

Body Image Coping Strategies as Mediator between Physical Appearance-Related Teasing and Body Esteem among Adolescents

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Abstract

This study was conducted to investigate the mediation effect of coping strategies in the relationship between physical appearance-related teasing and body esteem among adolescents. In total, 363 adolescents (179 males and 184 females) aged 16-year-old participated in the study. Physical Appearance-Related Teasing Scale – Revised, Body Esteem Scale for Adolescents and Adults, and Body Image Coping Strategies Inventory were used to collect quantitative data on respondents' experiences concerning physical appearance-related teasing, body esteem, and coping strategies about body image. Multiple regression analyses using bootstrapping procedures showed positive rational acceptance partially mediated the relationship between all physical appearance-related teasing dimensions (form of harassment, appearance-related teasing, and physical-related teasing) and body esteem – appearance and attribution, partially mediated the relationship between form of harassment and body esteem – weight, and fully mediated the relationship between appearance and physical-related teasing and body esteem – weight. Appearance fixing were also partially mediated the relationship between form of harassment and appearance-related teasing and body esteem – appearance and fully mediated the relationship between physical-related teasing and body esteem – appearance. Appearance fixing were found to partially mediate the relationship between all physical appearance-related teasing dimensions and body esteem – attribution. There is no mediation effects of appearance fixing in the relationship between all physical appearance-related teasing dimensions and body esteem – weight. Analyses also found that avoidance partially mediated the relationship between all physical appearance-related teasing dimensions and body esteem – appearance, and the relationship between both form of harassment and appearance-related teasing and body esteem – weight. Meanwhile, there is no mediation effects of avoidance in the relationship between physical-related teasing and body esteem – weight, and the relationship between all physical appearance-related teasing dimensions and body esteem – attribution. This information is useful for the planning of health programs as well as intervention and prevention programs to control and combat physical appearance-related teasing and body satisfaction problems among adolescents.

Keywords: *Body image, coping strategy, physical appearance-related teasing, body esteem, adolescents*

Introduction

Body image is a psychological concept referring to attitudes towards one's own body involving cognitive, perception, behaviour and affective dimensions [1]. Affective dimension is one of the focus of some studies and often conceptualized as body esteem [2]. Body esteem refers to self-evaluation of one's own body [2]. While referring body esteem, researchers often defines it as one's satisfaction or dissatisfaction with their own body and appearance [3]. Specifically, body esteem is one's self-evaluation of their general appearance, weight and beliefs about others' opinions on his/her appearance [4].

Body image is a very important issue during adolescence due to critical changes on physical, cognitive and social [5]. These changes influence the increasing of self-awareness on body and weight among both male and female adolescents [6]. Studies have found greater body

dissatisfaction among adolescents was high [7, 8]. Dissatisfaction on one's body or subjective unhappiness over some aspects of physical appearance becoming more serious.

Previous research indicates that individual's views of their bodies are multidimensional, including both observable (such as weight, size and sexual attractiveness) and nonobservable physical characteristics (such as health, strength and fitness) [9]. Self-evaluation might come from interpersonal relationship. A form of communication called "teasing" exists in the context of ongoing interactions between perpetrator and recipient of teasing [10]. Study found that social teasing regarding physical characteristics during childhood or adolescence is a factor that influencing the increasing of body dissatisfaction [11].

Teasing is form of personal communication, which is the acts was directed by the perpetrators to the victim [12]. Teasing is a form of intentionally provocative and accompanied by components of teasing [10] including aggressive, humor, ambiguity [12] and identity confrontation [13]. This provocation also accompanied by comments on somethings related to the target of teasing [10] such as characteristics of physical appearance. Any provocation is not considered as a form of teasing in the absence of these components. Teasing is a very complex experiences depending on whether the recipient interpret the messages as hurtful [12]. The interpretation will affect whether the victim describes the teasing as prosocial or antisocial [14]. When the target interpret the messages as hurtful, they may experience unpleasant feelings like anger, shame, anxious, loneliness and so forth [15]. Conversely, if the messages interpreted as good, this experience may create, maintain and improve interpersonal relationship and help resolve interpersonal conflicts [10].

Adolescence is a period where individuals more likely to experience hurtful teasing [12, 16]. Physical appearance teasing is the most frequent topic among adolescents [17] especially in school setting [18]. This is because appearance is the main focus of teasing as early as childhood [12]. Physical appearance teasing during childhood has been shown to have a strong impact on affective-related body during adolescence and adulthood [19]. Physical appearance teasing is hurtful experience and receiving more attention because of its potential to produce negative emotional reactions and adverse effects on recipients' psychological [14] and emotional well-being [20]. Therefore, physical appearance teasing influence the presence of negative emotions or feelings regarding body and appearance that might become more serious.

Previous studies show that physical appearance teasing associated with low level self-esteem among adolescents [14, 15, 21-31]. Study found a high frequency of body-related comments associated with more negative effects [22]. It is likely that the more an individual is given such negative feedback, the more it is internalized and viewed as being even more negative. However, these studies do not explain the link between physical appearance teasing with affective-related body and appearance called body esteem.

Body esteem is more important during adolescence as males tended to evaluate their weight and appearance higher than did females, while females tended to rate appearance and weight as more important than did males [32]. However, body esteem was decreasing during adolescence [33]. There is a few studies indicates that physical appearance-related teasing and body-related comments have an impact on body-related affective. It has been found that peer victimization associated with low weight esteem for girls and appearance teasing associated with boys' negative beliefs about others opinions of their appearance [34]. Commentary among adolescents regarding one's body and appearance also influence their satisfaction on appearance [35]. Also, study stated that physical appearance teasing consistently associated with low body satisfaction [24, 26]. Disturbances on body esteem which is influenced by commentary or teasing maybe because of negative self-evaluation in the contexts of general appearance and weight [2]. But, previous studies do not explain another dimensions that might influence the relationship between physical appearance-related teasing and body esteem. Researchers did not examine the mediation effects that might explain the direct effects of physical appearance-related teasing on body esteem. Coping strategies is an intervention dimension that more important to understand the link between the two

variables. Distressing thoughts, feelings and situations related to body image can be resolved with the presence of coping strategies [36, 37].

Individuals with body image distress will use multiple strategies to overcome the threatening situations. Body image coping strategies addressed through cognitive and behavioral [36, 38, 39]. In terms of cognitive, certain situational cues or contextual events (including internal events) activating information processes about physical appearance and one's self-evaluation of physical appearance influenced by schemas [40]. Therefore, those who put more importance on self-schemas will pay more attention on appearance and processing relevant informations about their appearance. Precipitating events may involve body exposure, mirror exposure, social feedback, weighing, wearing certain clothing, exercising, mood states or changes in appearance [40]. Beside that, internal dialogues (involving thoughts, inferences, interpretations and conclusions regarding appearance) among individuals with problematic body image attitudes and self-schemas are habits, faulty and dysphoric. Thought processes might reflect errors or deviations, such as dichotomous thinking, emotional reasoning, biased social comparisons, overgeneralization, overpersonalization, exaggerate perceived flaws/defects and minimize assets [40].

When managing and cope with distressing thoughts and emotions regarding body image, whether expectations of actual, one engage in some actions and reactions [40]. These maybe involving cognitive or behavior strategies to accommodate or adapt the perceived events. Individual may create and use cognitive and behavioral strategies to adjust the disturbing thoughts, feelings and situations namely the body image-related threats or challenges [37]. Meanwhile, adjustment reactions include behavioural concealment and avoidance, appearance checking or fixing, gaining social support, and situation balancing strategies [40]. These reactions are intended to maintain the attitudes towards body image through negative reinforcement to allow someone to escape, reduce or control the distressing body image temporarily [36, 41].

Based on the explanations above, there might be a potential explanation of coping strategies in the relationship between physical appearance-related teasing and body esteem. Therefore, there is a need to explore coping strategies as a mediator in the relationship between the variables. Thus, the current study aimed to examine the mediation effects of body image coping strategies between physical appearance-related teasing and body esteem.

Methodology

Participants

The respondents selected for this study enrolled in public (government) secondary schools during the 2016 academic year involving both male and female students. Based on Krejcie and Morgan's formula of determining sample size, the minimum calculated number of respondents that are valid for the study is at least 376 students [42]. Students aged 16 was selected by a systematic random sampling method. Three secondary schools around Kota Kinabalu (urban area) were selected and contacted by letters requesting students' participation. The survey was completed by students from these three schools, representing 97% of the total targeted sample. Nonresponse by students was due to school and class absenteeism. Thus, only 328 students were included for statistical analyses involving 147 (45%) male and 181 (55%) females, owing to the exclusion of students who did not complete at least one item in the questionnaire, especially the height and weight information. Specifically, overall students that involve was 100 (30.5%) students from School A, 140 (42.7%) students from School B and 88 (26.8%) students from School C.

Procedure

A permission to implement the study in school setting was obtained from the Ministry of Education and Sabah Education Department. Then, a list of the names of schools and contact information were obtained from the Sabah Education Department. Once the selection of school was made, the selected schools were invited to participate in the study. In another method of selecting respondents, researchers asked the schools to provide a list of names of Form Four students who can participate in the study (recommended by the school counselor). The lists of names from

selected schools were then combined with the order of alphabet (*a* to *z*), and participants were systematically selected from the list. During data collections, students were also informed that participation in the study was voluntary and all the data obtained will be used confidentially. Students were then asked to fill in the consent form and upon their agreement to participate in the study. The questionnaires took an average of 15 minutes to complete.

Weidmer's back-to-back translation method were used to translate the original scale (English) into target language (Malay) [43]. This method is largely adapted from Brislin's translation process approach [44]. In addition, this study has been through pilot study to test the feasibility and adequacy of the instrument, the problem of data collection strategy and the proposed study method [45].

Measurements

Physical Appearance-Related Teasing Scale. Physical Appearance-Related Teasing Scale – Revised (PARTS-R) [46] involving 14 items in total were used to measure the frequency of perceived physical appearance teasing experiences among school-age children (elementary and middle school students). It was a revised version from its original scale that is Physical Appearance-Related Teasing Scale [30] that measuring physical appearance teasing experiences during childhood and adolescence of young women with body image dysfunction. PARTS-R consist of three dimensions involving Form of Harasment (FH; 6 items), Appearance-Related Teasing (ART; 4 items), and Physical-Related Teasing (PRT; 4 items). Responses were scored based on 5 point Likert-type of scale from '1 (never) to 5 (always).' The highest score indicates high frequency of physical appearance teasing. A psychometric evaluations of PARTS-R, including item analysis, internal consistency reliability using Cronbach's alpha and convergent validity using Pearson's correlation, was first run on the data. Item-total correlation were first computed for 14 item of the PARTS-R. A minimum total criterion item-total correlations level of .30 was set for item inclusion in the subscale [47, 48]. All 14 items met this criterion with item-total correlation coefficients between .36 and .67. The standardized Cronbach's alpha was .82 for FH, .67 for ART and .64 for PRT. Convergent validity confirmed through significantly positive correlations between subscales (.63 to .70), and the result revealed that all dimensions converged in the same construct. Correlation coefficients of .26 to .65 were considered acceptable [49]. Also, correlation coefficient between .45 and .75 is acceptable [50].

Body Esteem. Body Esteem Scale for Adolescents and Adults (BESAA) [4] involving 23 items measuring the respondents' attitude and feelings regarding their own body and appearance. This scale consists of three aspects of body esteem among adolescents and adults including body esteem – appearance (BE-App), body esteem – weight (BE-W), and body esteem – attribution (BE-Att). Responses were scored based on 5 point Likert-type of scale from '0 (never) to 4 (always).' The items of BESAA consist of both positive and negative items. The highest score indicates high level of body esteem. The same psychometric evaluations also done for BESAA. Twenty items of BESAA met the criterion of item-total correlation coefficients (between .31 and .70), while the other three items were dropped from further analysis due to item-total correlations level was below than .30. The standardized Cronbach's alpha for the now-7 items of BE-App was .70, 5 items of BE-W was .77 and 8 items of BE-Att was .80. Convergent validity confirmed through significantly positive correlations between subscales (.30 to .58), and the result revealed that all dimensions converged in the same construct.

Body Image Coping Strategies. Body Image Coping Strategies Inventory (BICSI) [36] consists of 29 items measuring the respondents' management about their body image threats and challenges. This measurement consists of three dimensions namely avoidance (A), appearance fixing (AF) and positive rational acceptance (PRA). Responses were scored based on 4 point Likert-type of scale from '0 (definitely not like me) to 3 (definitely like me).' The highest score indicates the most way of coping that respondents actually do or would do. Also, the same psychometric evaluations done for BICSI. Twenty-eight items of BICSI met the criterion of item-total correlation

coefficients (between .31 and .61), while one items were dropped from further analysis due to item-total correlations level was below than .30. The standardized Cronbach's alpha for the now-7 items of A was .68, 10 items of AF was .84 and 11 items of PRA was .83. Convergent validity confirmed through significantly positive correlations between subscales (.33 to .52), and the result revealed that all dimensions converged in the same construct.

Statistic Analysis

Data were processed using the statistical software package IBM SPSS 24.0 for Windows. Hayes's multiple regression were used to test the mediation effect of coping strategies in the relationship between physical appearance teasing and body esteem [51]. Mediation analysis using ordinary least squares path analyses were done using Hayes's PROCESS macro procedure for SPSS [52]. Bootstrapping were used rather than Baron and Kenny's [53] method to examine the differences of statistic and magnitude of mediation effects [54]. Baron and Kenny's approach were criticised due to high Type I error and low statistical power [55]. While, bootstrap approach do not require normal sample distribution and have the best balance on Type I error and statistical power [55]. As suggested by Preacher and Hayes [56], 5,000 bootstrap samples were used to measure the indirect effect, direct effect and total effect as well as 95% bias-corrected and accelerated (BCa) confidence interval (CI) for mediation analysis. Since this approach produce asymmetrical confidence interval, the exact p values can't be calculated. Thus, if the respective confidence interval do not cross zero in between, the effects is considered significant at .50 level. A common method for testing the significance of the mediated (or indirect) effect is Sobel's test of mediation. This test allows us to determine whether the effect of predictor (physical appearance-related teasing) on the outcome (body esteem) is significantly reduced upon the addition of the mediator (body image coping strategies) into the model. All p values was set at $p < .05$.

Results

Multiple regression analyses were conducted for each body image variable to test for the mediation of body image coping strategies in the relationship between physical appearance-related teasing and body esteem. Details of the regressions are in the Table 1 to Table 3.

The results indicated that body image coping strategies mediated physical appearance-related teasing and body esteem. For each analyses, regressions indicated a positive effect of form of harassment, appearance-related teasing and physical-related teasing on positive rational acceptance. There also were positive effect of positive rational acceptance on body esteem – appearance, weight, and attribution, independent of all physical appearance-related teasing dimensions. The confidence interval for indirect effect of form of harassment on body esteem – appearance, weight and attribution through positive rational acceptance ($ab = 0.06$, $SE = 0.02$, 95% CI: 0.02 to 0.10; $ab = 0.04$, $SE = 0.02$, 95% CI: 0.01 to 0.10; $ab = 0.06$, $SE = 0.02$, 95% CI: 0.02 to 0.10 respectively) was entirely above zero. Results of the Sobel test confirmed that positive rational acceptance partially mediated the relationship between form of harassment and body esteem – appearance ($z = 2.95$, $p < .01$), weight ($z = 2.07$, $p < .05$) and attribution ($z = 3.08$, $p < .01$). The confidence interval for indirect effect of appearance-related teasing on body esteem – appearance, weight and attribution through positive rational acceptance ($ab = 0.08$, $SE = 0.03$, 95% CI: 0.03 to 0.16; $ab = 0.06$, $SE = 0.03$, 95% CI: 0.01 to 0.15; $ab = 0.08$, $SE = 0.03$, 95% CI: 0.03 to 0.16 respectively) was entirely above zero. Results of the Sobel test confirmed that positive rational acceptance partially mediated the relationship between appearance-related teasing and body esteem – appearance ($z = 2.61$, $p < .01$), and attribution ($z = 2.71$, $p < .01$), and fully mediated the relationship between appearance-related teasing and body esteem – weight ($z = 1.92$, $p > .05$). While, the confidence interval for indirect effect of physical-related teasing on body esteem – appearance, weight and attribution through positive rational acceptance ($ab = 0.06$, $SE = 0.03$, 95% CI: 0.01 to 0.13; $ab = 0.04$, $SE = 0.03$, 95% CI: 0.00 to 0.12; $ab = 0.06$, $SE = 0.03$, 95% CI: 0.01 to 0.12 respectively) was also entirely above zero. Results of the Sobel test confirmed that positive rational acceptance partially mediated the relationship between physical-related teasing and body esteem – appearance ($z = 2.11$, $p < .05$), and attribution ($z = 2.18$, $p < .05$), and fully mediated the relationship between physical-related teasing and body esteem – weight ($z = 1.64$, $p > .05$).

Regressions indicated a positive effect of form of harassment, appearance-related teasing and physical-related teasing on appearance fixing. There also were negative effect of appearance fixing on body esteem – appearance, and positive effect on body esteem – attribution, independent of all physical appearance-related

teasing dimensions. There is no effect of appearance fixing on body esteem – weight, independent of all physical appearance-related teasing dimensions. The confidence interval for indirect effect of form of harassment on body esteem – appearance through appearance fixing ($ab = -0.04$, $SE = 0.02$, 95% CI: -0.08 to -0.00) did not include zero. The confidence interval for indirect effect of form of harassment on body esteem – attribution through appearance fixing ($ab = 0.03$, $SE = 0.02$, 95% CI: 0.01 to 0.08) was entirely above zero. Results of the Sobel test confirmed that appearance fixing partially mediated the relationship between form of harassment and body esteem – appearance ($z = -1.98$, $p < .05$), and attribution ($z = 2.25$, $p < .05$). While, the confidence interval for indirect effect of form of harassment on body esteem – weight through appearance fixing ($ab = -0.03$, $SE = 0.03$, 95% CI: -0.09 to 0.02) was include zero. The confidence interval for indirect effect of appearance-related teasing on body esteem – appearance through appearance fixing ($ab = -0.06$, $SE = 0.03$, 95% CI: -0.13 to -0.01) did not include zero. The confidence interval for indirect effect of appearance-related teasing on body esteem – attribution through appearance fixing ($ab = 0.05$, $SE = 0.03$, 95% CI: 0.01 to 0.12) was entirely above zero. Results of the Sobel test confirmed that appearance fixing partially mediated the relationship between appearance-related teasing and body esteem – appearance ($z = -2.08$, $p < .05$), and attribution ($z = 2.07$, $p < .05$). While, the confidence interval for indirect effect of appearance-related teasing on body esteem – weight through appearance fixing ($ab = -0.05$, $SE = 0.04$, 95% CI: -0.14 to 0.02) was include zero. The confidence interval for indirect effect of physical-related teasing on body esteem – appearance through appearance fixing ($ab = -0.05$, $SE = 0.03$, 95% CI: -0.11 to -0.00) did not include zero. The confidence interval for indirect effect of physical-related teasing on body esteem – attribution through appearance fixing ($ab = 0.06$, $SE = 0.02$, 95% CI: 0.01 to 0.11) was entirely above zero. Results of the Sobel test confirmed that appearance fixing fully mediated the relationship between physical-related teasing and body esteem – appearance ($z = -1.90$, $p > .05$), and partially mediated the relationship between physical-related teasing and attribution ($z = 2.26$, $p < .05$). While, the confidence interval for indirect effect of physical-related teasing on body esteem – weight through appearance fixing ($ab = -0.03$, $SE = 0.04$, 95% CI: -0.12 to 0.04) was include zero.

Regressions indicated a positive effect of form of harassment, appearance-related teasing and physical-related teasing on avoidance. There also were negative effect of avoidance on body esteem – appearance, independent of all physical appearance-related teasing dimensions. There were negative effect of avoidance on body esteem – weight, independent of both form of harassment and appearance-related teasing. There is no effect of avoidance on body esteem – weight, independent of physical-related teasing. While, there is no effect of avoidance on body esteem – attribution, dependent of all physical appearance-related teasing dimensions. The confidence interval for indirect effect of form of harassment on body esteem – appearance and weight through avoidance ($ab = -0.06$, $SE = 0.02$, 95% CI: -0.10 to -0.03; $ab = -0.05$, $SE = 0.02$, 95% CI: -0.10 to -0.00 respectively) did not include zero. Results of the Sobel test confirmed that avoidance partially mediated the relationship between form of harassment and body esteem – appearance ($z = -3.13$, $p < .01$), and weight ($z = -1.98$, $p < .05$). The confidence interval for indirect effect of form of harassment on body esteem – attribution through avoidance ($ab = -0.01$, $SE = 0.01$, 95% CI: -0.04 to 0.02) was include zero. The confidence interval for indirect effect of appearance-related teasing on body esteem – appearance and weight through avoidance ($ab = -0.11$, $SE = 0.04$, 95% CI: -0.20 to -0.04; $ab = -0.10$, $SE = 0.05$, 95% CI: -0.20 to -0.01 respectively) did not include zero. Results of the Sobel test confirmed that avoidance partially mediated the relationship between appearance-related teasing and body esteem – appearance ($z = -3.06$, $p < .01$), and weight ($z = -1.98$, $p < .05$). The confidence interval for indirect effect of appearance-related teasing on body esteem – attribution through avoidance ($ab = -0.02$, $SE = 0.03$, 95% CI: -0.08 to 0.04) was include zero. The confidence interval for indirect effect of physical-related teasing on body esteem – appearance through avoidance ($ab = -0.09$, $SE = 0.03$, 95% CI: -0.15 to -0.04) did not include zero. Results of the Sobel test confirmed that avoidance partially mediated the relationship between physical-related teasing and body esteem – appearance ($z = -2.97$, $p < .01$). The confidence interval for indirect effect of physical-related teasing on body esteem – weight and attribution through avoidance ($ab = -0.06$, $SE = 0.04$, 95% CI: -0.14 to 0.00; $ab = -0.01$, $SE = 0.02$, 95% CI: -0.06 to 0.03 respectively) was include zero.

Table 1

Regression Coefficients, Standard Errors and Model Summary Information for the Mediations of Positive Rational Acceptance in Relationship between Physical Appearance-Related Teasing and Body Esteem

Predictors	Outcome											
	Positive Rational Acceptance						Body Esteem – Appearance					
		Coeff.	SE	t		Coeff.	SE	t	Coeff.	SE	t	
Form of Harassment	<i>a</i>	0.25	0.07	3.78***	<i>c</i> ₁	-0.26	0.05	-4.96****	<i>c</i> ₁ '	-0.21	0.05	-4.08***
Positive Rational Acceptance									<i>b</i> ₁	0.23	0.05	4.90****
Model summary		$R^2 = 0.04, F(1,361) = 14.28***$				$R^2 = 0.06, F(1,361) = 7.21**$				$R^2 = 0.14, F(4,358) = 14.96****$		
Appearance-Related Teasing	<i>a</i>	0.38	0.12	3.17**	<i>c</i> ₁	-0.48	0.09	-5.17****	<i>c</i> ₁ '	-0.39	0.09	-4.14****
Positive Rational Acceptance									<i>b</i> ₁	0.22	0.04	4.84****
Model summary		$R^2 = 0.03, F(1,361) = 10.08**$				$R^2 = 0.07, F(1,361) = 26.77****$				$R^2 = 0.14, F(4,358) = 15.11****$		
Physical-Related Teasing	<i>a</i>	0.27	0.11	2.42*	<i>c</i> ₁	-0.49	0.09	-5.71****	<i>c</i> ₁ '	-0.41	0.09	-4.72****
Positive Rational Acceptance									<i>b</i> ₁	0.21	0.04	4.69****
Model summary		$R^2 = 0.02, F(1,361) = 5.85*$				$R^2 = 0.08, F(1,361) = 32.61****$				$R^2 = 0.15, F(4,358) = 16.53****$		

Continued.

Body Esteem – Weight	Outcome														
	Body Esteem – Weight						Body Esteem – Attribution								
	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t			
<i>c</i> ₂	-0.20	0.07	-2.69**	<i>c</i> ₂ '	-0.16	0.08	-2.06	<i>c</i> ₃	0.02	0.05	0.47, <i>p</i> > .05	<i>c</i> ₃ '	-0.06	0.05	-1.37, <i>p</i> > .05
				<i>b</i> ₂	0.17	0.07	2.56*					<i>b</i> ₃	0.23	0.04	5.49****
	$R^2 = 0.02, F(1,361) = 7.21**$				$R^2 = 0.04, F(4,358) = 4.27**$				$R^2 = 0.00, F(1,361) = 0.22, p > .05$				$R^2 = 0.15, F(4,358) = 16.27****$		
<i>c</i> ₂	-0.32	0.13	-2.40*	<i>c</i> ₂ '	-0.23	0.14	-1.67, <i>p</i> > .05	<i>c</i> ₃	0.05	0.09	0.58, <i>p</i> > .05	<i>c</i> ₃ '	-0.07	0.08	-0.85, <i>p</i> > .05
				<i>b</i> ₂	0.17	0.08	2.52*					<i>b</i> ₃	0.23	0.04	5.46
	$R^2 = 0.01, F(1,361) = 5.75*$				$R^2 = 0.04, F(4,358) = 3.90**$				$R^2 = 0.00, F(1,361) = 0.34, p > .05$				$R^2 = 0.15, F(4,358) = 15.93****$		
<i>c</i> ₂	-0.56	0.12	-4.62****	<i>c</i> ₂ '	-0.51	0.13	-4.01****	<i>c</i> ₃	-0.06	0.08	-0.78, <i>p</i> > .05	<i>c</i> ₃ '	-0.17	0.08	-2.21*
				<i>b</i> ₂	0.16	0.07	2.42*					<i>b</i> ₃	0.22	0.04	5.40****
	$R^2 = 0.05, F(1,361) = 21.31****$				$R^2 = 0.07, F(4,358) = 7.34****$				$R^2 = 0.00, F(1,361) = 0.61, p > .05$				$R^2 = 0.16, F(4,358) = 17.15****$		

Notes: Association of (*a*) physical appearance-related teasing variable and positive rational acceptance; (*b*₁) positive rational acceptance and body esteem – appearance; (*b*₂) positive rational acceptance and body esteem – weight; (*b*₃) positive rational acceptance and body esteem – attribution; (*c*₁) physical appearance-related teasing variable and body esteem – appearance; (*c*₂) physical appearance-related teasing variable and body esteem – weight; (*c*₃) physical appearance-related teasing variable and body esteem – attribution; (*c*₁') physical appearance-related teasing variable and body esteem – appearance, controlling for positive rational acceptance; (*c*₂') physical appearance-related teasing variable and body esteem – weight, controlling for positive rational acceptance; (*c*₃') physical appearance-related teasing variable and body esteem – attribution, controlling for positive rational acceptance.

* *p* < 0.05; ** *p* < 0.01; *** *p* < 0.001; **** *p* < 0.0001

Table 2

Regression Coefficients, Standard Errors and Model Summary Information for the Mediations of Appearance Fixing in Relationship between Physical Appearance-Related Teasing and Body Esteem

Predictors	Outcome												
	Appearance Fixing			Body Esteem – Appearance			Body Esteem – Appearance			Body Esteem – Appearance			
	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t	
Form of Harassment	<i>a</i>	0.38	0.07	5.72****	<i>c₁</i>	-0.26	0.05	-4.96****	<i>c₁'</i>	-0.21	0.05	-4.08****	
Appearance Fixing										<i>b₁</i>	-0.10	0.04	-2.15*
Model summary		$R^2 = 0.08, F(1,361) = 32.76****$				$R^2 = 0.06, F(1,361) = 24.62****$				$R^2 = 0.14, F(4,358) = 14.96****$			
Appearance-Related Teasing	<i>a</i>	0.56	0.12	4.64****	<i>c₁</i>	-0.48	0.09	-5.17****	<i>c₁'</i>	-0.39	0.09	-4.14****	
Appearance Fixing										<i>b₁</i>	-0.11	0.04	-2.37*
Model summary		$R^2 = 0.06, F(1,361) = 21.57****$				$R^2 = 0.07, F(1,361) = 26.77****$				$R^2 = 0.14, F(4,358) = 15.11****$			
Physical-Related Teasing	<i>a</i>	0.53	0.11	4.73****	<i>c₁</i>	-0.49	0.09	-5.71****	<i>c₁'</i>	-0.41	0.09	-4.72****	
Appearance Fixing										<i>b₁</i>	-0.10	0.04	-2.13*
Model summary		$R^2 = 0.06, F(1,361) = 22.42****$				$R^2 = 0.08, F(1,361) = 32.61****$				$R^2 = 0.15, F(4,358) = 16.53****$			

Continued.

Body Esteem – Weight	Outcome														
	Body Esteem – Weight			Body Esteem – Attribution			Body Esteem – Attribution			Body Esteem – Attribution					
	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t			
<i>c₂</i>	-0.20	0.07	-2.69**	<i>c₂'</i>	-0.16	0.08	-2.06*	<i>c₃</i>	0.02	0.05	0.47, $p > .05$	<i>c₃'</i>	-0.06	0.05	-1.37, $p > .05$
				<i>b₂</i>	-0.08	0.07	-1.24, $p > .05$					<i>b₃</i>	0.10	0.04	2.49*
	$R^2 = 0.02, F(1,361) = 7.21**$				$R^2 = 0.04, F(4,358) = 4.27**$				$R^2 = 0.00, F(1,361) = 0.22, p > .05$				$R^2 = 0.15, F(4,358) = 16.27****$		
<i>c₂</i>	-0.32	0.13	-2.40*	<i>c₂'</i>	-0.23	0.14	-1.67, $p > .05$	<i>c₃</i>	0.05	0.09	0.58, $p > .05$	<i>c₃'</i>	-0.07	0.08	-0.85, $p > .05$
				<i>b₂</i>	-0.09	0.07	-1.41, $p > .05$					<i>b₃</i>	0.10	0.04	2.36*
	$R^2 = 0.01, F(1,361) = 5.75*$				$R^2 = 0.04, F(4,358) = 3.90**$				$R^2 = 0.00, F(1,361) = 0.34, p > .05$				$R^2 = .15, F(4,358) = 15.93****$		
<i>c₂</i>	-0.56	0.12	-4.62****	<i>c₂'</i>	-0.51	0.13	-4.01****	<i>c₃</i>	-0.06	0.08	-0.78, $p > .05$	<i>c₃'</i>	-0.17	0.08	-2.21*
				<i>b₂</i>	-0.06	0.06	-0.97, $p > .05$					<i>b₃</i>	0.11	0.04	2.63**
	$R^2 = 0.05, F(1,361) = 21.31****$				$R^2 = 0.07, F(4,358) = 7.34****$				$R^2 = 0.00, F(1,361) = 0.61, p > .05$				$R^2 = 0.16, F(4,358) = 17.15****$		

Notes: Association of (*a*) physical appearance-related teasing variable and appearance fixing; (*b₁*) appearance fixing and body esteem – appearance; (*b₂*) appearance fixing and body esteem – weight; (*b₃*) appearance fixing and body esteem – attribution; (*c₁*) physical appearance-related teasing variable and body esteem – appearance; (*c₂*) physical appearance-related teasing variable and body esteem – weight; (*c₃*) physical appearance-related teasing variable and body esteem – attribution; (*c₁'*) physical appearance-related teasing variable and body esteem – appearance, controlling for appearance fixing; (*c₂'*) physical appearance-related teasing variable and body esteem – weight, controlling for appearance fixing; (*c₃'*) physical appearance-related teasing variable and body esteem – attribution, controlling for appearance fixing.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; **** $p < 0.0001$

Table 3

Regression Coefficients, Standard Errors and Model Summary Information for the Mediations of Avoidance in Relationship between Physical Appearance-Related Teasing and Body Esteem

Predictors	Outcome											
	Avoidance			Body Esteem – Appearance								
		Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t		
Form of Harassment Avoidance	<i>a</i>	0.23	0.04	5.64****	<i>c₁</i>	-0.26	0.05	-4.96****	<i>c₁'</i>	-0.21	0.05	-4.08****
Model summary		$R^2 = 0.08, F(1,361) = 31.81****$				$R^2 = 0.06, F(1,361) = 24.62****$				$R^2 = 0.14, F(4,358) = 14.96****$		
Appearance-Related Teasing Avoidance	<i>a</i>	0.46	0.07	6.24****	<i>c₁</i>	-0.48	0.09	-5.17****	<i>c₁'</i>	-0.39	0.09	-4.14****
Model summary		$R^2 = 0.10, F(1,361) = 38.90****$				$R^2 = 0.07, F(1,361) = 26.77****$				$R^2 = 0.14, F(4,358) = 15.11****$		
Physical-Related Teasing Avoidance	<i>a</i>	0.35	0.07	5.00****	<i>c₁</i>	-0.49	0.09	-5.71****	<i>c₁'</i>	-0.41	0.09	-4.72****
Model summary		$R^2 = 0.06, F(1,361) = 25.02****$				$R^2 = 0.08, F(1,361) = 32.61****$				$R^2 = 0.15, F(4,358) = 16.53****$		

Continued.

Body Esteem – Weight	Outcome														
	Body Esteem – Weight			Body Esteem – Attribution											
	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t	Coeff.	SE	t			
<i>c₂</i>	-0.20	0.07	-2.69**	<i>c₂'</i>	-0.16	0.08	-2.06*	<i>c₃</i>	0.02	0.05	0.47, <i>p</i> > .05	<i>c₃'</i>	-0.06	0.05	-1.37, <i>p</i> > .05
				<i>b₂</i>	-0.21	0.10	-2.15*					<i>b₃</i>	-0.03	0.06	-0.54, <i>p</i> > .05
	$R^2 = 0.02, F(1,361) = 7.21**$				$R^2 = 0.04, F(4,358) = 4.27**$				$R^2 = 0.00, F(1,361) = 0.22, p > .05$				$R^2 = 0.15, F(4,358) = 16.27****$		
<i>c₂</i>	-0.32	0.13	-2.40*	<i>c₂'</i>	-0.23	0.14	-1.67, <i>p</i> > .05	<i>c₃</i>	0.05	0.09	0.58, <i>p</i> > .05	<i>c₃'</i>	-0.07	0.08	-0.85, <i>p</i> > .05
				<i>b₂</i>	-0.21	0.10	-2.11*					<i>b₃</i>	-0.03	0.06	-0.59, <i>p</i> > .05
	$R^2 = 0.01, F(1,361) = 5.75*$				$R^2 = 0.04, F(4,358) = 3.90**$				$R^2 = 0.00, F(1,361) = 0.34, p > .05$				$R^2 = 0.15, F(4,358) = 15.93****$		
<i>c₂</i>	-0.56	0.12	-4.62****	<i>c₂'</i>	-0.51	0.13	-4.01****	<i>c₃</i>	-0.06	0.08	-0.78, <i>p</i> > .05	<i>c₃'</i>	-0.17	0.08	-2.21*
				<i>b₂</i>	-0.17	0.09	-1.83, <i>p</i> > .05					<i>b₃</i>	-0.02	0.06	-0.39, <i>p</i> > .05
	$R^2 = 0.05, F(1,361) = 21.31****$				$R^2 = 0.07, F(4,358) = 7.34****$				$R^2 = 0.00, F(1,361) = 0.61, p > .05$				$R^2 = 0.16, F(4,358) = 17.15****$		

Notes: Association of (*a*) physical appearance-related teasing variable and avoidance; (*b₁*) avoidance and body esteem – appearance; (*b₂*) avoidance and body esteem – weight; (*b₃*) avoidance and body esteem – attribution; (*c₁*) physical appearance-related teasing variable and body esteem – appearance; (*c₂*) physical appearance-related teasing variable and body esteem – weight; (*c₃*) physical appearance-related teasing variable and body esteem – attribution; (*c₁'*) physical appearance-related teasing variable and body esteem – appearance, controlling for avoidance; (*c₂'*) physical appearance-related teasing variable and body esteem – weight, controlling for avoidance; (*c₃'*) physical appearance-related teasing variable and body esteem – attribution, controlling for avoidance.

* *p* < 0.05; ** *p* < 0.01; *** *p* < 0.001; **** *p* < 0.0001

Discussion

The objective of this study was to examine the mediation effect of body image coping strategies in the relationship between physical appearance-related teasing and body esteem. According to mediation analyses, positive rational acceptance were partially mediated the relationship between all physical appearance-related teasing dimensions (form of harassment, appearance-related teasing, and physical-related teasing) and body esteem – appearance and attribution, partially mediated the relationship between form of harassment and body esteem – weight, and fully mediated the relationship between appearance and physical-related teasing and body esteem – weight. Appearance fixing were also partially mediated the relationship between both form of harassment and appearance-related teasing and body esteem – appearance, and fully mediated the relationship between physical-related teasing and body esteem – appearance. Appearance fixing were found to partially mediate the relationship between all physical appearance-related teasing dimensions and body esteem – attribution. While, there is no mediation effects of appearance fixing in the relationship between all physical appearance-related teasing dimensions and body esteem – weight. Analyses also found that avoidance partially mediated the relationship between all physical appearance-related teasing dimensions and body esteem – appearance, and the relationship between both form of harassment and appearance-related teasing and body esteem – weight. Meanwhile, there is no mediation effects of avoidance in the relationship between physical-related teasing and body esteem – weight, and the relationship between all physical appearance-related teasing dimensions and body esteem – attribution.

Lazarus and Folkman's transactional coping model describes as one evaluate whether the situational is threatening and then evaluate available resources to resolve the situations [57]. Based on the evaluations, an individual are ready to take cognitive or behavioural actions to cope with the distressing situations. The influential determinants of selection of coping strategies maybe found in the context of situational. It is clear that distressing events, suc as physical appearance-related teasing, influence the selection of coping strategies. Study found that some coping strategies of teasing were adapted among eight grade students including verbal attacks, ignoring the situation, laugh along with the perpetrators, fight back or tell the teacher [10]. A qualitative study among obesity or overweight female adolescents reported some types of coping strategies including ignore, hurt and angry [58]. They also found that Caucasian adolescents are more likely to seek support from others than African-American. This suggests that distressing events, such as physical appearance-related teasing, influence the selection of coping strategies. As confirmed in these studies, maladaptive coping strategies are more preferable rather than adaptive coping strategies, such as positive rational acceptance. However, our findings suggests that all coping strategies was influenced by physical appearance-related teasing.

We found that positive rational acceptance, rather than appearance fixing and avoidance, mediated all the relationship between physical appearance-related teasing dimensions and body esteem dimensions. Our study suggest that positive rational acceptance are more likely to become the most way of coping that respondents actually or would do to resolve the actual or perceived physical appearance-related teasing experiences, which in turn increasing their body esteem level. This maybe because of respondents who experienced teasing regarding their body and appearance are more likely to practice mental and behavioural activities positively, such as adapting positive self-care strategy or rational self-talk and accepting the experiences [36] and gaining a positive self-evaluation of their body and appearance. They maybe telling themselves that negative situations will happened (irrational), thus looks much better than what is perceived [59]. Yet, positive rational acceptance describes as an adaptive coping [36]. As an adaptive coping, researchers explain that approach coping strategy, such as problem solving, associated with better functional than avoidance strategy, such as avoiding problems [28].

A qualitative study through interviews among female adolescents reported some coping strategies including seeking social support from peers [60]. They also found adaptive strategies to overcome anxieties over their body including getting themselves emotionally and physically away

from negative situations and talk about it with friends who can help them. According to Lazarus and Folkman's [58] transactional model, if the resources of stress evaluated as not relevant or positive about one's situations, there is no effect of stress experienced. Therefore, dependency on positive rational acceptance may explain (mediate) why this coping strategy reducing the effects of physical appearance-related teasing on body esteem.

Adapting appearance fixing strategy in response to threats and suffering regarding body image can have negative effects, such as detrimental effects and low level of self-esteem [36]. Appearance fixing strategy associated with less adaptive attitudes towards one's body image (such as negative evaluation), body image dysphoria, and poorer psychological functional (such as low level of self-esteem) [40]. There is some maladaptive coping of body image including body checking, avoidance on body, correcting some aspects of body, camouflage and plays role in a variety of purposes [38]. Study found some coping strategies among women with eating disturbances including body checking to reduce anxieties through self-confidence, avoid negative consequences that might happened without body checking, and controlling diet as well as controlling weight [61]. With regard to body checking, this strategy promoting an individual to escape or reducing psychological and emotional distress regarding his/her physical appearance temporarily [38]. In facts, negative attitudes towards body (such as poorer body image) through negative reinforcement are maintained.

The existence of mediation effects of avoidance strategy due to teasing can be seen when this strategy influence respondent's body esteem, supporting the previous studies. Study found that the use of avoidance coping among adolescents, such as self-blame, worry, internalize problems, and dreaming, associated with bad effects including depression [62]. Studies also confirmed that young people who are unable to cope more likely to use avoidance strategies including crying, worry and social withdrawal [63] and more likely to feel less or not good about their self and situation [64]. Avoidance coping are a consistent predictor to maladaptive and decreasing well-being [28]. They stated that young people who are more victimized among peers regarding their appearance (such as weight, attractiveness, body size and shape) maybe more considered appearance characteristics as difficult/can not be altered or out of their control, which in turn influence them to use avoidance rather than approach strategy. Therefore, the selection of avoidance coping rather than approach coping explain why physical appearance-related teasing negatively influence body esteem (especially regarding appearance and weight).

Our study also found physical appearance-related teasing do not influence body esteem – weight and attribution indirectly through appearance fixing and avoidance. We expect that most of the respondents in this study do not apply emotion-focused coping strategies to manage emotional responses of stress [65], and problem-focused coping strategies to manage and change the resources of stress [66]. Two types of coping namely approach and avoidance, which is one actively trying to deal with or avoid stress [67]. Respondents might not prefer both approach and avoidance methods as these strategies maintained through negative reinforcement to provide reliefs temporarily through avoidance, ignoring, worry, accepting undesired blame, internalize problems or escape from the problems [28, 68], thus does not affect their body esteem.

Given the coping strategies help to increase level of body esteem, those who are more prone to teasing need to proactively involve with adaptive coping in order to increase their body esteem. One of proactive approach that can be used is self-regulatory behaviour to control the evaluation of body image and the consequences of self-reinforcements [40]. One of self-regulatory regarding body image is appearance self-management. Self-management through clothing, cosmetics, hair styles, accessories and so on was not always giving dark side to hide or correcting "offensive" physical characteristics as well as avoid thoughts and emotions triggered by self-consciousness. For instance, study found that man and women (those who experience high level of body anxiety and dissatisfaction) experience low level of anxiety and dissatisfaction over their appearance immediately after gaining tattoo on their body, and increasing their body esteem [69]. Modification on some aspects of their body also causes a positive behavioural changes of body. It is suggested

that respondent are more likely to focus on their tattoo rather than their body and experience high body esteem. It is possible that appearance fixing and avoidance in the context of positive effects need to be practiced among adolescents who experienced distress regarding their body.

Limitations of the study are explained by the use of survey method with self-reported questionnaire. Thus, the self-reported experiences of physical appearance teasing, body esteem and body image coping strategies might encounter refusal or under/over-reporting. This study also used a small sample size which involved only 16-year-old adolescents. The systematic random sampling method had been used in the study to select sample from sampling frame (a list of names of form four students from three secondary schools). Generally, the population of sample targets was among those adolescents who lived in urban areas and went to school closest to the urban center.

The common method variance (CMV) is the variance that can be attributed to the method of measurement rather than to the constructs represented by its measurement [70]. CMV is a potential problem in the current study including common rater effects (social desirability, mood state, transient mood state, etc.), item characteristic effects (item social desirability, positive and negative item wording, etc.), item context effects (scale length, intermixing or grouping of items or constructs on the questionnaire, etc.) and measurement context effects (predictor and criterion variables measured in the same point in time and location, etc.). These biases might be happened due to respondents' comprehension, retrieval, judgment, response selection and response reporting. According to Podsakoff *et al.* (2003), one of techniques for controlling CMV applied in the current study are controlling the design of study's procedures, that is psychological separation of measurement [70]. Psychological separation were used by creating questionnaire with a cover story to make the appearance of measurement of predictor variable (physical appearance-related teasing and body image coping strategies) but not connected with or related to the measurement of criterion variable (body esteem).

Based on the limitations described above, it is suggested that future studies regarding this issue, particularly in Malaysia, should consider a much bigger sample from a wider perspective, involving both urban and rural adolescents with variations of age. It is also important for future research to consider other variables that may have impacts on body esteem such as body dissatisfaction and personality. Besides that further studies can use interviewing, case studies or focus-group follow-ups methods to expand studies on body dissatisfaction among adolescents. These kind of methods enable the acquisition of more in-depth information about respondents' feelings regarding body and appearance, experiences of teasing and their coping styles regarding body and appearance. A better understanding of why someone satisfied or dissatisfied with his/her body and appearance can help prevent the negative and increase the positive feelings on his/her body and appearance.

Conclusion

Based on the results, early identification of physical appearance-related teasing and dissatisfaction on body and appearance among adolescents is important in order to avoid further mental health issues relating to this problem. Identification and empowering adaptive or positive coping strategies were also important in order to cope with interpersonal interactions and body image disturbances. Thus, increasing the knowledge in this area may help to guide practitioners, therapists, or counsellors into developing effective interventions and preventions programmes that would help local adolescents practicing a healthier social interactions and perception of body image and increase general health status.

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Article received 2018-01-19