

Age and gender differences and construct of the children's emotional intelligence

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Abstract: With respect to the age and gender the children's emotional intelligence construct is still being developed with little empirical support. Hence, this research follows a specific objective for determination of the differences between construct of the children's' emotional intelligence (EI) and their personal characteristics such as age and gender. The present study was carried out among 107 Iranian students in the Iranian primary schools in Kuala Lumpur, Malaysia. The students (girls and boys) were clustered in three different age groups, 8, 9, and 10 years old. Data were collected using the Emotional Quotient Inventory Youth Version (Bar-on EQ-i; YV, 2000) and demographic questionnaire. The statistical findings, with respect to gender and ages, indicated that there was a noticeable difference between emotional intelligence of girls and boys in groups of ages.

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1. Introduction:

The concept of Emotional Intelligence is a complex phenomenon that occurs in children. It is found to lead to strong personal relationships (Cooper, 1997) and to improve pro-social behavior and self-management skills in children (Bar-On & Parker, 2000). Research indicates that children who are able to regulate their emotional reactions in response to others' emotions are more likely to have good social skills and to act pro-socially (Eisenberg et al., 1997).

The emotional intelligence construct is a relatively new concept with little empirical research, particularly related to the link between five specific sub-components of the children's emotional intelligence, and their age and gender.

There has been a growing interest in the emotional functioning of children (Hubbard & Coie, 1994; Pettit, Dodge & Brown, 1988, Stover, 2003) and the factors that influence it (Carson & Parke, 1996; Eisenberg et al., 1996; Hooven, et al., 1995; Rossman, 1992; Saarni, 1989, Stover, 2003) in order to develop more integrated theories of development (Hesse & Cicchetti, 1982; Stover, 2003).

According to Steven Stein (2004), women are more aware of their feelings and those of others, relate better interpersonally, and are significantly more socially responsible than men.

Goleman (1995) offers counter views of emotionally intelligent men and women. By contrast, men who are high in emotional intelligence are

socially poised, outgoing and cheerful, not prone to fearless or worried rumination. They have a noticeable capacity for commitment to people or causes, for taking responsibility, and for having an ethical outlook; they are sympathetic and caring in their relationships. Their emotional life is rich, but appropriate; they are comfortable with themselves, others, and the social universe they live in (Goleman, 1995).

The North American normative sample was conducted to examine the effect of gender on total EQi scores (Bar-on, 1997). With respects to gender, no differences have been revealed between males and females regarding overall EQi. However, statistically significant gender differences do exist for a few of the factors natured by the EQ-i, but the effects are small for the most part. Based on Bar-On's research (1997), females appear to have stronger interpersonal skills than males, but the latter have a higher intrapersonal capacity, are better at managing emotions and are more adaptable than the former.

Katyal and Awasthi (2005), in their research on gender differences in emotional intelligence, 150 students of Xth class from different Government Schools in Chandigarh were selected randomly for assessment of gender differences in emotional intelligence. The data was collected through standardized "Emotional Intelligence Test". The findings revealed that majority of boys, girls and the total sample had good followed by low emotional intelligence. Girls were found to have higher

emotional intelligence than that of boys. However, the difference touched only 0.10 levels; hence, findings are just suggestive of the trend.

Petrides (2000) has assessed the relationship between gender and emotional intelligence among 260 predominantly white participants completed a measure of trait emotional intelligence (EI) and estimated their scores. Findings indicated that females scored higher than males on the "social skills" factor of measured trait emotional intelligence. However, it was demonstrated that males believed they had higher emotional intelligence than females. Most of the correlations between measured and self-estimated scores were significant and positive, thereby indicating that people have some insight into their emotional intelligence. Correlations between measured and self-estimated scores were generally higher for males than females, and a regression analysis indicated that gender was a significant predictor of self-estimated emotional intelligence.

Habibah Elias (2007) found that the mean EQ of at-risk students were rather low (mean= 57.67, SD=0.26). She also found that significant gender differences ($t=4.103$, $p<.05$) in EQ scores among at-risk students with female students obtained a higher mean compared to the males.

There are many assumptions about emotional intelligence and age. Steven Stein (2004) pointed that popular literature and "common sense" asserts that older people are more aware, wise, and restrained. Existing research indicates a slight relationship between emotional intelligence and age (Bar-on, 1997).

Using the Six Seconds' Emotional Intelligence Assessment, (SEI), a study of 405 American people shows that emotional intelligence (EQ) increases slightly with age. The relationship is $r = 0.13$ ($p<.01$), slight but significant. According to new Bar-on EQ-i and trade test results from multi-Health Systems, the older you get, the more emotionally intelligent you become. The total EQ score increased significantly with age, peaking in the late forties or early fifties.

Bar-on (1997), has discovered that older people are generally able to cope better with environmental demands and pressures than younger people. Moreover, older people are particularly, 1) more independent in their thinking and actions, 2) more aware of others' feelings, 3) more socially responsible, 4) more adaptable, 5) better at sizing up the immediate situation and solving problems, and 6) able to manage stress better than younger people

The North American normative sample ($n=3,831$) was conducted to examine the effect of age on EQi scores (Bar-on, 1997). The results indicated a few significant differences between the age groups

that were compared; these differences are relatively small in magnitude. In brief, the older groups scored significantly higher than the younger groups on most of the EQi scales; and respondents in their late 40s obtained the highest mean scores. An increase in emotional intelligence, with respect to age, is also observed in children (Bar-on, Parker, 2000).

2. Materials and Methods

The purpose of this study was to examine differences between sub-components of the children's emotional intelligence with respect to their age and gender among Iranian primary school students in Kuala Lumpur, Malaysia. The school was chosen based upon their location and programs of study. The population of research involved in this study consisted of all the Iranian students who enrolled in primary programs (193 students, academic year 2007-2008).

The data were collected using Emotional Quotient Inventory Youth Version (Bar-On EQ-i:YV, 2000) for assessing children's emotional intelligence. In addition, a brief self-designed demographic questionnaire was also used to gather relevant background information of the subjects in this research.

The research employed the Bar-On EQ-i:YV which comprises of 60 brief items and a five-point Likert style format response set (ranging from "Not True of Me" to "True of Me"). The Bar-On EQ-i instrument consists of the following five scales. Each scale briefly described as follow. The first scale, intrapersonal, involves the ability of the individual to understand their emotions as well as communicate and express feelings and needs. The second scale, interpersonal, measures one's ability to form and maintain satisfying relationships with others. The adaptability scale involves measuring one's ability to manage. The fourth scale, stress management, includes one's ability to remain calm in the face of stressful events. The general mood scale measures optimism and positive outlook. Finally, the total EQ scale is a measure of one's ability to be effective in dealing with daily demands while remaining happy or satisfied.

The first step in ascertaining a respondent's EQ-i:YV results was to calculate raw five composite factors and each child's total emotional intelligence. Each item is assigned with "points" ranging from one to five based on the respondent's responses. In this study, the internal consistency (reliability) of the EQi:YV was examined using the Cronbach's alpha and the result was $\alpha = 0.91$. Reliability indicates the extent to which individual differences in test scores are attributable to "True" differences in the characteristics under consideration (Anastasi, 1988).

Identical statistical procedures, t-test and ANOVA, were conducted for analyses of this research hypotheses. These statistical methods were used to determine the differences between variables. In this research, t-test was used for determine difference between score mean of emotional of groups of boy and girl as independent variables. In addition, ANOVA and Tokay's HSD statistical methods were used to test the null hypothesis for determine differences between score mean of children's emotional intelligence in three groups of ages (8, 9, and 10).

3. Results and Discussion

Description of the participants

The study was wasout among 193 Iranian students. The sample (123) within the target community consisted of three age groups of the primary school children (8, 9, 10 years old). The respondents (107) for this study were the children with 36 boys and 71 girls. The sample was made up of 35.5% of students aged 8 (year two, n=38) of schooling, 31.8% of students aged 9 (year three, n=34), and 32.7% of students aged 10 (year four, n=35). Table 1 indicates the population and sample size of study.

Table 1: Summary of population and sampling of the study

	Age 7 Year1	Age 8 Year2	Age 9 Year3	Age 10 Year4	Size
Population	40	55	48	50	N=193
Samples	-	45	38	40	n=123
Not responded	-	7	4	5	16
Responded	-	38	34	35	107

Participant's students were asked to provide demographic information, which included gender and age of children. Table 2 presents the demographic information of study.

Table 2: Summary of samples for children and fathers by Demographic Variables

Demographic Variable	<i>n</i>	Percentage
<i>Sample</i>	107	100.0
<i>Children's Gender</i>		
Male (boy)	36	33.6
Female (girl)	71	66.4
<i>Children's Age</i>		
8 (year 2)	38	35.5
9 (year 3)	34	31.8
10 (year 4)	35	32.7

Description of the Children's Emotional Intelligence

The descriptive analysis of children's emotional intelligence (EI) scores and its subscales are presented in Table 3, which includes mean, standard deviations, kurtosis, and skewness of the all variables involved in the study. The total children's EI scores demonstrate a slightly positive skew. The

positive skew means that the tail of distribution extends to the right (mode<median<mean). In addition, kurtosis describes the height of the distribution. Kurtosis for the total EI score of children indicates a mildly peaked distribution. Both the Skewness and Kurtosis are low for the most part, indicating that the scores approximate a "normal distribution" or "bell-shaped curve".

Table 3: Descriptive information of the children's emotional intelligence

Variables	Mean	S D	Kurtosis	Skewness
Intrapersonal	82.85	11.40	-1.24	-0.13
Interpersonal	77.63	11.38	-1.22	-0.02
Stress Management	65.84	7.70	-1.18	0.01
Adaptability	68.98	8.17	-1.13	0.14
General Mood	74.17	9.34	-1.16	0.26
Total EI	73.90	9.20	-1.05	0.37

Based on the Bar-On model, the mean and standard deviation of emotional intelligence are 100 and 15 respectively. In addition, in order to increase overall emotional and social intelligence, emotional intelligence score between ranges 50 to 90 is considered low and fall in the category “that needs to be improved”. Scores between the ranges 90 to 110 is

in average range indicating effective (satisfactory) functioning ranges. The range 110 to 150 is the high area of relative strength or enhanced skills range (Bar-On, 1997). The findings of this research show that the mean of the children’s emotional intelligence score is 73.9, which is in the category low average and “that needs to be improved”.

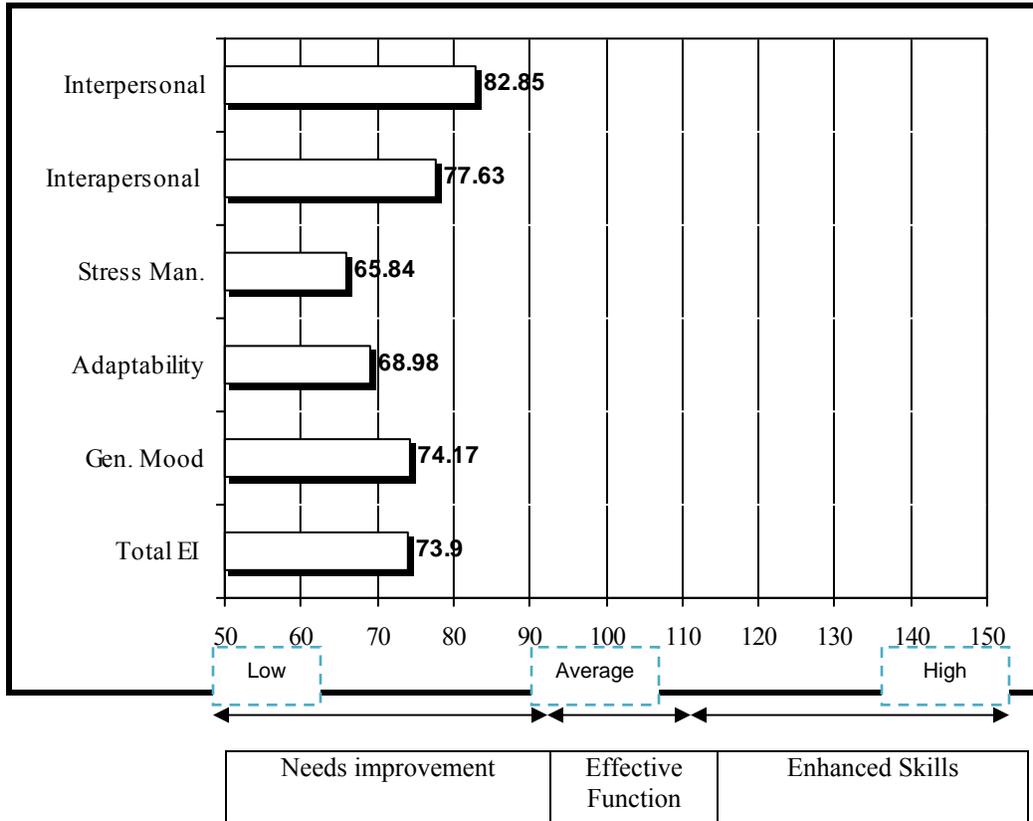


Figure 1: Mean value score of children’s emotional intelligence and its category classes

Figure 1 shows the score value of children’s emotional intelligence, ranges of these scores and its category classes in current study. Based on Figure 1, the children’s emotional intelligence scores and its variables are in categories of low average and need to be improved. The subscales of children’s emotional intelligence follow a ranking with interpersonal (M=82.85, SD=11.4), intrapersonal (M=77.63, SD=11.38), general mood (M=74.17, SD= 9.34), adaptability (M=68.98, SD= 8.17), and stress

management (M=65.84, SD=7.7).

This research also attempts to differentiate children’s emotional intelligence in terms of age and age group. Table 3 presents the descriptive statistics of children’s emotional intelligence by age groups. The results show that the older children have the higher score on emotional intelligence, which reflects that emotional intelligence develops as children getting older.

Table 3: Descriptive statistics of children’s emotional intelligence by age groups

Year	Age	n	Mean of EI	SD	Observed Range
2	8	38	68.0	4.1	58 - 71
3	9	34	77.6	4.4	67 - 82
4	10	35	82.8	6.9	65 - 91
Total		107	73.9	9.2	58 - 91

Meanwhile, Table 4 presents information on the mean scores of the subscales of emotional intelligence by age groups. Regardless of age groups, intrapersonal subscale has the highest mean score, while stress management has the lowest mean score.

Table 4: Descriptive information of subscales and total of children’s emotional intelligence by group of Ages

Subscales of EI	Age		
	8(year2)	9(year3)	10(year4)
	Mean	Mean	Mean
Intrapersonal	88.8	101.6	103.5
Interpersonal	66.9	76.8	86.1
Stress Management	58.6	65.6	71.4
Adaptability	61.3	69.0	73.3
General Mood	64.7	75.0	79.7
Total EI	68.0	77.6	82.8

Figure 2 shows mean score of children’s emotional intelligence and its category classes by age groups. The Figure shows that children have shown different mean value score of emotional intelligence by age group. Generally, based on Bar-On score scale most of the subscales of children’s emotional

intelligence, with respect to age, are below the average standard ranges (90 -110). In addition, it is indicated that subscales of children’s emotional intelligence in different ages need to be improved and developed.

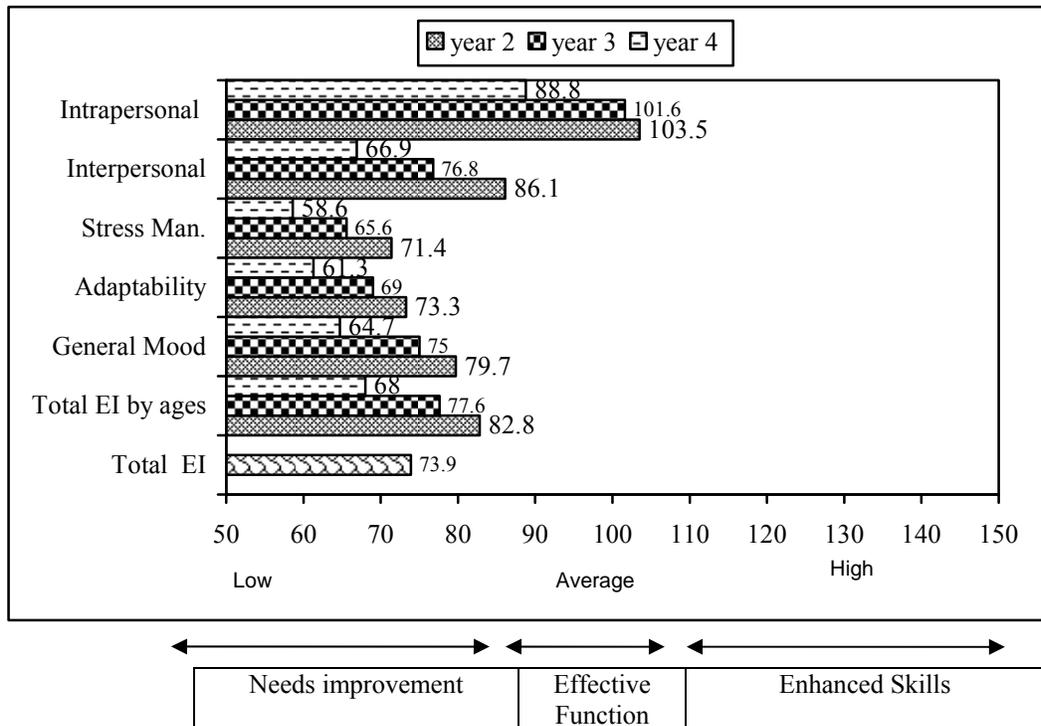


Figure 2: Mean value score of children’s EI and its category classes by age

Mean value score of children’s emotional intelligence, with respect to gender (Table 5 and Figure 3) show a rank between subscales of emotional intelligence for both of boys and girls. This rank includes intrapersonal, interpersonal, general mood, adaptability and stress management,

respectively. The statistical test on the difference between emotional intelligence of boys and girls is presented in the next section. However, based on the information from Table 5 and Figure 3, it shows that the girls have higher mean score in all subscales of emotional intelligence than boys.

Table 5: Descriptive information of children’s emotional intelligence by gender

Subscales of EI	Boy n=36		Girl n=71	
	Mean	SD	Mean	SD
Intrapersonal	78.6	8.6	116.1	12.0
Interpersonal	72.0	7.7	80.5	11.9
Stress Management	62.4	6.5	67.5	7.7
Adaptability	64.2	5.1	71.4	8.3
General Mood	69.0	7.7	76.8	9.0
Total EI	69.3	6.6	82.5	9.5

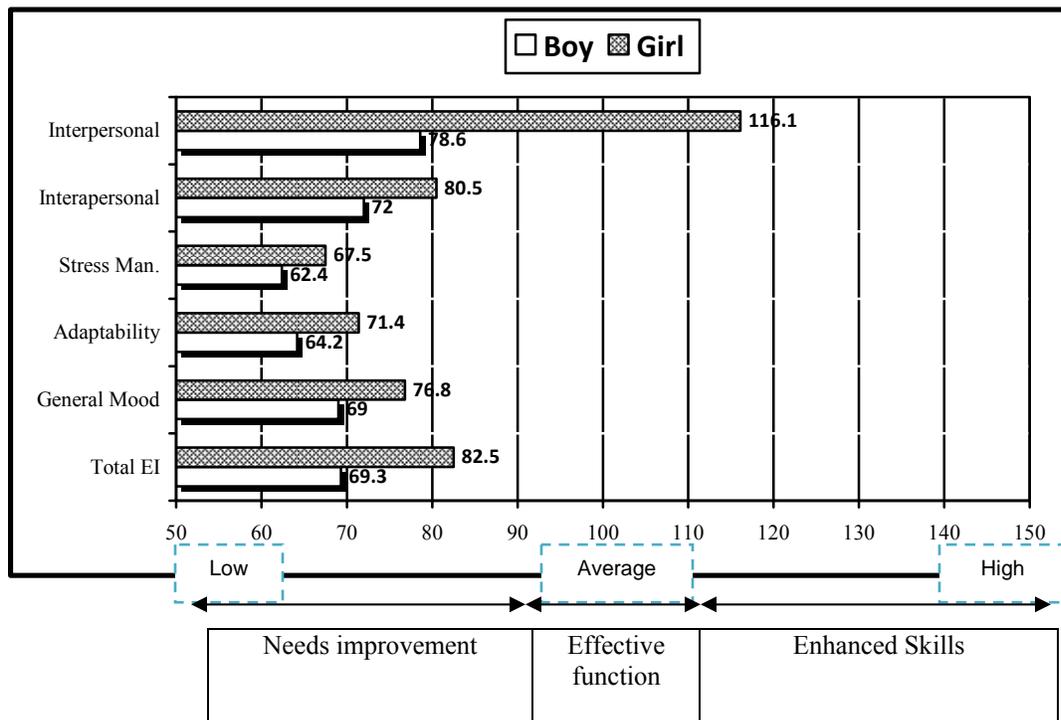


Figure 3: Mean value score of children’s emotional intelligence and its category classes by gender

Gender differences in Children’s Emotional Intelligence

With respect to gender, comparison between the means of two groups of study (boys and girls) which is presented by Table 5, indicate that the emotional intelligence of the girls (M=82.5, SD=9.5) is higher than emotional intelligence of boys (M=69.3, SD=6.6), apparently. The t-test technique was used to test the difference between emotional

intelligence of two groups, boy and girl, statistically. The statistical findings indicate that there was a noticeable difference between emotional intelligence of girls and boys (t= 4.423, $\rho < .05$). Table 6 presents the statistical information on children’s emotional intelligence by gender, and Table 7 shows the summary of t-test result.

Table 6: Descriptive and statistical information on children’s emotional intelligence by Gender

		n	Mean of EI	SD	SE Mean
EI	Boy	36	69.3	6.6	1.099
	Girl	71	82.5	9.5	1.126

Table 7: Summary of t-test result for children's emotional intelligence by gender

		t-test for equality of means			
		t	df	Sig.	Mean difference
EI	Equal variances assumed	-3.941	105	.000	-6.96
	Equal variances not assumed	-4.423	95	.000	-6.96

$\rho < .05^*$

The result indicates that there was a significant difference between emotional intelligence of children between boys and girls. In other word, emotional intelligence of girls is significantly higher than emotional intelligence of boys, supporting findings in Katyal and Awasthi, (2005)'s study which suggested that the majority of boys and girls had "good" followed by "low emotional intelligence" and needed to be improved and enhanced.

According to Stein (2004), findings of the previous research on comparison the emotional intelligence of samples according to their gender indicated that females are more aware of their feelings and those of other and relate better interpersonally than males. In addition, males seem to have stronger self-regard and cope better with immediate problems of stressful nature than females. For a younger age females, sometimes it is shown more empathy and sympathy than younger males (Denham, 1994; Saarni, 1999 and et al). Petrides and Furnham (2000) have demonstrated that males self-believed they had higher emotional intelligence than females.

However, with respect to gender, the differences in emotional intelligence scores is still being developed (Bar-On, 2007), and result of test of

analysis of differences between emotional intelligence of boys and girls confirmed some findings of the previous research.

Age differences in children's emotional intelligence

In this research, there are three groups of ages (8 [year2], 9 [year 3], and 10 [year 4]), and the analysis is concerned with question of differences between children's emotional intelligence. The mean score of emotional intelligence of children, with respect to their age, which is presented by Table 3 are (M=68, SD=4.1), (M=77.6, SD=4.4) and (M=82.8, SD=6.9) respectively. The appropriate statistical method, Analysis of Variance (ANOVA), was used to test the differences between children's emotional intelligence by respect to age. The ANOVA statistical method for the equally mean value scores of children's emotional intelligence were conducted by using SPSS software. Results indicate that there is a statistical significant difference between emotional intelligence of children by ages, $F=10.86$, $\rho < .05$. Table 8 presents the results of the ANOVA for test of differences between the mean of children's emotional intelligence by three age groups.

Table 8: Summary information of ANOVA for children's emotional intelligence by respect to age

	SS	df	MS	F	Sig.
Between groups	607.7	2	303.8		
Within groups	290.7	104	27.9	10.86	.000
Total	898.5	106			

$\rho < .05^*$

A significant difference only suggests that there is a significant difference among the group means. However, it does not identify the group means that are significantly different. Hence, for determination the groups that are significantly different, Tukey's HSD (Honestly Significant Different) were used (Table 9). Results of multiple comparisons of Tukey's HSD indicates that there is a significant

different between group of ages, Sig. =.000, $\rho < .05$. Consequently, multi comparisons of Tukey's HSD confirmed the result of the ANOVA and supports the findings in Bar-On (1997)'s study which suggests that the older people are generally able to cope better with environmental demands and pressures than younger people.

Table 9: Multiple comparisons- Tukey's HSD between mean of children's emotional intelligence by different group of ages

Multiple comparisons _Tukey's HSD, Dependent variable= EI of children						
(2=Year two, 3= Year three, 4= Year four)		MD	SE	Sig.	95% co. Level	
					Lower	Upper
2	3	-10.00*	1.24	.000	-12.96	-7.03
	4	-18.20*	1.23	.000	-21.15	-15.00
3	2	10.00*	1.24	.000	7.03	12.26
	4	-8.20*	1.27	.000	-11.23	-5.17
4	2	18.20*	1.23	.000	15.26	21.15
	3	8.20*	1.27	.000	5.17	11.23

*. The mean difference is significant at the .05 level.

Existing research indicates a slight positive relationship between emotional intelligence and age ($r = .13, p < 0.01$) and it is significant (Bar-On, 2000). Sex differences in emotional intelligence and prosocial behavior tend to vary depending on age (Eisenberg & Fabes, 1998; Saarni, 1999; Zahn-Waxler, Cole & Barrett, 1991, Bar-On, 2000) and the age differences in score of emotional intelligence are still being developed (Bar-On, 2007).

The results of the current research confirmed the finding of previous research which shows that there is a slight difference between levels of emotional intelligence of children by ages. In addition, children's emotional intelligence shows a difference by ranking the age groups of 10 [year 4] ($M=82.8, SD=6.9$) > 9 [year 3] ($M=77.6, SD=4.4$) > and 8 [year 2] ($M=68, SD=4.1$), respectively. It means that while the children are growing up, their emotional intelligence would increase too, significantly.

4. Conclusion

This research concludes that the mean of the children's emotional intelligence and its subscales, based on Bar-On model, were in the low category and "that needs to be improved". In addition, the interpersonal scale of children's emotional intelligence was in the highest and stress management in the lowest rank.

With respect to gender, the statistical findings indicated that there was a noticeable difference between emotional intelligence of girls and boys. In addition, results indicated that there is statistical significant difference between emotional intelligence of children by ages and between groups of ages. It means that while the children are growing up, their emotional intelligence would be increase too, significantly. However, Bar-On, (2007) pointed out that with respect to gender and age, the differences in emotional intelligence scores is still being developed.

Due to the exploratory nature of this study,

as well as the relative novelty of the theory of emotional intelligence, significant findings should be considered for future research. It merely demonstrates the value of expanding future research on the relationship between children's emotional intelligence and their personal characteristics.

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