction. These results, hence, convey that those with low social support or self-esteem, or high dysfunctional attitudes could be experiencing

significantly higher depression, whereby in-depth scrutiny in the relationships amongst the said variables should be directed.

Table. 5 Mean Differences in depression by Low and High Levels of Social Support, Dysfunctional Attitudes and Self-Esteem

Level of IV	n	Mean	SD	t
Low Support	60	36.633	10.691	6.169***
High Support	462	29.294	8.375	
Low Dysfunctional	366	28.385	7.997	-7.159***
High Dysfunctional	156	34.250	9.782	
Low Esteem	181	35.591	9.524	11.276***
High Esteem	341	27.243	7.147	

Notes.

1. ***p<0.001. N = 522.
2. IV = Independent Variable; SD = Standard Deviation; t = t Value.

Given that the present exploration has hypothesized the moderating role of dysfunctional attitudes in the predictive relationship between social support and depression that is mediated by self-esteem in late adolescence, a moderated mediation model investigation has been conducted by using multiple regression.

Table. 6 Means, Standard Deviations and Intercorrelations of Constructs

	SS	Dys	PK	Depression
M	90.19	50.57	25.31	30.14
SD	12.27	9.45	4.70	8.97
Correlation				
SS	-	-.431**	.472**	-.409**
Dys	-	-	-.426**	.410**
SES	-	-	-	-.527**
Depression	-	-	-	-

Note.

1. **p<0.01. N=522.
2. M = Mean; SD = Standard Deviation; SS = Social Support; Dys = Dysfunctional Attitudes; SES = Self-Esteem.

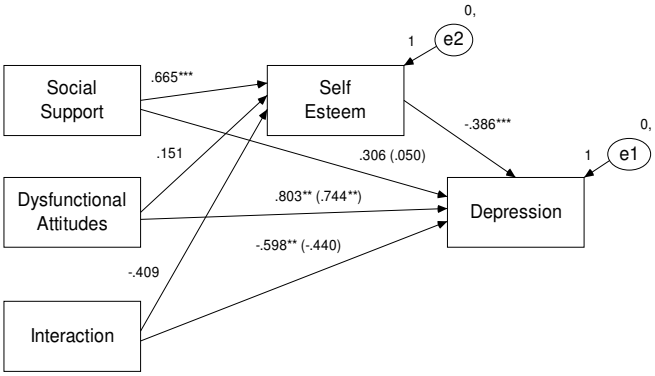
As displayed in Table 7, depression is remarkably predictive of self-esteem, B = -0.737, p<0.001, as well as the interaction between social support and dysfunctional attitudes as moderator has significantly predicted depression after the entering of self-esteem as a mediator in this model, in which it has been changed from B = -0.005, p>0.05 to B = -0.737, p<0.001. Nevertheless, the abovementioned interaction, with B = -0.002, p>0.05, could not predict self-esteem which is the mediator in the model. For this reason, the null hypothesis was accepted and revealed that the predictive relationship between social support and depression which mediated by self-esteem, was not moderated by dysfunctional attitudes. In other words, the model involving the predictive relationship between social support and depression which mediated by self-esteem can be applicable or pertinent to those with either high or low in dysfunctional attitudes. This moderated mediation model was demonstrated in Figure 1 as well.

Table. 7 Moderated Mediation Test: Moderating Role of Dysfunctional Attitudes in the Relationship among Social Support, Self-Esteem and Depression

	y: Depression			y: Self-Esteem			y: Depression		
	B	t		B	t		B	t	
Intercept	12.550	.971		8.957	1.367		19.149	1.593	
SS	.036	.267		.255	3.687	***	.224	1.748	
Dys	.706	2.959	**	.075	.621		.762	3.435	**
SS x Dys	-.005	-1.843		-.002	-1.768		-.006	-2.688	**
SES							-.737	-9.156	***

Note.

1. ***p<0.001; **p<0.01. N=522.
2. B = Unstandardized Coefficient; t = t Value; SS = Social Support; Dys = Dysfunctional Attitudes; SES = Self-Esteem; y = Dependent Variable.



Notes. ***p<0.001; **p<0.01. Standardized Beta coefficients before the entering of Self-Esteem as the mediator in the model were shown in parentheses.

Fig. 1 Path Diagram for Moderated Mediation Model with Dysfunctional Attitudes as Moderator and Self-Esteem as Mediator in the Relationship between Social Support and Depression

In turn, the self-esteem has been studied its moderating role in the predictive relationship between social support and depression which mediated by dysfunctional attitudes. By using multiple regression, Table 8 shows that depression has meaningfully been predicted by dysfunctional attitudes, B = 0.186, p<0.001, while the interaction between social support and self-esteem as a moderator has been an appreciable predictor to dysfunctional attitudes as well, B = -0.015, p<0.01. With the entering of dysfunctional attitudes as a mediator in the model, the interaction between social support and self-esteem has once again demonstrated significant Beta coefficient, that is B = 0.011, p<0.05 compared to the previous B = 0.008, p>0.05. Thus, hypothesis was accepted that self-esteem played a striking moderating role in the predictive relationship between social support and depression that mediated by dysfunctional attitudes. Subsequently, this finding was further investigated, by implementing multiple regression as well, to test the applicability of this moderated mediation model to those with high and low self-esteem.

Table. 8 Moderated Mediation Test: Moderating Role of Self-Esteem in the Relationship among Social Support, Dysfunctional Attitudes and Depression

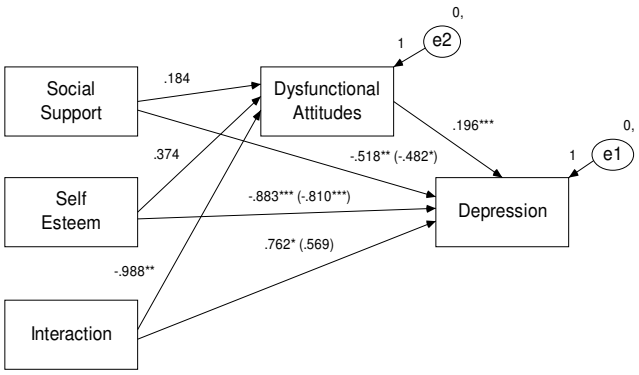
	y: Depression			y: Dysfunctional Attitudes			y: Depression		
	B	t		B	t		B	t	
Intercept	82.325	7.507		52.990	4.417		72.479	6.620	
SS	-.352	-2.834	*	.141	1.040		-.378	-3.104	**
SES	-1.546	-3.511	***	.753	1.563		-1.686	-3.897	***
SS x SES	.008	.569		-.015	-2.801	**	.011	2.272	*
Dys							.186	4.720	***

Note.

1. ***p<0.001; **p<0.01; *p<0.05. N=522.
2. B = Unstandardized Coefficient; t = t Value; SS = Social Support; Dys = Dysfunctional Attitudes; SES = Self-Esteem; y = Dependent Variable.

Table 9 has shown that the interaction between social support and low self-esteem has not been a conspicuous predictor to dysfunctional, B = -0.028, p>0.05, whereas social support interacted with high self-esteem has significantly predicted dysfunctional attitudes with B = -0.031, p<0.05.

Moreover, to those with high self-esteem, social support has contributed 63.0% of the total variance of dysfunctional attitudes which is reported higher compared to that of low self-esteem subjects, 34.7%. This has been given meaning that social support is more strongly correlated with dysfunctional attitudes for those having higher self-esteem. Therefore, the result could be interpreted in such a way that the model of predictive relationship between social support and depression mediated by dysfunctional attitudes is applicable for those having high self-esteem instead of those with low self-esteem. This model is demonstrated in Figure 2 as well.



Notes. ***p<0.001; **p<0.01; *p<0.05. Standard Beta Coefficients before the entering of Dysfunctional Attitudes as mediator in the model were shown in parentheses.

Fig. 2 Path Diagram for Moderated Mediation Model with Self-Esteem as Moderator and Dysfunctional Attitudes as Mediator in the Relationship between Social Support and Depression

Table. 9 Moderation Test: Interaction between Social Support and Self-Esteem towards Dysfunctional Attitudes by the Level of Self-Esteem

	y: Dysfunctional Attitudes	R^2	B	SE	t		Sig.
General	Block 1	.249					
	Intercept		85.691	2.777	30.852		.000
	Social Support		-.228	.033	-6.868	***	.000
	Self-Esteem		-.575	.089	-6.628	***	.000
	Block 2	.261					
	Intercept		52.986	11.996	4.417		.000
	Social Support		.141	.136	1.040		.299
	Self-Esteem		.753	.482	1.563		.119
	Interaction (SS x SES)		-.015	.005	-2.801	**	.005
Low Self-Esteem	Block 1	.118					
	Intercept		77.461	5.403	14.336		.000
	Social Support		-.216	.051	-4.261	***	.000
	Self-Esteem		-.224	.240	.935		.351
	Block 2	.134					
	Intercept		33.709	24.556	1.373		.172
	Social Support		.347	.312	1.112		.268
	Self-Esteem		1.995	1.238	1.611		.109
	Interaction (SS x SES)		-.028	.016	-1.826		.070
High Self-Esteem	Block 1	.189					
	Intercept		91.117	4.874	18.694		.000
	Social Support		-.237	.044	-5.450	***	.000
	Self-Esteem		-.736	.160	-4.608	***	.000
	Block 2	.202					
	Intercept		8.800	36.388	.242		.809
	Social Support		.630	.382	1.647		.100
	Self-Esteem		2.197	1.295	1.697		.091
	Interaction (SS x SES)		-.031	.013	-2.283	*	.023

Note.

1. ***p<0.001; **p<0.01; *p<0.05. N=522.
2. R^2 = r Square; B = Unstandardized Beta coefficient; SE = Standard Error; t = t Value; Sig. = Level of Significance; y = Dependent Variable; SS = Social Support; SES = Self-Esteem.

Commensurate with the momentousness of examining effect size and power of the research finding, Cohen [30] as well as Miles and Shevlin [31] have articulated that effect size and power need to be tested in order to identify the power or probability of the result in yielding powerful enough conclusion which could be generalized among the samples, with which at least 80% prediction power is recommended. In accordance with this notion, divulged by the regression model and its $R^2 = 0.343$, the effect size for the current investigation has methodically been calculated, as presented below:

$$ES = \frac{R^2}{1 - R^2} = \frac{0.343}{1 - 0.343}$$

$$ES = \frac{0.343}{0.657} = 0.522$$

With reference to Cohen [30] [31], values of 0.35 and above are categorized as large effect size. In this case, 0.522 has apparently demonstrated its large effect size of research finding where 38 subjects are actually enough to attain 80% prediction power [30]. As a consequence, the discovery of this study that employs 522 respondents can convincingly be generalized in the said community.

Throughout a series of statistical testing, a conclusion could be made concerning the moderating and mediating roles of dysfunctional attitudes and self-esteem in the relationship between social support and depression in late adolescence, as depicted in Figure 3. More specifically, both dysfunctional attitudes and self-esteem have been playing mediating role in the predictive relationship between social support and depression, which has formed the indirect relationship between social support and depression. In spite of the significant moderating role played by self-esteem at the same time, dysfunctional attitudes has been testified as merely mediator in this relationship without being dual-role in the model of research.

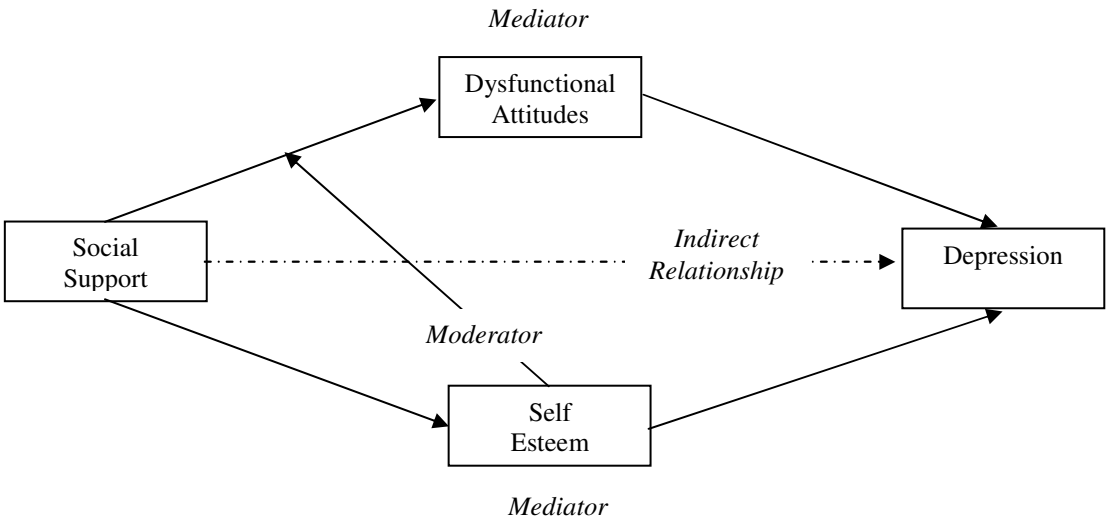


Fig. 3 Research Model developed from Findings

V. Discussion and Conclusion

According to Wu and Zumbo [32], mediation and moderation are theories in developing and understanding a causal relationship in which mediator is a third variable that alters the strength of causality in order to establish a more comprehensive relationship between independent and dependent variables. As well, researchers for other studies have tried making their efforts to articulate the differences between mediation and moderation [33] [32]. More specifically, Baron and Kenny [33] as well as Muller, Judd and Yzerbyt [34] have shown that combination of mediation and moderation in a research model yielded more in-depth understanding in the relationship between predictor and criterion. Such a model has been recommended for studies of more complex relationship among variables.

The present inspection has unambiguously expressed findings that self-esteem has meaningfully been moderating the model of predictive relationship between social support and depression mediated by dysfunctional attitudes among late adolescents, whereas dysfunctional attitudes has been testified as merely a mediator in the model. Those late adolescents with high self-esteem have been described as more appropriate group in discussing this phenomenon that involves dysfunctional attitudes as mediator. This has been an addition to the Cognitive Model of Depression by Beck [35] which contains the method of moderated mediation developed by Baron and Kenny [33].

Undoubtedly, according to the Beck's Cognitive Model of Depression [35], dysfunctional attitudes is a set of negative cognitive schema that provides mediating effect in an individual's life events and depressive symptoms. The present study has precisely supported this statement albeit some research showed that dysfunctional attitudes played a moderating role instead of mediator in between social support and depression, such as study from Wise and Barnes [36] conducted on 49 normal college students.

Furthermore, Beck [37] emphasized that stress and negative life experience is actually not sufficient to evoking depression of an individual. Yet, negative cognitive schema which elicited by negative life events has been accounted for in developing depression.

Notwithstanding to the existing research that showed the significant mediating effect yielded by dysfunctional attitudes, this model could only be generalized on those with high self-esteem. This occurrence may be due to the explanation whereby people who have high global self-esteem may not as well be possessing high specific self-esteem that could be fluctuated at any given time [21]. Its instability may cause higher vulnerability to depression, hence, dysfunctional attitudes has been viewed more appropriately describing this group of individuals, especially in late adolescence who are facing the changes of social relationships [38] may have higher unstable self which could contribute to the vulnerability in cognition. In other words, individual with high yet unstable

self-esteem may need higher social approval which is viewed as part of dysfunctional attitudes.

Provided that self-esteem is somehow correlated with dysfunctional attitudes, the findings of Luxton, Ingram and Wenzlaff [39] showed that individual with higher dysfunctional attitudes has been demonstrating higher tendency in possessing unstable self-esteem. Hence, individuals with high self-esteem may also be holding high dysfunctional attitudes which has considerably been proven its prediction to developing depressive symptoms.

According to Neukrug [40], individuals with high self-esteem, may be the consequence of inferior feeling towards themselves, and resulted by the compensation through achieving planned goals. This given situation is called *cognitive dissonance* which unconsciously causes stress on an individual [41], and consequently weakens the strength of facing challenges as well as heightening dysfunctional attitudes resulted by cognitive dissonance [42].

Generally speaking, individuals with high self-esteem are usually characterized by high self-confidence, as it has operationally been one of the components in the assessment *Rosenberg's Self-Esteem Scale*. Despite the need of being high self-esteemed for psychological well-being, high self-esteem individuals may expect higher social support would be obtained from family, peers and significant others. According to Baron and Byrne [41], humans tend to expect positive events and view negative events as something supposed not to happen on them. By this way, high self-esteem individuals may even experience higher negative impact on their emotional well-being resulted from negative events which involves their existing expectations.

The aforementioned explanation is even more applicable to late adolescents whose cognition has largely been developed throughout human developmental process, compared to that of children and early adolescents [43]. Being able to view issues from different perspectives, late adolescents may be more confident in their cognitive ability, which may in turn believe in their dysfunctional attitudes.

Another explanation could be made is that high self-esteem individuals tend to neglect any negative evaluations given by others on themselves in order to maintain their high self-esteem [44]. At the same time, this process is indeed making the individuals unconsciously feel uneasy, because, according to Leary [44], individual self-esteem has not only been influenced by interpersonal events, but as well intrapersonal process by automatically processing the social issues through the existing cognitive schema. Hence, those with high self-esteem may be more prone to connect to dysfunctional attitudes, and this interprets the relevance of the present research model to those late adolescents with high self-esteem.

The present inspection has come with its implication in which examining the roles of cognitive and self components in a model is of necessity to the benefit of late adolescents' psychological well-being where psychological treatment as well as programs could absorb the findings as important points in them for more effective outcomes.

Opposite to what may commonly be expected, high self-esteem individuals in late adolescence have to be paid heed to their emotional well-being too as their psychological states are not only explained by social support, but dysfunctional attitudes as well.

By the momentousness of social support on affecting individual psychological well-being, the findings of the present study has greatly agreed with the *person-centered therapy*'s view in which *positive regards*, interpreted as social support in this study, has been essential and vital component to promoting emotional well-being of individuals.

Nonetheless, the present exploration that conducted in cross-sectional method was being unable to predict future depressive symptoms of late adolescents. Longitudinal study may be conducted in future in this case to further investigate the moderating and mediating effects of dysfunctional attitudes and self-esteem in explaining the prediction of social support to depression among late adolescents.

Study on clinical samples of adolescents may as well be obligatory to make a pivotal comparison to the normal samples. Such a comparison may be helpful to demonstrate the differences appeared between these two samples, which will definitely contribute to more in-depth understanding of the psychological states of depressed adolescents on the variables tested.

Hopefully, these findings would contribute to the society in some way which has been mentioned by National Mental Health Policy 1997 [3] in Malaysia to provide a basis in developing strategies and direction to those involved in any planning and implementation towards improving mental health, as well as to improve mental health services for population at risks of developing psychosocial problems.

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