

# The Association between Teasing Behaviors, Self-regulation, and Depression Levels in Primary School Children

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## Abstract

**Background:** Teasing is a common problem among adolescents. The aim of this study was to determine the prevalence of experiencing teasing in adolescents, and to compare the levels of self-confidence and depression in those who were subjected to teasing and those who were not.

**Methods:** This cross-sectional study was conducted with 1,796 adolescents aged 11-14 in four different schools located in İzmir, Turkey between February and May 2018. Sampling was not used in the study as the goal was to encompass the entire population. For data collection, the Child-Adolescent Teasing Scale (CATS), Piers-Harris Children's Self-Concept Scale (PHCSCS) and Children's Depression Inventory (CDI) were used.

**Results:** Of the participants, 76.5% reported that they were subjected to teasing. The mean score achieved by the participants on the CDI was  $24.08 \pm 4.40$ , while on the PHCSCS it was  $59.50 \pm 10.87$ . Although the level of self-confidence in adolescents who were subjected to teasing was lower ( $P < 0.0001$ ), there was no change in their depression levels ( $P = 0.364$ ). PHCSCS scores were negatively correlated with CATS scores. The overweight/obese adolescents obtained higher scores from CATS and lower scores from PHCSCS ( $P < 0.0001$ ).

**Conclusions:** Adolescents who have been exposed to bullying were found to have lower self-esteem scores compared with those who were not, while their depression scores remained the same. In order to ensure adolescents' physical, psychological and social well-being at school, multidisciplinary teams should conduct awareness-raising and anti-teasing programs.

**Keywords:** Bullying, Body image, Depression, Adolescent, Schools

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## 1. Introduction

Teasing, a form of peer bullying, is characterized by various taunts on individual or social factors (e.g., appearance, performance, social behavior, academic achievement or family history) (1, 2). Teasing, as one of the most common forms of bullying (3-6), has become a significant public health issue worldwide due to its negative effects on children (2, 5, 7-9).

Adolescents are exposed to teasing during childhood due to various conditions and characteristics. While overweight adolescents are reported to be exposed to teasing more than adolescents with normal body weight (10), girls are mostly exposed to physical appearance and weight-related teasing (9, 11, 12). Adolescents exposed to teasing developed more negative attitudes towards physical activities (12, 13), tended to overeat and developed other inappropriate eating behaviors

(14). The weight-based teasing was associated with depression and decreased self-esteem and body satisfaction (15-17). To a certain extent, teasing in childhood can be a normal part of development. However, for adolescents who cannot deal with such situations, teasing adversely affects their psychosocial health and general well-being, and can be harmful (2, 14, 15). These adolescents are more vulnerable to alcohol and drug abuse and are likely to develop suicidal behaviors (5, 18) to have emotional eating disorders (12, 14, 19) and to suffer depression and feelings of social exclusion (9, 20-22), loneliness and social anxiety in young adulthood (21). As shown, exposure to peer teasing during childhood is closely related to long-term negative outcomes that continue in adulthood.

Schools are essential in fostering an adolescent's cognitive, social, and emotional growth. In addition, schools are social institutions where adolescents communicate and socialize with their

peers throughout the day (11, 23). Determining the risk factors related to teasing for adolescents who face many negative situations in the school setting may enable us to better understand the behavioral and psychosocial outcomes of teasing. The main purpose of this cross-sectional study was to determine the prevalence of teasing behavior in adolescents. The present study also sought an answer to the following question: "What is the level of self-confidence and depression in adolescents who are subjected to teasing and who are not?"

## 2. Methods

### 2.1. Study Design

This was a cross-sectional study, and the STROBE checklist was used for reporting.

### 2.2. Participants

The study population comprised 1810 adolescents in the 11-14 age group going to four secondary schools in which school health studies were carried out. The reason for targeting a large sample from four different schools is to provide diversity and reveal the relationships between the variables examined. The schools were in three central districts of Turkey, a metropolitan city in the western part of Izmir. In the study, sampling was not done as the aim was to reach the entire population. In Turkey, students with mild mental retardation can receive regular education as inclusion students. These students were not included in the study. Only adolescents without mental disabilities, who were willing to participate, and had parental consent were included in the study (n=1796). Mainstreaming students and those who did not want to fill the questionnaires were not included in the study (n=14).

### 2.3. Measurement

**Adolescent Information Form:** Developed based on relevant literature, the form includes 23 items on socio-demographics and academic achievement. (7, 11). To determine their academic achievement, they were asked to respond to the following questions "How do you evaluate your academic achievement?" and "According to you, how do your parents evaluate your academic achievement?" by choosing one of these options: "very bad", "bad", "moderate", "good" and "very good". They were

also asked to respond "Which of the following best describes your success at school last year?" by choosing one of these options: (a) I was awarded to a certificate of appreciation, (b) I was awarded to a certificate of achievement, (c) I passed the class without resitting and (d) I retake the class". Finally, they were asked to respond to the question "How do you perceive your family's economic level?" by choosing one of these options: "very bad", "bad", "moderate", "good" and "very good".

**Child-Adolescent Teasing Scale (CATS):** The scale developed by Vessey and colleagues is used to assess teasing in children and adolescents (24). The Turkish version has 23 items rated on 4-point Likert-type scale (1=never to 4=quite often). CATS are included in four subscales: Personality and Behavior Teasing, Family and Environment Teasing, School-Related Teasing, and Teasing About My Body. Total scores are calculated by multiplying the amount score with the bother score for each item. The lowest score obtained on the scale is 32, and the highest score is 512. The cut-off score of the scale is 23 (minimum 23 maximum 368 points). While a score of  $\geq 24$  indicates exposure to teasing, a score of  $\leq 23$  indicates the absence of teasing. The scale is a reliable screening tool for identifying students who are at risk of being subjected to teasing. Turkish version Cronbach's alpha was 0.92, Content Validity Index is 0.87 (25). Cronbach alpha for this scale in the study was 0.94.

**Piers-Harris Children's Self-Concept Scale (PHSCS):** The scale is used to determine the development and dimensions of self-concept in children and its relations with personality and environment elements. The scale includes 80 self-descriptive statements answered either "yes" or "no" (minimum - maximum scores: 0-80). High scores obtained from the scale indicate that the child's self-concept development is good (26). The Cronbach alpha for this scale in the study was 0.90.

**Children's Depression Inventory:** A "self-assessment" inventory consists of 27 items each of which contains three statements about the symptoms of childhood depression. Children are asked to select the statement that best describes them within the past two weeks (27, 28). The score for each response ranges from 0 to 2. The lowest and highest scores between 0 and 54. The cut-off score of the scale is 19. The higher score indicates the severity of depression. No special training is

required to administer the tool (28). The Cronbach's alpha value was 0.94.

**Anthropometric measurements:** While an electronic scale was used to measure body weight, a portable height-measuring tape (tape measure) was used to measure the body height. For height measurements, children were asked to take off their shoes and to stand upright with their bare feet together while the back of their head, back, buttocks, and heels were in contact with the height-measuring tape. To make weight measurements, students were asked to take off their shoes, and heavy clothes like coats, jackets, cardigans. The anthropometric measurements were taken by trained expert nurses. Body weight, height, and body mass index (BMI) were evaluated using the World Health Organization (WHO) 2007 Growth Reference for children and adolescents aged 5–19 years (29).

#### 2.4. Procedures

Data collection tools were administered by the researchers in the classroom environment during the counseling course hours. They were informed about how to fill in the data collection tools. Data were collected in one course hour. They were asked not to write any personally identifiable information on the questionnaire. They were also told that participation was voluntary.

#### 2.5. Ethical Issues

Ethical approval from the Non-interventional Research Ethics Committee (2017; No: 91), and permission from the Provincial Directorate of National Education were obtained. Written informed consent was obtained from the families. Verbal informed consent was obtained from the students for their participation in the study. They were asked to write not their names but pseudonyms on the survey forms.

#### 2.6. Data Analysis

The data were analyzed using SPSS PASW (Predictive Analytics Software Statistics) version 25.0. Normality test was performed for each quantitative data and P values were found to be greater than 0.05, parametric tests were used. The relationship between PHCSCS, CDI and CATS scores and variables such as age and BMI was analyzed using the Pearson correlation coefficient. The effect

of socio-demographic characteristics on teasing was determined using the logistic regression analysis. The participants were assigned to 2 groups according to their CATS scores: those whose CATS scores were  $\leq 23$  were assigned to the "not subjected to teasing" group and coded as "0" whereas those whose CATS scores were  $\geq 24$  were assigned to the "subjected to teasing" group and coded as 1. A logistic regression analysis was conducted. In the Binary logistic regression analysis, the Backward Regression model was used. In the regression analysis, the participants were grouped as "10-11-year-olds" and "12-13-year-olds" for age, as "normal", "slightly overweight" and "obese" for the BMI, as "nuclear", "extended" and "others" for the family type, as "very good", "good", "moderate", and "bad" for the income status and as "very good", "good", "moderate", and "bad/very bad" for the child's and family's perception of academic achievement. The level of significance for all the analysis was set at  $P < 0.05$ .

### 3. Results

Of the participating adolescents, 57% were in the 10-12 age group, 50.4% were male. 82.3% had a nuclear family, and while 22% perceived their economic situation as very good, only 1.7% perceived it as bad.

It was determined that 76.5% ( $n=1374$ ) of the adolescents were subjected to teasing. The 6<sup>th</sup> graders ( $P < 0.001$ ), those in the 10-11 age group ( $P = 0.02$ ), those whose economic status was moderate or bad ( $P < 0.001$ ), those who were awarded to a certificate of achievement or passed the class without resitting in the previous year ( $P < 0.001$ ), those who perceived their academic achievement as bad or moderate ( $P < 0.001$ ), those whose family perceived their academic achievement as bad or moderate ( $P < 0.001$ ), those who were overweight and obese ( $P < 0.001$ ) were exposed to teasing more than were other groups (Table 1). There was no correlation between teasing and variables such as gender, presence of a physical disability and family type ( $P = 0.220$ ;  $P = 0.09$ ;  $P = 0.370$ ).

The mean score obtained by the participants from CATS was  $41.49 \pm 0.6$  (min-max: 23-155) (Interquartile range: 24-49). There was no correlation between the participants' CDI and CATS scores ( $P > 0.230$ ). The mean PHCSCS score of the participants who were subjected to teasing was  $59.50 \pm 4.40$  while it was  $67.04 \pm 4.33$  for those

**Table 1:** Distribution of the participants in terms of exposure to teasing by their socio demographic characteristics

Socio-demographic characteristics	Subjected to teasing (≥24 points)		Not subjected to teasing (≤23 points)		χ <sup>2</sup> , P
	n	% <sup>a</sup>	n	% <sup>a</sup>	
Grade (n:1796)					
5 <sup>th</sup> grade	301	22.2	151	35.5	0.001
6 <sup>th</sup> grade	501	36.5	134	31.8	
7 <sup>th</sup> grade	347	25.3	91	21.6	
8 <sup>th</sup> grade	220	16.0	47	11.1	
Gender (n:1795)					
Girl	670	48.8	220	52.1	0.220
Boy	704	51.2	202	47.9	
Age (n:1795)					
10-11	806	58.7	284	67.3	0.020
12-13	567	41.3	138	32.7	
Presence of a physical disability (n: 1658)					
Yes	15	1.2	1	0.2	0.090
No	1244	98.8	398	94.3	
BMI (n:1796)					
Normal	639	46.5	226	53.6	0.001
Overweight	651	47.4	192	45.5	
Obese	84	6.1	4	0.9	
Economic status (n:1786)					
Very good	272	19.9	121	28.9	0.001
Good	647	47.3	214	51.1	
Moderate	419	30.7	80	19.1	
Bad	29	2.2	4	1.0	
Family type (n:1790)					
Nuclear	1118	81.6	355	84.5	0.370
Extended	130	9.5	35	8.3	
Parents separated or divorced	122	8.9	30	7.1	
Academic achievement in the previous year (n: 1791)					
Awarded to a certificate of appreciation	852	62.2	325	77.2	0.001
Awarded to a certificate of achievement / passed the class without resitting	518	37.8	96	22.8	
How do you perceive your academic achievement (n: 1795)					
Bad / very bad	78	5.6	12	2.8	0.001
Moderate	304	22.2	56	13.3	
Good	562	41.0	151	35.8	
Very good	427	31.1	203	48.1	
How does your family perceive your academic achievement? (n: 1793)					
Bad / very bad	62	4.5	10	2.4	0.001
Moderate	264	19.2	48	11.4	
Good	522	38.0	131	31.0	
Very good	525	38.2	233	55.2	

<sup>a</sup> Column percentage; BMI: Body Mass Index

who were not exposed to teasing. This indicates a relationship between their CATS and PHCSCS scores ( $P=0.0001$ ) (Table 2).

It was determined that the participants' BMI values were negatively correlated with their PHCSCS scores and positively correlated with their CATS scores ( $P=0.01$ ), that their CDI scores were positively correlated with their PHCSCS scores

and negatively correlated with their CATS scores ( $P=0.0001$ ) and that the correlation between their PHCSCS and CATS scores was negative ( $r=-0.426$ ,  $P=0.01$ ) (Table 3). It was also determined that their overall CATS and Physical Appearance Teasing subscale scores increased and PHCSCS scores decreased as their BMI values increased and that their PHCSCS scores decreased as their mean scores for CATS and its sub-scales increased ( $P=0.001$ ).

**Table 2:** Distribution of Children's Depression Inventory and Piers-Harris Children's Self-Concept Scale Scores in terms of exposure to teasing

Scales	Subjected to teasing		Not subjected to teasing		P <sup>a</sup>
	n	Mean±SD	n	Mean±SD	
CDI	1362	24.08±4.40	420	24.29±4.33	>0.364
PHCSCS	1370	59.50±10.87	421	67.04±8.28	<0.001

<sup>a</sup> Independent t test; CDI: Children's Depression Inventory; PHCSCS: Piers-Harris Children's Self-Concept Scale

**Table 3:** Correlation of students' Body Mass Index values, Child-Adolescent Teasing Scale, Children's Depression Inventory and Piers-Harris Children's Self-Concept Scale Levels

Variables	BMI	CDI	PHCSCS
BMI	1.000		
CDI	0.010	1.000	
PHCSCS	-0.082 <sup>a</sup>	0.175 <sup>a</sup>	1.000
CATS	0.078 <sup>a</sup>	-0.075 <sup>a</sup>	-0.426 <sup>a</sup>
Personality and Behaviour Teasing	0.031	-0.024	-0.334 <sup>**</sup>
School-Related Teasing	0.022	-0.046	-0.351 <sup>**</sup>
Family and Environment Teasing	-0.033	-0.034	-0.221 <sup>a</sup>
Physical Appearance Teasing	0.226 <sup>a</sup>	0.012	-0.328 <sup>a</sup>

<sup>a</sup> Correlations significant at the level of 0.01; BMI: Body Mass Index; CDI: Children's Depression Inventory; PHCSCS: Piers-Harris Children's Self-Concept Scale; CATS: Child-Adolescent Teasing Scale

**Table 4:** Regression analysis of factors influencing exposure to teasing

Factors	Beta	SE	Wald	P	OR (95% CI)
Income: moderate (vs very good)	0.817	0.182	20.229	0.001	2.26 (1.58-3.23)
BMI: Overweight (vs normal weight)	1.886	0.524	12.941	0.001	6.59 (2.36-18.43)
Academic achievement in the previous year: awarded to a certificate of achievement / passed the class without resitting (vs awarded to a certificate of appreciation)	0.519	0.154	11.355	0.001	1.68 (1.24-2.27)

Beta: Regression Coefficient; CI: Confidence Interval; SE: Standard error; OR: Odds Ratio; BMI: Body Mass Index

According to the results of logistic regression analysis, the odds of being teased were 2.26 times higher for those with a moderate income level compared with those with a very good income level (CI: 1.58-3.23), overweight participants were exposed to teasing 6.59 (CI: 2.36-18) times more than were normal weight participants and those who were awarded to a certificate of achievement / passed the class without resitting were exposed to teasing 1.68 (CI: 1.24-2.27) times more than were those who awarded to a certificate of appreciation (P=0.001) (Table 4).

#### 4. Discussion

Teasing is an important problem that impairs the development of children and adolescents which shows its effect mostly in areas such as body image, academic achievement, sports activities, socialization (5, 20, 23). In the present study, the prevalence of teasing behavior in adolescents aged

11-14 years was determined, and the levels of self-confidence and depression in those who were and were not subjected to teasing were compared.

The results of various studies have revealed that the prevalence of teasing is not low (2, 4, 18, 30). The majority (76.5%) of the adolescents were subjected to teasing, and that those who were subjected to teasing were in the 10-11 age group (mostly 6<sup>th</sup> graders). This rate is similar to other studies conducted in different countries (5, 6). In some countries, the rates change between 41%-59% (4, 18, 31-33). All these results indicated that preadolescents and adolescents are exposed to teasing no matter what countries they are from or sample groups they are in, which indicates that teasing is an important public health problem, and that it is necessary to take measures against teasing. In initiatives and programs to be performed in the future, preadolescents should be considered as an at-high risk group.

Interestingly, in the present study, as in previous research (4, 18), there was no correlation between teasing and gender. While some studies reported that men are more likely to be exposed to teasing (34, 35), particularly in areas such as sports activities and academic achievement (34-36), some studies reported that girls are exposed to teasing more due to being overweight (10-12, 14, 19, 35). Girls are exposed to teasing more than boys (6, 9), and men who have been exposed to teasing before the age of 16 are more dissatisfied with their physical appearance (6). The perception of being ridiculed may be felt more in girls due to social pressure on physical appearance. Although there are no differences between boys and girls in terms of being exposed to teasing in the present study, in the literature, this result varies from one country to another or from one sample to another; while in some studies, females are exposed to teasing more, in some studies males are exposed to teasing more (6, 9-12, 14, 19, 34-36). These differences may have been stemmed from the differences between the characteristics of the study samples such as female/male ratios, age groups, weight status. Investigation of gender-related teasing issues in future studies can contribute to the development of gender-based anti-teasing programs.

Adolescence is an important time for growth, and body satisfaction can play a large part in an individual's sense of self. Being overweight or underweight and being dissatisfied with the physical appearance increases a child's/ adolescent's exposure to peer teasing (10, 35). Higher body mass index (BMI) causes the person to suffer weight-related teasing (19, 33). For instance, the results of the regression analysis showed that overweight adolescents were subjected to teasing more. This result was consistent with the results of studies which had similar sample groups (4, 9, 10, 12, 18, 37). In this current study, it was also found that the overweight adolescents were exposed to teasing 6.59 times more than were the normal weight adolescents. This rate is much higher than the rates in other studies (37, 38). That the rate in this study was high was probably due to the fact that one out of every two participants was overweight / obese, that they suffered teasing more as a result of higher BMI which causes a decrease in self-confidence and that they were mostly preadolescents who experience physical and mental changes more intensely.

As in some studies in the literature, the level of

exposure to teasing increased as the level of self-confidence decreased (15). Teasing suffered in all the domains of CATS (Personality and Behavior Teasing; Family and Environment Teasing; School-Related Teasing; and Teasing About My Body) reduced the adolescents' self-confidence levels. It was also observed that the participants were subjected to physical appearance-related teasing more as their BMI values increased. The results of other studies were consistent with those of the present study. It was reported that overweight students exposed to teasing had lower levels of self-esteem (4, 16, 30, 39), that their self-confidence levels decreased (13), and that their perceptions of physical appearance were negative (39). Public health-related attempts often focus on weight loss and behavior changes to improve mental health (22). However, focus should also be placed on attempts aiming to reduce the potential impact of teasing on the development of depression by holding anti-teasing programs for overweight and obese youth. There is also a need for attempts to be carried out through cooperation between the family, school health workers and clinicians on how self-esteem and body satisfaction can be increased in adolescents subjected to teasing.

In the literature, it was reported that depression is associated with teasing (6, 20, 21), and that the depression levels are higher in overweight adolescents exposed to teasing (8, 15, 30, 39); however, in the present study, no relationship was found. Only adolescents with low self-confidence had high depression scores. The scale used in the present study is a self-assessment tool, whose use in children and adolescents was proved valid and reliable. However, the researchers observed that the length of the scale adversely affected the participating adolescents' concentration while they filled in the tool, and thus they gave the participants extra time to fill in the tool. It was also observed that some of the items were not fully understood by some of the adolescents. Thus, during the data collection, explanations were made so that the participants could understand the statement(s) better. Therefore, it is recommended that the relationship between teasing and depression should be investigated using different (e.g., shorter) assessment tools in the future.

In the present study, the participants who perceived their economic status as moderate were subjected to teasing 2.26 times more than were

the participants who perceived their economic status as good. As in other studies (18, 33), in the literature, the perception of income level is an important variable for teasing. It can be thought that economic inequalities are reflected in the physical appearance of children (clothing style, brand use), leading to the formation of social classes among children and thus teasing.

Another variable whose relationship with teasing has not been investigated in detail in the literature is the academic achievement of the adolescent. In the present study, the participants who thought that they themselves and their families perceived their academic achievement as bad or moderate were exposed to teasing more. The participants who perceived their academic achievement in the previous year as low (i.e., those who were awarded to a certificate of achievement/passed the class without resitting were exposed to teasing 1.68 times more. School performance was significantly associated with teasing (16, 23). It was found that self-esteem of girls who were exposed to teasing due to low academic achievement was also low (16). It is recommended that academic achievement and income, as a socioeconomic factor, should be considered as risk factors for teasing in adolescents and that these two variables should be investigated in detail in future studies.

The review of the literature on teasing revealed that studies conducted on the child / adolescent group focused on weight loss and body satisfaction related teasing (4, 11, 30, 39). That the measurement tool (CATS) used in the present study provided data on school, friends, family and physical appearance, and that the relationship of teasing was investigated with both self-confidence and depression distinguish the study from other studies and make it strong. In the present study, as in other studies (7, 11), CATS was found to be a valid and reliable self-report assessment tool in measuring teasing experienced in the school environment. The more widespread use of the scale may be effective in detecting and initiating new programs for adolescents at risk.

#### 4.1. Limitations

High participation and response rate, large sample and use of standard measurement tools are the strengths of this study. However, its cross-sectional design was an obstacle to

drawing conclusions about causality. There is a need for longitudinal studies to determine the casual pathways to show the association between sociodemographic risk factors and teasing. The results of the study cannot be generalized to the population due to its cross-sectional design.

Another limitation of the study was that all of the measures required self-reported responses from the students. Finally, in the present study, the variables related to teasing experienced by the participants in the social environment were not investigated. Therefore, it is recommended to carry out studies in order to determine exposure to teasing in the out-of-school environment.

## 5. Conclusions

This study showed that teasing was a serious problem in adolescence and that it negatively affected self-confidence of adolescents. These findings supported those programs aiming to gain children and adolescents skills to cope with bullying and teasing should be carried out, families' awareness of this issue should be raised, and anti-teasing policies and programs should be adopted and put into practice. In addition, the findings highlighted the importance of implications for school-based interventions. In schools, attempts carried out by school health workers, the school administration and guidance and psychological counseling units to strengthen adolescents will increase their commitment to school and academic achievement and will be useful in preventing serious problems likely to occur in the following years. Nurses, on the other hand, can take nursing initiatives to prevent teasing and bullying, and take an active role in anti-teasing programs for preventing and reducing the negative impact of teasing on children/ adolescent.

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## Author Contribution

Medine Yilmaz: Contributed substantially to the conception and design of the study, methodology, data collection, and supervision; critically reviewed the manuscript for important

intellectual content. Feyza Dereli: Contributed substantially to the study design, data collection, and formal analysis; drafted the initial version of the manuscript. Gülçin Uyanık: Contributed substantially to the study design, data collection, and formal analysis; drafted the initial version of the manuscript. Gamze Ağartıoğlu Kundakçı: Contributed substantially to the methodology and data collection; drafted sections of the manuscript. Jülide Gülizar Yıldırım: Contributed substantially to the methodology and data collection; critically reviewed the manuscript for important intellectual content. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work, including the accuracy and integrity of any part of the study.

**Conflict of interest:** None declared.

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### Ethical Approval

The Ethics Review Board of Izmir Katip Celebi University Non-interventional Research Ethics Committee, approved the present study with the code of IR: 91 and permission from the Provincial Directorate of National Education were obtained. Also, written informed consent was obtained from the parents.

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