



Coping With Stress in Iranian School-Age Children

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ARTICLE INFO

Article type:
Original Article

Article history:
Received: 17 Apr 2012
Revised: 23 Jul 2012
Accepted: 11 Aug 2012

Keywords:
Psychological Stress
Coping Skills
School Age Population
Child

ABSTRACT

Background: Methods learnt by children to cope with stress will be used in their adolescence. Failure to learn adaptive coping strategies causes some mental, physical and behavioral problems which continue until adulthood.

Objectives: The current study was conducted to investigate the methods of coping with stress among Iranian school-age children.

Patients and Methods: A descriptive study was conducted in which a randomly selected sample of 839 students of third to fifth grade of primary school in Tabriz, Iran participated. The data were collected using the Schoolagers` Coping Strategies Inventory questionnaire. SPSS software was employed to analyze the data by percentage, absolute frequency, and linear regression test.

Results: All coping methods inserted in the questionnaire were used by students. More than 70% of students mentioned "pray", "say I'm sorry or tell the truth", and "try to relax, stay calm" out of 26 cases of coping strategies. According to more than 60% of children, "pray", "say I'm sorry or tell the truth", and "draw, write, or read something" were the most useful coping methods and "pick on someone" and "yell or scream" were not mostly used by the children under study.

Conclusions: Children use variable methods to cope with their stress. Therefore, parents, health trainers and school authorities should distinguish non-adaptive methods of children and teach them the adaptive coping strategies.

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► Implication for health policy/practice/research/medical education:

Results of this study can be used by parents, health trainers and school authorities. Then, they may differentiate between the children's adaptive and non-adaptive coping strategies and teach them the adaptive coping strategies.

► Please cite this paper as:

Valizadeh L, RahkarFarshi M, Zamanzadeh V, Farnam AR, Fadaei Z. Coping With Stress in Iranian School-Age Children. *Nurs Midwifery Stud.* 2012;1(1):31-5. DOI: 10.5812/nms.7905

1. Background

Stress is a reaction shown against stressor (1) when the needs of a situation are more than capabilities of the per-

son to cope with that situation (2, 3). Most psychologists, pediatricians and health providers believe that stress has an important role in development of physical, psychological and social problems in children. 35% of children in the

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USA experience health problems related to stress (3). Several studies found relations between stressful events of life in children and development of cancer (4). Response to stressful events includes three elements: emotional and physical responses, defensive mechanisms and coping strategies (5). Coping methods of children are affected by individual and environmental factors like age, sex, evolution level, environmental conditions and previous stress experiences (6, 7). For example, as children grow up they can cope with their stress better (8, 9). Methods learnt by children to cope with their stress in their childhood will be undoubtedly used in their adolescence and they may cope with the situations with the same methods in their adulthood (2). A study on college students showed that those who use adaptive coping methods experience good educational achievements (10). Another study showed that the health level of college students who use non-adaptive coping methods is lower (11), so it is important to find proper emotional responses for each situation from childhood and lack of ability in learning these skills will result in mental, physical and behavioral problems that continue until adulthood and will create complicated family and social problems in future (2). Studies in this field have shown that the most common methods used by children to cope with their stress include painting, eating, playing, watching TV and so on (7). Today, health trainers of schools and family consultants are among the important factors in health domain and they should have enough information about stress and non-adaptive coping patterns. Here the training role of a nurse as a health care provider becomes more important to train the related issues to health trainers and parents or act as health consultant of the child and his/her family in this field (2, 12). Most studies on stress in childhood are performed in other countries and studies performed in Iran are very limited. According to the statistics of the year 2008 - 2009 of education department, there are 5.5 million students in primary schools in Iran (13).

2. Objectives

The current study aimed to investigate stress coping strategies in Iranian school-age children. The obtained data can be used to make future planning for children's health and educational programs for school health trainers and for parents and teachers.

This study tried to answer two questions:

1. What coping strategies do children use?
2. What kind of coping strategies are effective?

3. Patients and Methods

It was a descriptive study and the target population included all students of 3rd to 5th grade of Tabriz elementary schools. The sample size was determined after pilot study. In the pilot study, at first a state boys'

school, a state girls' school, a private boys' school and a private girls' school from each educational zone were randomly selected. Then three students were selected from each grade (9 students from each school) and 180 students were randomly selected for the pilot study. The main sample includes 839 students (design effect = 1.52, intracluster correlation coefficient (ICC) = 0.02, effective sample size (ESS) = total number of subjects in a clustered study (mk) / design effect (DE)). Those students who had physical or mental disorders, those who were younger than 9 or older than 12 years old, or those who couldn't understand Persian language were excluded from the study. After making coordination with five educational zones and schools, 10 students from each grade in each school (cluster) were randomly selected (at least 30 students in each cluster) for the study. Each student received a demographic form and a letter to take home. Students' parents studied and signed the letter and filled the demographic data form. The students and their parents were also told that their participation in this study was optional. Children who returned their demographic form and letter of consent were included in this study. Permission for conducting current research was provided by Tabriz research deputy of educational bureau (No.: 1800/17166). Data were obtained using the Schoolagers' Coping Strategies Inventory (SCSI). The SCSI is a 26-item self-report scale that assesses coping strategies in children 8 - 12 years of age (14). This questionnaire was about the frequency of coping strategies and also the effectiveness of them through a 4-point scale. Considering the results of pilot study on children of 9 - 12, the researchers decided to make minor changes in the questionnaire and made it simpler to obtain more reliable results. Response to using the coping strategies was "1" (do you use? Yes = 1) and the response to not using the coping strategies was 0 (do you use? No = 0). However, the efficiency of each coping strategy was graded as follows: Is it useful for you? Yes = 1 or No = 0. The questionnaire used in the current study was translated by the researchers and its validity of true translation was investigated before using it. Reliability of the questionnaire was obtained in Skybo and Buck (2007) study for frequency coping strategies, Cronbach's alphas ranging from 0.75 to 0.82 and for effectiveness was 0.79. Reliability of the questionnaire used in the current study was determined by test-retest method. Correlation coefficient for frequency of coping strategies was 0.77 and for effectiveness of strategies was 0.76. Data were collected after making the coordination with educational zone and the permission was obtained from its specialized committee for collecting data in a peaceful environment in school and through interview with children in non-instruction hours. The data were analyzed by SPSS.ver17 using descriptive statistics with percentage and frequency. Linear regression test was used to obtain the relations between variables.

4. Results

In total, 470 students in the sample group were female (56%) and 369 were male (44%). The mean age of students

was 10.46 years (SD = 1.02). Also, 809 students (96.4%) were living with both of their parents; the others were living with one of their parents or with other relatives.

Table 1. Most Frequently Reported Coping Strategies

	Used Strategies, No. (%)	Unused Strategies, No. (%)	Missed
Praying	673 (81.2)	159 (18.8)	7
Say I'm sorry or tell the truth	650 (78.4)	179 (21.6)	10
Try to relax, stay calm	606 (72.8)	226 (27.2)	7
Think about it	559 (67.9)	264 (32.1)	16
Watch TV or listen to music	557 (69.2)	275 (30.8)	5
Draw, write, or read something	555 (67.2)	271 (32.8)	13
Play a game or something	552 (66.3)	281 (33.7)	6
Try to forget about it	480 (58)	347 (42)	12
Eat or drink	478 (57.5)	353 (42.5)	8
Walk, run or ride my bike	465 (55.7)	370 (44.3)	4

Table 2. All of the Coping Strategies' Frequency

	Used Strategies, No. (%)	Unused Strategies, No. (%)	Missed
Maladaptive Strategies			
Be by myself, be alone	237 (28.3)	600 (71.7)	2
Bite my nails	127 (15.2)	711 (84.8)	1
Cry or feel sad	340 (41.4)	488 (58.9)	11
Fight with someone	197 (23.7)	634 (76.3)	8
Eat or drink	478 (57.5)	353 (42.5)	8
Get mad	227 (27.4)	600 (72.6)	12
Hit, throw or break things	141 (17)	686 (83)	12
Pick on someone	75 (9.1)	749 (90.9)	15
Yell or scream	123 (14.7)	713 (85.3)	3
Adaptive Strategies			
Daydream	346 (41.5)	487 (58.5)	6
Do something about it	375 (45.6)	448 (54.4)	16
Cuddle an animal or my pet	334 (40.1)	498 (59.9)	7
Do work around the house	255 (30.9)	569 (69.1)	15
Draw, write, or read something	555 (67.2)	271 (32.8)	13
Talk to someone	388 (46.8)	441 (53.2)	10
Play a game or something	552 (66.3)	281 (33.7)	6
Pray	673 (81.2)	159 (18.8)	7
Run or walk away	386 (46.7)	440 (53.3)	13
Say I'm sorry or tell the truth	650 (78.4)	179 (21.6)	10
Sleep, take a nap	335 (40.4)	495 (59.6)	9
Talk to my self	346 (41.7)	483 (58.3)	10
Think about it	559 (67.9)	264 (32.1)	16
Try to forget about it	480 (58)	347 (42)	12
Try to relax, stay calm	606 (72.8)	226 (27.2)	7
Walk, run or ride my bike	465 (55.7)	370 (44.3)	4
Watch TV or listen to music	557 (69.2)	275 (30.8)	5

Table 3. Demographic Characters and Coping Strategies Relation in School-Age Children

	Adaptive Strategies				Maladaptive Strategies			
	GLM				GLM			
	P value	t	F	df	P value	t	F	df
			1.5	7			3.2	7
Age	0.4	0.6			1.3	1.5		
Sex	0.7	-0.3			0.009	2.6		
Grade (3rd, 4th, 5th)	0.8	0.1			0.7	0.2		
Birth rank	0.2	1.2			0.1	1.3		
Father education	0.6	0.4			0.7	0.2		
Mother education	0.4	0.7			0.3	0.9		
Type of school	0.07	1.7			0.2	1.1		

Abbreviation: General linear model

Of the total sample, 23.2% (194 students) were the only child of the family, 51.6% (439 students) had one sibling, 17.2% (144 students) had two siblings and 8% (67 students) had 3 or more siblings and three students didn't reply. All 26 items of the questionnaire were mentioned as applied coping strategies by the participating students, and more than 50% of children mostly used ten coping strategies (Table 1). The items of "pick on someone", "yell or scream", "bite my nails" and "hit, throw or break things" are among the methods less used by children. Based on the results obtained from efficiency part of the questionnaire, the items of "Pray" 74.1%, "Say I'm sorry or tell the truth", 67.6%, "Draw, write, or read something" 60.6%, "Try to relax, stay calm" 59.7%, "Watch TV or listen to music" 57.8% and "Play a game or something" 55.4% were among the most useful strategies of coping and these strategies were among adaptive coping strategies (Table 2). It can be said that the coping methods mostly used by children of 9 - 12 are among the strategies which they think are more efficient. In studying relations between some demographic characteristics and coping methods, there was a significant relation ($P < 0.05$) between variable of sex and non-adaptive coping methods (Table 3).

5. Discussion

According to the results of the study, children use different coping strategies in stressful situations. All 26 items of the questionnaire were mentioned as coping methods used by students of 3rd, 4th and 5th grades. More than half of the children used ten coping strategies and most of them mentioned the items "Pray", "Say I'm sorry or tell the truth", "Try to relax, stay calm", "Watch TV or listen to music", "Think about it", "Draw, write, or read something" and "Play a game or something", which were among the adaptive coping strategies. Less reported that coping strategies were among non-adaptive coping methods. According to a study conducted by Sharrer and Ryan-Wenger most commonly used coping methods in the USA included "watch TV or listen to music", "yell or scream",

"cry or feel sad" and "cuddle an animal or my pet" and when comparing with the present study the results were similar except for "yell or scream" item and this can be because of cultural differences (14). According to the results obtained by Bagdi and Pfister, coping methods used by children of 5 to 9 years in the United States are divided into three categories: cognitive, social, and emotional categories while social coping strategies (such as being alone, and looking for support) are among the mostly used methods, and cognitive strategies (such as thinking on stressful situation and methods of decreasing it) are among the methods less used by children which shows different results from those of the current study (15). It seems that the differences between the results are because of different age range of these two studies. Older children are mostly willing to use adaptive coping methods such as cognitive strategies. In a study conducted by Skybo and Buck in Ohio, it has been shown that the most commonly used coping methods are "draw, write, or read something", "eat or drink", "watch TV or listen to music", "play", "try to relax, stay calm", "think about it", "be by myself, be alone", "say I'm sorry" and "pray" respectively (7), and all these items (except "be alone") are exactly the same ten coping strategies used by most of the students in the present study. Based on the results of the present study, items of "pray", "say I'm sorry or tell the truth", "draw, write, or read something", "try to relax, stay calm", "watch TV or listen to music" and "play a game or something" were among the most effective coping strategies. These methods are among adaptive methods and are consistent with the results of Skybo and Buck and Sharrer and Ryan-Wenger (7, 14). In all these studies, children mostly used coping strategies that considered being efficient and most items reported as efficient coping methods were among adaptive coping methods. According to the results of the present study there is a significant relation between the sex of students and non-adaptive coping methods and this finding is consistent with the results of the study conducted by Sharrer and Ryan-Wenger (14) in which male students used non-adaptive coping

strategies more than females. Generally, the results of the present study are almost similar to the results of studies conducted in other countries. Children use variable methods to cope with their stress. Therefore, parents, health trainers and school authorities should distinguish non-adaptive methods of children and teach them the adaptive coping strategies. The current study findings may help health trainers and nurses in schools to distinguish non-adaptive patterns of coping with stress, reflect them to the parents and to provide the required facilities and tools for the children to prevent them from stressful situations. However, conducting future studies in this field and in other age ranges is recommended. Like other studies, this study also had some limitations. Firstly, probable individual differences in children of different ages may affect their replies. Secondly, students may not give correct information about themselves in questionnaires, although we have solved this problem through trying to attract their consent and confidence about confidentiality of their information.

Acknowledgments

The authors hereby thank and appreciate the cooperation of the authorities of five Educational zones of East Azerbaijan and principals and teachers of schools in Tabriz. The authors also thank the students of Tabriz elementary schools, their parents and all those who helped researchers in this study.

Authors' Contribution

Leila Valizadeh and Vahid Zamanzadeh were responsible for the study conception and design, Literature search, data analysis, manuscript preparation and editing. Mahni Rahkar Farshi participated in the study design, data analysis and manuscript preparation. Alireza-Farnam participated in the study conception, Literature search, data analysis, data gathering and manuscript preparation. ZeynabFadaei participated in the study design and manuscript review.

Financial Disclosure

Authors certify that they have no conflict of interest about the current study.

Funding/ Support

None declared.

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