

Decision Making and Problem Solving in Middle and Late Adolescence

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ABSTRACT

Decision making is the process of choosing what to do by considering the possible consequences of different choices. Problem-solving skills are utilized in the decision-making process and refer to specific cognitive abilities, some of which include assessing probability and thinking systematically or abstractly. The main purpose of this research was to identify the decision making and problem solving in male and female adolescents during middle and late adolescence. The data was collected purposively from male and female adolescents residing in Gandhinagar and Mehsana district of Gujarat State with the help of a sub scale of Social Skill Rating Scale (SSRS) developed by Vishal Sood, Arti Anand and Suresh Kumar. Two-way ANOVA was used to analyze the data by applying 2x2 factorial design. No significant differences are found between male and female adolescents ($F= 0.001$) as well as between middle and late adolescence group ($F= 0.11$) on decision making and problem-solving skills. The interaction effect between gender and adolescence period also found to be non-significant ($F=1.65$). However, all adolescents exhibit moderate or average decision making and problem-solving skills.

Keywords: *Adolescence period, Gender, Decision Making and Problem-Solving Skills*

Decision making and problem-solving skills means the tactfulness to handle a situation cleverly, possession of generally positive and constructive attitudes in developing long range plans and goals. According to Kreitner (2007) decision making is a process of identifying and choosing alternative courses of action in a manner appropriate to the demand of the situation. American Psychology Association (2018) defines it as a cognitive process of choosing between two or more alternatives, ranging from the relatively clear cut (e.g., ordering a meal at a restaurant) to the complex (e.g., selecting a mate).

Adolescents are often thought to be excessive risk-takers, especially in social contexts. Since adolescents' risky decisions constitute a major health hazard and can have long term consequences, several attempts have been made to understand the determinants of adolescent social risk-taking (Ciranka, Simon and van den Bos, Wouter, 2019). Many findings support the idea that adolescents are more inclined toward risky behavior and risky

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decision making than are adults and that peer influence plays an important role in explaining risky behavior during adolescence.

An experimental study carried out by Gardner and Steinberg (2005) concerning peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: Analyses indicated that (a) risk taking and risky decision making decreased with age; (b) participants took more risks, focused more on the benefits than the costs of risky behavior, and made riskier decisions when in peer groups than alone; and (c) peer effects on risk taking and risky decision making were stronger among adolescents and youths than adults.

Verma and Bansal (2019) discovered the decision making among adolescents in relation to peer pressure. The results concluded that the decision making is negatively correlated to peer pressure, i.e. as the peer pressure in adolescents' increases, their decision-making ability decreases. A significant difference in the values of decision making at low and high peer pressure has been also reported i.e. the adolescents who have more peer pressure have lower decision-making ability as compared to the adolescents with low peer pressure.

Albert and Steinberg (2013) suggested that in adolescence, a time when individuals spend an increasing amount of time with their peers, peer-related stimuli may sensitize the reward system to respond to the reward value of risky behavior. As the cognitive-control system gradually matures over the course of the teenage years, adolescents grow in their capacity to coordinate affect and cognition and to exercise self-regulation, even in emotionally arousing situations. These capacities are reflected in gradual growth in the capacity to resist peer influence.

A metacognitive analysis of decision making in adolescence done by Ormon et al. (1991) indicate that middle adolescents reported a more competent decision-making style than early adolescents. Significant correlations were found between metacognitive knowledge of decision making, self-reported decision-making style and performance on the decision scenario task. By middle adolescence understanding of what is involved in the activity of decision making is well developed. This growth in understanding, accompanied by changes in social domains, plays a part in decision execution and style.

Altaf et al (2021) demonstrated that parenting styles play a distinctive role especially authoritarian parenting style to determine the adaptive decision making and firm self-concept among adolescents. They also found out that gender moderates the relationship between authoritarian parenting styles and hypervigilance as well as procrastination. Moreover, gender also moderates the relationship between authoritarian parenting and self-concept. Conclusion.

Duijvenvoorde et al. (2010) compared adolescents (13–15 years) performance on matched affective and cognitive decision-making tasks, in order to determine (1) their performance level on each task and (2) whether performance on the cognitive task was associated with performance on the affective task. Both tasks required a comparison of choice dimensions characterized by frequency of loss, amount of loss, and constant gain. Results indicated that in the affective task, adolescents performed sub-optimally by considering only the frequency of loss, whereas in the cognitive task adolescents used relatively mature decision rules by considering two or all three choice dimensions. Performance on the affective task was not related to performance on the cognitive task.

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Jaffee and D’Zurilla (2009) examined the role of social problem solving in the relationship between personality and substance use in adolescents. Results showed that the dimension of rational problem solving (i.e., effective problem-solving skills) significantly mediated the relationship between hopelessness and lifetime alcohol and marijuana use. The theoretical and clinical implications of these results were discussed.

Oldershaw A, Grima E, Jollant F, et al. (2009) found out poor decision making in adolescents who currently self-harm but not in those with previous history; improvement in decision-making skills may therefore be linked to cessation of self-harm. Depressed adolescents who do and do not self-harm may have distinct characteristics.

Fulya and Oguzhan (2013) examined decision-making and problem-solving as a well-being indicator among adolescents. The results showed that problem solving and self-esteem in decision making significantly predict subjective well-being and its dimensions. The results also revealed that vigilance style is a significant predictor of subjective wellbeing and positive affect while panic style is a significant predictor of negative affect.

The prime aim of this study is to identify the impact of adolescence period and gender on the decision making and problem-solving skills of adolescent. The adolescence period and gender were considered as independent variable of the study. To what extent the middle and adolescence period can impact on decision making and problem-solving skills of the adolescents was a first objective of this study as well as the study conducted to fulfill the second objective of the study that how the gender play a significant role in development of decision making and problem-solving skill in adolescents.

Objectives

The prime objectives of the study are as under:

- To identify the impact of adolescence period on decision making and problem-solving skills of adolescents.
- To identify the impact of gender on decision making and problem-solving skills of adolescents.
- To identify the interactive impacts of adolescence period and gender on decision making and problem-solving skills of adolescents.

Hypotheses

The following hypotheses were tested to fulfill the objectives of the study:

- There will be no significant difference between middle and late adolescence period on decision making and problem-solving skills of adolescents.
- There will be no significant difference between male and female adolescents on decision making and problem-solving skills.
- There will be no significant interactive effect of adolescence period and gender on decision making and problem-solving skills of adolescents.

Sample

The sample of the study was comprised of total 400 adolescent following the 2x2 factorial design as two level of each independent variable i.e. adolescence period (middle and late) and gender (male and female). As per the requirement of sampling and research design the adolescents were purposively selected from schools of Gandhinagar and Mehsana district of Gujarat state.

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Tools

Following standardized tools were used for collecting the data.

1. **Social Skills Rating Scale (SSRS):** The decision making and problem-solving skills of adolescents was identified with help of Decision Making and Problem-Solving skills Scale a sub scale of Social Skills Rating Scale (SSRS) developed by Vishal Sood, Arti Anand and Suresh Kumar. This sub scale consists 15 items. It is Likert type five-point scale scoring from 1 to 5. The minimum score on the sub scale is 15 and the maximum is 75. The higher score on the sub scale indicates higher level of decision making and problem-solving skills possessed by the subjects. Gujarati version of the sub scale was used for collecting the data. Test-Rest Reliability of the scale was reported 0.71 and internal consistency of the decision making and problem-solving skills sub scale was found to be 0.39 which is significant at 0.01 level.

RESULT AND DISCUSSION

Table 1: Analysis of variance for decision making and problem-solving skills in relation to adolescence period and gender.

Variables	Sum of Squares	Df	Mean Squares	F	Sig.
Adolescence Period (A)	7.56	1	7.56	0.11	NS
Gender (B)	0.06	1	0.06	0.001	NS
A x B	117.72	1	117.72	1.65	NS
Error	28010.18	392	71.46	-	-
Total	1298171.00	400	-	-	-
Corrected Total	28605.44	399	-	-	-

Significant Level: 0.05 level 3.85 (df= 1) & 0.01 level 6.66 (df= 1)

Table 2: Mean score on decision making and problem-solving skill reported by various groups of adolescents.

Variable	Group	N	Mean Score	F- Value	Significant Level
Adolescence Period	Middle Adolescence	200	56.20	0.11	NS
	Late Adolescence	200	56.48		
Gender	Male	200	56.35	0.001	NS
	Female	200	56.33		
Adolescence Period & Gender	Middle Adolescence Male	50	55.67	1.65	NS
	Middle Adolescence Female	50	56.73		
	Late Adolescence Male	50	57.03		
	Late Adolescence Female	50	55.92		

It can be seen from the table 1 that the adolescence period and gender do not significantly impact the level of decision making and problem-solving skills of the adolescents. The F value regarding middle and late adolescence period on decision making and problem-solving skill is found to be 0.11 which is non-significant. Similarly, The F value regarding male and female adolescents on decision making and problem solving is found to be 0.001 which is also non-significant. The interaction between adolescence period and gender is also found to be non-significant (F= 1.65). Therefore, all three null hypotheses of the study are accepted.

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As it is clearly state from table 2 that the mean score of late adolescence on decision making and problem-solving skill is 56.48 and middle adolescence is 56.20. The differences between the mean score of both the group is 0.28. This difference found to be non-significant ($F= 0.11$). So, adolescence period is not significantly impacting the decision making and problem-solving skills of adolescents. However, the group of late adolescence have slightly higher mean score on decision making and problem-solving skills than the group of middle adolescence. Results also indicate that both the group have average/moderate decision making and problem-solving skills. Leon Mann et al. reviewed evidence relating to the development of competence in decision-making during adolescence. The evidence suggests that by the age of 15 years many adolescents show a reliable level of competence in metacognitive understanding of decision-making, creative problem-solving, correctness of choice, and commitment to a course of action. Young adolescents (12–14 years) are less able to create options, identify a wide range of risks and benefits, foresee the consequences of alternatives, and gauge the credibility of information from sources with vested interests.

Table 1 also indicates that the mean score of male adolescents on decision making and problem-solving skill is 56.35 and female adolescents is 56.33. The differences between the mean score of both the group is 0.02. This difference found to be non-significant ($F= 0.001$). Gender does not significantly impact the decision making and problem-solving skills of adolescents. However, male have slightly higher mean score on decision making and problem-solving skills than the female. Results also indicate that both the group have average/moderate decision making and problem-solving skills. Solianik et al. (2016) reported that there are no gender differences in cognition. Merritt et al. (2007) indicated that there was limited empirical evidence indicating males and females might differ in selective attention. David and Byrnes (2001) found out that adolescents valuing of social relational goals and their decision-making competency were typically the best predictors of their social behaviors. The results also showed that adolescent girls especially the older ones were the most affirming of socially competent behavior whereas older adolescent boys tended to be the least affirming of this.

The differences among mean scores on decision making and problem-solving skill as held by the group of adolescence period and gender are found to be non-significant ($F= 1.65$). The group of late adolescents' male have higher mean score ($M=57.03$) on decision making and problem-solving skills compare to other three groups; while middle adolescents males exhibit low mean score ($M=55.67$) as compared to other three groups.

CONCLUSIONS

1. Adolescence period does not have significant impact on decision making and problem-solving skills in adolescents. However, during the late adolescence decision making and problem-solving skills are improved compare to previous period of adolescence.
2. Gender does not significantly impact to decision making and problem-solving of adolescents. However, boys exhibit slightly higher decision making and problem-solving skills compare to girls.
3. Adolescent male and female have moderate decision making and problem-solving skills during the late and middle adolescence. It is need to be improved by an interventive program so they can develop various social skills.

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Conflict of Interest

The author(s) declared no conflict of interest.

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