

## Self-Regulation and Dimensions of Parenting Styles Predict Psychological Procrastination of Undergraduate Students

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**Objective:** Previous research has linked self regulation and parenting styles separately to academic procrastination. This article investigates the impact of the dimensions of parenting styles, behavioral self regulation and short term self regulation on procrastination of students.

**Method:** A sample of 249 adolescents (174 females and 75 male) aged 19 - 21 years completed measures of Parent as Social Context Questionnaire-Adolescent Report, Self-regulation Questionnaire (SRQ), Adolescent Self-Regulatory Inventory (ASRI) and Procrastination Tendency scale. Correlation coefficient indicated that in contrast to harsh or unsupportive parenting (rejection, chaos, and coercion), authoritative parenting (warmth, structure, and autonomy support) was inversely related with procrastination.

**Results:** The results of hierarchical multiple regression analyses showed a clear negative relationship between a students' short term self regulation, dimensions of parenting styles (structure and warmth) and procrastination consistent with the literature.

**Conclusions:** Surprisingly, in contrast to behavioral self regulation of Miler & Brown, short term self regulation was found to be negatively related to procrastination.

**Keywords:** Education, Educational psychology, Parenting, Self concept, Students

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The issue of procrastination is nowadays a common phenomenon among students particularly at college and university levels. For example, estimates indicate that 80%–95% of college students engage in procrastination (1, 2). Approximately 75% of college students consider themselves procrastinators (3) and almost 50% procrastinate consistently and problematically (4- 6). The least amount of procrastination is considerable with students reporting that procrastination typically occupies over one third of their daily activities, often enacted through sleeping, playing, or TV watching (7). These percentages appear to be on the rise (8). In addition to being endemic at college, procrastination is also prevalent in the general population, chronically affecting some 15%–20% of adults (9). However, the positive form of procrastination, as the subsequent historical analysis indicates, is secondary in usage.

A common form of academic procrastination among students is postponed until the last minute to turn in papers or to study for an examination (10). Solomon and Rothblum (6) defined procrastination as the acts of unnecessarily delaying a task until the point of some uneasiness. Ellis and Knaus (1) perceive procrastination as the desire to avoid an activity, the promise to get it late, and the use of excuse making to justify the delay and avoid blame. Thus, Procrastination comprise of the intentional delay of an

intended course of action, in spite of an awareness of negative outcomes (11) and it often results in unsatisfactory performance (6,12). researchers who conducted studies on procrastination at universities, suggest that academic procrastination is related to lower levels of resourcefulness, self-denigration, self-regulation, academic self-efficacy, and self-esteem, and is also associated with higher levels of self-consciousness, self-handicapping, anxiety, depression, stress, and illness (13- 18).

Among all of the variables that have been investigated in relation to academic procrastination, self-regulation, self-efficacy, and self-esteem have received the most attention (19-23) with most studies showing significant inverse relationships with procrastination.

Much of the recent research views procrastination as a function of low levels of self-regulation (22, 11, 24).

Wolters (24) explored procrastination's relationship to self-regulated learning and found that metacognitive self-regulation was the second strongest predictor of procrastination after academic self-efficacy beliefs. In summary, there is a strong body of evidence that lower levels of self-regulating behaviors are related to higher levels of procrastination, and that self-regulation is one of the keys to understanding procrastination.

Procrastinators may feel that their actions will not change their situation, and thus they concentrate instead on managing their emotional reactions to the situation. Consequently, to cope, they tend to use an

emotion-oriented rather than a task oriented style (25,26). A particularly well-researched form of this emotion focused, dysfunctional self-regulation is self-handicapping, that is, placing obstacles that hinder one's own good performance.

Flett et al. (26) inferred that "... procrastination may be a response to the expectation that parents will respond to self-characteristics in a harsh and controlling manner"(p. 128). Results from both clinical observations (26) as well as empirical studies (e.g. Ferrari& Ferrari) have provided evidence for the role of parental influence in the development of procrastination, the irrational tendency to delay intended tasks (14). Similarly, parenting that is characterized by stern inflexibility and over control has been found to correlate with a measure of decisional procrastination for late adolescent females (27).

The relation between parenting and procrastination remains largely uninvestigated. In only two studies researchers directly have examined the relations between parental authority and the development of indecision (27) or chronic avoidant procrastination (28). They reported that scores on fathers' authoritarianism accounted for approximately 10% of the variance in both decisional and avoidant procrastination. However, the ability to generalize these findings is limited by the fact that only females were studied.

Despite the correlational evidence, there is little known about the underlying nature of the relation between dimensions of parenting styles and procrastination. Conceptually, both direct and indirect links seem plausible. A direct link between parenting and procrastination would suggest that parenting styles have a primary influence on the development of procrastination. In support of this conception, there is a great deal of empirical evidence to suggest that parenting variables have a significant effect on the development of children's personality traits. For example, a parenting style characterized by acceptance and involvement, as well as strictness and supervision (i.e. authoritative parenting), is associated with children who tend to be independent, self-assertive, friendly with peers, and cooperative with parents (29) as well as intellectually and socially successful with a strong motivation to achieve (30).

Lamborn et al. (31) found that children of authoritative parents feel more competent, have higher self-esteem, and are more mature than other children. In contrast, the authoritarian parenting style is associated with children who tend to be more fearful, moody, hostile, and vulnerable to stress (32). Furthermore, conflicts between parents and children appeared to be less frequent and less intense in authoritative families than authoritarian families. Authoritative parenting was associated with conformity of mothers with setting rules on conventions; on the contrary, permissive parenting was characterized with lack of interest in setting rules on these issues (33). As such, given that parenting directly influences the development of many

different traits, procrastination may also be directly affected by parenting styles. Pychyl et al. (34) examined gender differences in the relations between procrastination, parenting style and self-worth in early adolescence. Interestingly, they reported that there were significant interactions of procrastination with parenting styles, adolescent gender and self-worth. Furthermore, in females only, the effects of maternal authoritative and authoritarian parenting on procrastination were mediated through self-system, whereas paternal parenting had a direct relation with procrastination.

The study reported here attempts to extend previous research by exploring the application of personal and family variables to procrastination. Empirical and theoretical work has indicated that higher levels of self-regulation are associated with greater social and cognitive competence, whereas poor self-regulation is linked to involvement in risky behavior. Theory posits that authoritative parenting fosters self-regulation and adjustment in childhood and adolescence, but little empirical work has examined these potential influences on procrastination. The present study was designed to find out the correlation between procrastination and dimensions of Parenting styles, short term self-regulation and behavioral self-regulation and in addition to examine whether gender difference exist in procrastination among the students in a population of Iranian undergraduate students. Furthermore, regarding the indirect relation between self-regulation and procrastination that has been demonstrated in past research as mentioned above, we hypothesized that self-regulation would mediate, at least in part, the relation between parental styles and procrastination.

## Materials and Method

### *Participants*

The participants included 249 first-year undergraduate students of University of Tabriz, Iran. A total of 174 females and 75 males served as respondents.

### *Measure*

Participants completed a questionnaire package that contained a series of self-report questionnaires, including: 1) Procrastination Tendency scale, 2) Self-Regulation Questionnaire, 3) Parent as Social Context Questionnaire, and 4) Adolescent Short term Self-Regulatory Inventory.

### *Procedure*

This research was conducted in the winter term of the 2009 academic year. The head of the related department permitted the students to participate in the study. Then, the participants completed the questionnaires on their own , and handed them to researchers directly.

*Procrastination Tendency scale* (35) is a16-item procrastination scale that was planned to measure "the tendency to waste time, as well as tendencies toward

indecisiveness and poor time management in the completion of tasks." In producing total scores, we reversed the rating scale, so that higher scores indicated greater procrastination. Total scores are created by summing the 16 items and thus range of from 16 to 64. Tuckman (35) demonstrated the internal consistency of the procrastination scale and reported significant associations between scale scores and a behavioral measure of procrastination. Recent studies have used Tuckman's measure with the results showing high reliability ( $\alpha = .90$ ). In addition, Howell et al. (16) reported significant associations between Procrastination Scale scores and behavioral measures of procrastination ( $r$ 's = .54 and .38, respectively). Procrastination was measured using a 4-point scale, anchored at "1" by "That's not really me" and at "4" by "That's me for sure," with a possible total score of 64. Examples of items on the procrastination measure were as "I needlessly delay finishing jobs, even when they're important," and "I postpone starting on things I don't like to do."

*Self-Regulation Questionnaire* (SRQ; 36) is a 63-item questionnaire that was designed to assess behavioral self-regulation capacity across the seven processes of self-regulation. Previous research indicated that the SRQ has a single factor that represents overall self-regulation capacity. The SRQ is internally consistent ( $\alpha = .91$ ) and temporally stable over two days,  $r = .94$ . Test-retest reliability for the total SRQ score was high ( $r = .94$ ,  $p < .0001$ ). SRQ also has shown strong convergent validity with concomitant measures. Moreover, Aubrey et al. (36) reported SRQ score to be significantly and inversely correlated with volume of alcohol consumption per occasion ( $r = -.23$ ,  $p = .04$ ) and with negative consequences of drinking ( $r = -.46$ ,  $p < .0001$ ).

However, based on the results of Carey, Neal and Collins (37), we decided to conduct a principal factor analysis on the 63 SRQ items. The results of factor analyses produced two factors with eigen values greater than 1. Likewise, the scree test supported a two-factor solution. The two-factor solution accounted for approximately 41.41% of the variance. The results of the factor analysis revealed that self-regulation scores loaded onto two factors: 1) a "formulating a plan and implementing the plan" factor (24.03% of variance); and 2) a "searching for options assessing the plan's effectiveness" factor (17.39% of variance). For items that were classified as single-loading, 13 loaded significantly on the first factor and 9 loaded significantly on the second factor. The two factors correlated at  $r = .43$ . Items were scored on a 1–5 scale (strongly disagree–strongly agree), and summed to create a total score.

*Parent as Social Context Questionnaire- Adolescent Report*: Dimensions of parenting (warmth, rejection, structure, chaos, autonomy support, and coercion) were measured using a 48-item scale (38). Scores for each subscale were computed by summing responses to each subscale separately. The internal-consistency

reliabilities for all scales were satisfactory, ranging from .78 to .88. The correlations between the six dimensions of adolescent report of parenting and selected adolescent outcomes showed that the positive features of parenting correlate positively with adolescents' reports of positive academic outcomes such as academic competence, commitment to school, social competence, mastery, and self-worth; they correlate negatively with adolescent substance use and problem behaviors. Likewise, the negative features of parenting correlate negatively with adolescents' positive academic outcomes and positively with adolescent reports of substance use and problem behavior. These correlations provide initial support for the validity of the adolescent-report assessment of these six dimensions of parenting. In the present sample, reliabilities for parent self-reports  $\alpha = .72$ , .86, .87, .89, .88, and .67 for the warmth, structure autonomy, coercion, rejection, and autonomy subscales respectively.

*Adolescent Short Term Self-Regulatory Inventory* (ASSRI; 40) is a 13-item measure that assesses components of self-regulation (i.e., monitoring, activating, adapting, persevering, or inhibiting). Questions included "I usually do what I am supposed to do more quickly when someone is pressuring me," "When I'm bored I fidget or can't sit still," and "I can start a new task even if I'm already tired." Confirmatory factor analyses demonstrated that the internal consistency of short-term factors was satisfactory. Requirements for concurrent and construct validity were met. Moilanen (39) demonstrated incremental validity, as the inclusion of the long-term factor with a comparison questionnaire significantly increased the proportion of explained variance in adolescent-reported parental warmth, externalizing and prosocial behavior. The internal consistency of the ASSRI in this sample was .71.

### Analysis

SPSS 17 was used to process the quantitative data with computer. Linear regression was run with procrastination tendency as the criterion variable, and short self-regulation, dimensions of parenting, and behavioral self-regulation as the predictor variables. Furthermore, path analysis was carried out to study the nature of the interrelations between dimensions of parenting styles, short term self-regulation and procrastination. The goal of this analysis was to explore the direct and indirect effects of parenting styles, and short term self-regulation on academic procrastination.

### Results

The reliability indices of the measures used in this study were satisfactory, and ranged from .67 (rejection) to .89 (Chaos). Table 1 demonstrates means, standard deviations, and reliability coefficients for procrastination and subscales of behavioral self-regulation, short term self-regulation and parenting.

*Procrastination – Gender*

In order to examine gender difference on academic procrastination, an independent sample t test was performed. There was no significant difference between males (M = 93.4, S.D. = 10.73) and females (M = 91.44, S.D. = 11.84) in procrastination scores (p<.001).

*Correlation analysis*

The corresponding results of the correlation analyses are presented in Table 2. The results revealed that the relationships among procrastination and the major variables were all significant (p < .001). As predicted, paternal authoritative parenting (warmth, structure, and autonomy support) was inversely related with procrastination, suggesting that students whose parents' had a supportive style, reported the lowest levels of procrastination. In contrast, a significant positive relation was found between harsh or unsupportive parenting (rejection, chaos, and coercion) and procrastination. Furthermore, students who stated higher levels of subscales of short term self-regulation

and behavioral self-regulation, reported lower levels of procrastination. However, no associations emerged between formulating a plan and implementing the plan scores and measures of warmth and rejection, chaos, autonomy and coercion. The component of searching for options to assess the plan's effectiveness scores did not correlate with warmth and structure ; it was positively related with structure, chaos, autonomy and short term self-regulation.

*Hierarchical multiple regression analysis*

Hierarchical multiple regression was used to further examine the relationship between procrastination and the other variables. We chose this analysis strategy to examine how six dimensional parenting styles predicted procrastination. We were also interested in finding out if self-regulation accounted for additional procrastination variance beyond the variables most often shown to be associated with procrastination (short term and behavioral self-regulation, and dimensions of parenting styles).

**Table 1. Means, standard deviations, and reliabilities for procrastination and predictive variables its**

Variables	M	SD	α
Procrastination	92.03	8.20	.81
Short term self regulation (Impulsive control)	30.39	4.63	.71
Behavioral self regulation:			
1) Formulating a plan and implementing the plan	31.81	4.95	.80
2) Searching for options assessing the plan's effectiveness	27.26	4.37	.81
Parenting styles:			
Warmth (supportive control)	30.50	6.1	.72
Structure (behavioral control )	28.54	6.25	.86
Autonomy (psychological autonomy)	30.40	6.50	.87
Chaos (permissiveness)	31.54	6.36	.89
Coercion (psychological control)	26.54	5.25	.88
Rejection (active dislike)	32.82	6.24	.67

**Table 2. Pearson inter-correlations among procrastination, parenting style, and self regulation**

Variable	1	2	3	4	5	6	7	8	9	10
Parenting style:										
1) warmth	1									
2) rejection	-.42**	1								
3) structure	.60**	-.37**	1							
4) chaos	-.42**	.63**	-.51**	1						
5) autonomy	.42**	-.63**	.51**	-.42**	1					
6) coercion	-.32**	.36**	-.25**	.48**	-.32**	1				
7)impulsive control	.21**	-.21**	.25**	-.24**	.17**	-.16*	1			

\*p < 0.05, \*\*p < 0.01

**Table 3. Summary of hierarchical regression analysis for variables predicting procrastination in the study (N = 249)**

Variable	B	SE	$\beta$
<i>Step 1</i>			
structure	-.673	.115	-.352***
<i>Step 2</i>			
structure	-.621	.113	-.325***
Short term self regulation	-.666	.174	-.225***
<i>Step 3</i>			
structure	-.405	.138	-.212***
Short term self regulation	-.687	.172	-.232***
warmth	-.381	.143	-.191**

Note.  $R^2 = .23$  ( $p < .001$ ) for Step 1;  $\Delta R^2 = .29$  ( $p < .001$ ) for Step 2;  $\Delta R^2 = .30$  ( $p < .001$ ) for Step 3.  
 \*\*  $P < .01$     \*\*\*  $p < .001$

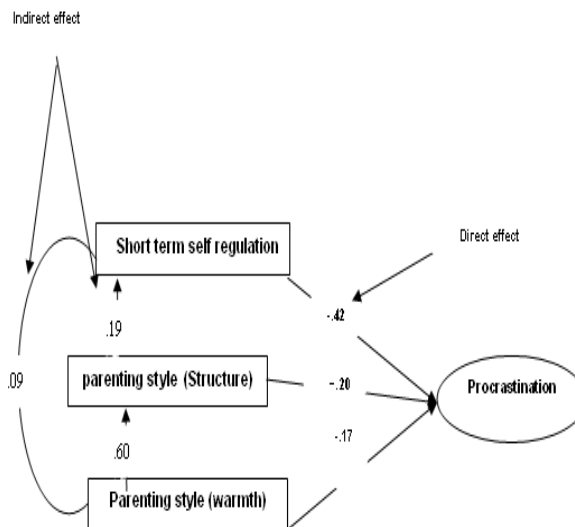
As presented in Table 3, the first step displayed that structure ( $\beta = -.35$ ,  $p < .001$ ) accounted for a modest but significant amount of procrastination variance,  $R^2 = .23$ ,  $F(1, 243) = 70.92$ ,  $p < .001$ . In the second step, entering structure and short term self regulation resulted in an increase in the amount of explained variance,  $\Delta R^2 = .29$ ,  $F(2, 243) = 48.43$ ,  $p < .001$ . Structure ( $\beta = -.33$ ,  $p < .001$ ). Short term self regulation ( $\beta = -.23$ ,  $p < .001$ ) was the only significant predictor of procrastination. Behavioral self-regulation skills (formulating a plan and implementing the plan and searching for options assessing the plan's effectiveness) was a weak predictor of procrastination when short term self regulation was entered into the regression equation. In the third step, entering self-regulation resulted in a small increase in the explained variance,  $\Delta R^2 = .30$ ,  $F(3, 243) = 34.32$ ,  $p < .001$ . Structure ( $\beta = -.21$ ,  $p < .001$ ), short term self regulation ( $\beta = -.23$ ,  $p < .001$ ) and warmth ( $\beta = -.19$ ,  $p < .01$ ) remained significant individual predictors of procrastination.

**Path analyses**

The results indicated that short term self regulation, structure and warmth were directly associated with procrastination. In addition, dimension of parenting (structure) was significantly related to short term self regulation, which in turn predicted academic procrastination. In this model, warmth was not associated with structure, but did have a direct effect on procrastination. In other words, paternal warmth uniquely predicted procrastination beyond the contributions of short term self regulation and structure. A pruned path diagram (i.e. with only significant paths indicated) with standardized beta weights for procrastination is displayed in Figure 1.

**Discussion**

The main goal of our study was to increase our understanding and knowledge about the procrastination of college students. For this purpose, we explored the predictors of procrastination in a sample of students at University of Tabriz.



**Figure 1. Path analysis coefficients for short term self regulation, warmth, structure parenting style, and procrastination.**

The results suggested that procrastination does not differ with respect to gender variation. This is consistent with previous findings that academic procrastination does not change according to gender (40- 42). The gender differences concerning procrastination behavior are considerably difficult to envisage (43).

Another finding of the research was that authoritative parenting (warmth, structure, and autonomy support) was positively associated with better short term self-regulation (e.g., impulse control), while unsupportive parenting (rejection, chaos, and coercion) was negatively associated with short-term self-regulation. The hierarchical multiple regressions showed that supportive control (warmth), behavioral control (structure) and short-term self-regulation were negatively associated with academic procrastination. In other words, youth with better short-term self-regulation and higher levels of perceived supportive parenting had lower levels of procrastination, while unsupportive parenting failed to explain academic procrastination. These results are consistent with previous research which indicated that procrastination tendencies are related to dysfunctional impulsivity. It is also argued that procrastinators compared to non-procrastinators were increasingly distracted or unable to concentrate on tasks because of situational demands or attention deficits. Thus, when working under pressure, chronic procrastinators may experience self-regulation failure of performance speed and accuracy. Chronic procrastinators tend to fail to regulate their performance skills effectively to get the best mix of speed and accuracy when they are under time constraints. Chronic procrastinators demonstrated poor performances under pressure instead of doing well. The popular notion of ‘working best under pressure’ may

not be so true for frequent procrastinators (22). Clearly, further experimental research is needed to explore these possibilities.

Those parenting behaviors that have been previously linked to self-regulation were included in the current study and they include parental warmth, psychological control, and behavioral control. High levels of warmth and behavioral control are thought to encourage the development of self-regulatory capacities, while high levels of psychological control are believed to discourage their development (23, 44).

Parental warmth hypothetically decreases negative arousal, which can interfere with individuals' self-regulatory abilities (44). It is through the imposition of external behavioral control that children and youth internalize parental and societal values and norms for behavioral control (45). The recent studies with other measures of self-regulation have supported these theoretical assertions. For example, in a sample of Australian high school-aged youth, Purdie et al. (46) linked parental involvement to academic and prosaically self-regulation.

Moreover, the short-term self regulation factor was positively correlated with parental warmth and structure and negatively correlated with rejection, chaos, coercion psychological control. This pattern is consistent with other studies using different measures of self-regulation (47, 39).

Several studies have examined the effects of parental autonomy support on adolescent development from a self-determination theory (SDT) perspective. For example, Soenens and Vansteenkiste (47) showed that the parents' autonomy support was associated with adolescents' perceived autonomy in the academic context, which was, in turn, associated with greater academic performance. In particular, Grolnick et al. (48) reported that children of more autonomy-supportive and involved parents showed less of an increase in acting-out and learning problems across the transition. Further, these children did not show the same declines in self-regulation, control understanding, and grades compared to the children of more controlling and less involved parents showed. Thus, parental autonomy support and involvement appear to help children navigate the difficult transition to junior high that places so many children at academic risk.

Several studies used different theoretical perspectives and terminology support for the importance of autonomy support, structure and involvement for adolescent adjustment. Several studies conducted within Steinberg's laboratory have used Baumrind's (29) typology of parents (i.e. authoritarian, authoritative, and permissive) to examine relations between parenting and children's self-regulation and achievement. In one study, three components of these parenting types – acceptance, psychological autonomy, and behavioral control (akin to involvement, autonomy support versus control, and structure, respectively) – were found to be related to adolescents' sense of autonomy and healthy work orientation, which were

then associated with school success. Barber's group has used the concept of psychological control to describe parents' intrusion into the psychological and emotional life of children through such behaviors as love, withdrawal and guilt evoking.

Behavioral control refers to parents' attempts to manage or control children's behaviors and is most frequently operationalized as parents' knowledge of their children's whereabouts and activities. Psychological control has been linked to more withdrawn symptoms in adolescence, whereas behavioral control has been associated with fewer acting-out problems. These relations have been demonstrated longitudinally (49) and across a variety of cultures (50). In addition, Patock-Peckham et al. (51) observed self-regulation mediated the pathway from a permissive parenting style to perceived drinking control, which, in turn, mediated the pathway from self-regulation to alcohol use and problems. Finally, self-regulation mediated the positive pathway from an authoritative mother to perceived control over drinking for women.

In summary, research across a wide range of ages and cultures suggests the importance of three dimensions of parenting – autonomy support, involvement, and structure – for children and youth related self-regulation, in turn affecting procrastination. In other words, Parents could help to prevent procrastination by developing study skills in their children that would allow them to avoid distractions (e.g., studying in comfortable, quiet settings, keeping their desk neat, fulfilling a work plan at home, turning off the TV and the cellular phone, etc.). These aspects could help to increase students' commitment to the tasks and to teach them to postpone gratification, essential dimensions in the promotion of will power competences and prevention of academic procrastination. At the same time, achievement expectations can be induced in procrastinators; for example, by performing work plans that include intermediate goals, an adequate work setting, and assigning enough time to task performance. These learning strategies, frequently used in cognitive behavioral interventions, are specifically indicated for efficient time management, but they can have a significant impact on preventing academic procrastination as well (52). The sample used in this study may not be representative of the population, as a majority of the respondents were freshman students. A larger sample size may also be needed because of the amount of variables being tested. Further research should be done to account for more of the variance found in procrastination. Procrastination is a complex behavior and other factors (self efficacy, fear of failure, poor time management, low self-esteem, academic anxiety and etc) may be associated with it that was not examined in this study. Furthermore, the data collected in these two studies are correlational, and it is misleading to make claims of causality based on the observed relationships. It is possible, for example, that

procrastinating behaviors cause a lowering of self-regulation, and not the reverse as is implied in our study.

### Conclusion

Results from the present study revealed a significant negative relation between supportive control (warmth), behavioral control (structure) and short-term self-regulation and procrastination. Our findings suggest that self-regulation and supportive-behavioral control may be critical for understanding the nature of procrastination. Thus, this finding may provide a valuable insight for counselors who are providing services to negative procrastinators. Further, remediation may be enhanced through a better understanding of this relationship.

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