



Problem Solving Skills among Adolescents in Surat City: A Reality Check

Mohua Moitra¹, Rutu Buch², Rahul Damor³

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Author's Affiliation:

¹Associate Professor; ²Assistant Professor, Dept of Community Medicine, Government Medical College, Surat

Correspondence

Dr. Rutu S Buch
rutu.buch@gmail.com

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ABSTRACT

Introduction: Adolescents pass through physical, mental and social development. Problem solving skill is necessary to address the problems in daily life. The present study was conducted to estimate the 'problem solving' skills among adolescents and the factors affecting it.

Methods: A cross sectional study using purposive sampling was carried out involving 1177 college going students aged between 17 and 19 years. General Self Efficacy (GSE) Scale and semi-structured questionnaire was used to collect data. Statistical analysis was conducted with the help of SPSS.

Results: Problem solving skill was good (score>31) among 58.4% and fair (score<30) among 41.6% of participants. Mean (SD) and median score was 31.2 (SD-4.1) and 31.5 (Range between 17 and 40). Cronbach's alpha was 0.7. Problem solving skills were affected by sex, score on fantasy scale, levels of empathic concern, perspective taking, levels of personal distress, decision making process, skill for coping with stress and creative thinking

Conclusion: Life skill based education contributes in the emotional and behavioural development of adolescents leading to better problem solving skills. Thus life skill education/training is the need of the hour to empower this vulnerable group to deal with the various challenges faced by them.

Keywords: Life skills, adolescent, problem solving, purposive sampling, General Self Efficacy (GSE) Scale, logistic regression

INTRODUCTION

Adolescent population forms a major portion of the world population. This portion is even bigger in the developing country like India. This age group is in the phase towards maturation. Adolescents pass through physical, mental and social development. Positive intervention in growing phase might help them in living a healthier life.

Adolescence is a vital stage of growth and development. It is a period of transition from childhood to adulthood. These are also years of risk taking, solving their own problems, taking decisions on crucial issues, peer pressures and coping with stress. ¹⁻⁵

Problem solving skill is necessary to address the problems in daily life as well as environmental problems faced today due to indiscriminate development.⁶⁻⁹ With this background we designed this study with intention of generating data related to problem solving skills and its relationship with other life skills.

METHODOLOGY

A cross sectional study was conducted and data was conducted during March 2015 to September 2015. Six colleges from Surat city were purposively selected for this study and all the first year students in the selected colleges were the participants

of this study. A total of 1148 students were included in this study. All the colleges selected were from different specialties so that wider perspective could be covered.

Inclusion criteria: All the first year students were included in this study. Students belonging to age group 17 to 19 years were participants of this study. (*To prevent discrimination and conflicts, participants not matching this inclusion criteria of study were also allowed to fill up the study questionnaire with their classmates, but their forms were excluded later while analysis of data.) All students those students who were present were included.

Exclusion criteria: Participants who were absent during the briefing session and who did not agree to participate in the study were excluded from the study.

After getting written consent for participation, students were asked to sit in such a way that they cannot see the questionnaire forms of other students. Thus, confidence and confidentiality was sustained. After proper sitting arrangement students were completed, the researcher explained the questions and the self administered study forms were filled. Adequate time was provided.

Study tool: The Generalized Self-Efficacy Scale (GSES) is based on conceptions of expectations and self-efficacy. The stronger the conviction of self-efficacy, the higher the tendency towards more difficult tasks.¹⁰

In the 10-item general self-efficacy scale, developed by Schwarzer and Jerusalem, responses are structured on a four-point scale: 1, not at all true; 2, hardly true; 3, moderately true; and 4, exactly true. A total score (10–40) is obtained by summing the responses to each of the 10 items. Several studies have confirmed the high reliability, stability, and construct validity of the general self-efficacy. Cronbach's alpha values of the general self-efficacy scale among adolescents 0.87.¹¹ Responses for all items were summed up to get an overall score and higher scores indicated higher level of self efficacy.¹²

RESULTS

In this study, problem solving skill was assessed with the help of General Self Efficacy (GSE) scale, mean, SD and median were 31.2, 4.1 and 31.5 respectively. Cronbach's alpha was 0.713 for this data set. While responding to the questions in the above mentioned scale 35.8% and 54.5% of study participants reported that sentence – 'I can always manage to solve difficult problems if I try hard enough.' was moderately true and exactly true in

their case. Similar results were documented for other questions in this data set.

Table 1: Distribution of study participants according to strength of problem solving skill (n=1148)

Problem solving skill	Participants (%)
Good (Score ≥ 31)	671 (58.4)
Fair (Score ≤ 30)	477 (41.6)

Among the study participants, most (58.4%) had good problem solving skill in this study. In present study a statistically significant (p value < 0.05) difference was observed with variables like sex, score on fantasy scale, levels of empathic concern, perspective taking, levels of personal distress, decision making process, problem solving, interpersonal relationship, skill for coping with stress and creative thinking.

In this study, Backward Logistic Regression (LR) was used to study determinants of Problem Solving Skill among adolescents. Wald statistics is significant for this model (Wald 34.541, $df = 1$, $P = 0.000$). Classification table showed overall model gives 77.1% correct predictions. Chi-square value is 103.69 and associated significance level is less than 0.05, so the present model shows decrease deviance from the base model. So, this model is better fit compared to base model. Nagelkerke R^2 value is 0.143 which indicate that 14% variance in the outcome (dependent) variable which is problem solving skill is explained by this model. Hosmer and Lameshow test had chi square value of 12.292 with 7 degrees of freedom and $p = 0.091$ which is also suggestive of a fit model. Following conclusions can be derived from the model: (Table 2)

Adolescents with fair creative thinking skills are 0.47 times less likely to have good problem solving skill than those with good skill. This can be said with 95 % confidence level with the confidence limits ranging from 0.338 to 0.663.

Adolescents with good decision making process are 1.742 times more likely to possess good problem solving skill than those with fair decision making process. This can be said with 95 % confidence level with the confidence limits ranging from 1.246 to 2.436.

Adolescents with high scores on Empathic concern scale are 1.524 times more likely to possess good problem solving skill than those low scores. This can be said with 95 % confidence level with the confidence limits ranging from 1.001 to 2.321.

Adolescents with low scores on Personal distress scale are 0.495 times less likely to possess good problem solving skill than those low scores. This

Table2: Determinants of problem solving skill among study participants using Logistic Regression

Variables in model	B	SE	Wald	Exp (B)	P value	95% CI	
						Lower	Upper
Creative thinking	-0.748	.172	18.904	0.473	0.000	0.338	0.663
Decision making process	0.555	0.171	10.256	1.742	0.001	1.246	2.436
Empathic concern	0.422	0.214	3.864	1.524	0.049	1.001	2.321
Personal distress	-0.702	0.159	19.587	0.495	0.000	0.363	0.676
Interpersonal reactivity index	0.603	0.165	13.329	1.827	0.000	1.322	2.525
Self esteem	0.954	0.253	14.187	2.596	0.000	1.580	4.265
Constant	-2831	0.664	18.171	0.059	0.000		

Wald 34.54, df=1, P=0.000

Chi-square 103.697, df=6, p = 0.000

Nagelkerke R² = 0.143

Hosmer and Lameshow test - Chi-square 12.29, df=7, p = 0.09

can be said with 95 % confidence level with the confidence limits ranging from 0.363 to 0.676.

Adolescents with high scores on Interpersonal Reactivity Index are 1.827 times more likely to possess good problem solving skill than those low scores. This can be said with 95 % confidence level with the confidence limits ranging from 1.322 to 2.525.

Adolescents with high self esteem are 2.596 times more likely to possess good problem solving skill than those with low score self esteem. This can be said with 95 % confidence level with the confidence limits ranging from 1.580 to 4.265.

DISCUSSION

Problems solving skills were affected by various socio-demographic variables and presence of other life skills. Out of every five participants, three demonstrated "good" problem solving skill, but two had "fair" skill which is a disadvantage.

In studies conducted by Yang Wang¹² et al among unemployed participants to elicit depressive symptoms in China; Mostafa Jafari¹³ et al among children and adolescent in with ADHD in Norway and Deborah R. Glasofer¹⁴ et al among adolescent females with eating disorders, mean and SD were 38.29 and 5.69, 55.26 and 5.17 and 61.0 and 9.6. Mean of this current study was lower than the above mentioned studies.

However, similar results were observed by Jane M. Cramm¹¹ et al among adolescents with chronic conditions in Netherland and Martin C. S. Wong¹⁵ et al among students in Hong Kong, mean and SD were 29.7 and 4.7 and 25.48 and 4.82 respectively among adolescents. In a study conducted by Hans Christian B¹⁶ et al among adolescents with depression in Norway, mean and SD among males and females were 29.84 (5.12) and 29 (4.23) respectively.

More than 40 % of students exhibited fair competency in problem solving. This indicates a need for

training adolescents to improve their problem solving skills.

CONCLUSION

More than half of the participants (58.4%) in this study had good problem solving skill (score > 31) in this study. Problem solving skills were affected by other variables like sex, empathy, critical thinking, coping with emotions, interpersonal relationship, decision making, coping with stress and creative thinking. While applying backward logistic regression, better creative thinking, decision making process, empathy, coping with emotions and interpersonal relationship are positive predictors of better problem solving skill.

RECOMMENDATION

Life skill based education contributes in the emotional and behavioural development of adolescents leading to better problem solving skills. Thus life skill education/training is the need of the hour to empower this vulnerable group to deal with the various challenges faced by them.

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