

# Intelligence and Emotional Intelligence among Inmates of Orphanages: A Cross-sectional Study

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## ABSTRACT

**Introduction:** Intelligence and Emotional Intelligence are the two psychological faculties that are closely related, both neurobiologically and conceptually and has significant influence in life outcome. Children living in orphanages are a group of unprivileged children with insufficient opportunities for both physical and psychological developments.

**Aim:** To find out the intelligence, emotional intelligence and relationship between them among inmates of orphanages.

**Materials and Methods:** The present study was a cross-sectional study which included 100 children living in orphanages. Personal data sheet developed by the investigator, Binet Kamat test of intelligence and Mangal Emotional Intelligence Inventory were the tools used for the study. Mann-Whitney U test and Spearman's rank-order correlation was the statistical tests used.

**Results:** The study subjects consisted of 58 girls and 42 boys. The mean score of intelligence in girls was 100.40 and the mean score of intelligence in boys was 99.12. The mean score emotional intelligence in girls was 61.45 and the mean score in boys was 59.95. No significant difference was found between girls and boys in intelligence and emotional intelligence. A positive correlation was found between intelligence and all the sub-scores and total score of emotional intelligence.

**Conclusion:** Both nature and nurture are important in the development of psychological faculties like intelligence and emotional intelligence. There should be policies and programmes that focus on enhancing the intelligence and emotional intelligence of the underprivileged children living in child care institutions which in turn can decrease the deviant behaviours and increase the positive life outcomes.

**Keywords:** Children, Gender, Institutions, Intelligence quotient-emotional intelligence correlation

## INTRODUCTION

Intelligence and emotional intelligence are the two psychological faculties that are significant in life outcome. The concept of both intelligence and emotional intelligence is complex. Psychologists defined intelligence in varied ways. Wechsler D defined intelligence as the aggregate global capacity to think rationally, to act purposefully and to deal effectively with the environment [1]. Everyone needs the basic mental processes that help them to think logically along with the capacity to adapt to different kind of situations for effective dealing with the surroundings. Emotional intelligence is "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" [2]. It is about sensing, interpreting and refining emotions. Emotional intelligence can be considered as a skill to perceive, assesses and manage the emotions of one's self, of others and of groups. Another concept of emotional intelligence is the emotional-social intelligence model by Bar-On. According to this model, emotional social intelligence is formed by a cross section of interrelated emotional and personality traits that are well established and interact together in the individual [3]. The eastern concepts of intelligence have close overlap with the concept of emotional intelligence. In the Taiwanese Chinese concepts, intelligence is based on five factors. They are a general cognitive factor, interpersonal intelligence, intrapersonal intelligence, intellectual self-assertion and intellectual self-effacement [4].

Even though the intelligence and emotional intelligence is closely related to one another both neurobiologically and conceptually, there is a dearth of studies that demonstrated correlation between intelligence and emotional intelligence. A research conducted among 70 healthy individuals demonstrated correlation between emotional intelligence and intelligence [5]. A study conducted in patients with borderline personality disorders reported associations

between ability emotional intelligence and general intelligence in both patients and controls [6]. Another study demonstrated significant relation between intelligence and education, but there was no significant relationship between intelligence, interpersonal and intrapersonal emotional competencies [7]. Studies demonstrated that individuals with high emotional intelligence engage less in problem behaviours, avoids self-destructive behaviours, are more empathic, and more socially adaptive. People with high emotional intelligence possess high sentimental attachment with home and have positive social interactions and have greater self-perception of social competence [8].

Children living in orphanages are a group of unprivileged children without a home of their own or parents to look forward to. Child care institutions like orphanages were initiated by the government in order to provide the unprivileged children a safe place to stay and to protect them from various kinds of exploitation. A study among institutionalised children reported increased prevalence of problem behaviours among them. They had higher rates of externalising and internalising problems, social problems, attention problems, and thought problems. The labelling of institutionalised children as aggressive increases their risk of being sidelined and the probability of addressing their mental health needs also become decreased. The study also demonstrated that the perceived social support, high competency scores, supportive caregiving, positive relationships with peers and relatives, and problem-solving skills as protective factors for mental health [9].

A study on the impact of out-of-home placement on child well-being demonstrated that children with lower baseline cognitive skills and higher baseline behaviour problems were more likely to be placed in institutions [10]. Ideally, an institution for children should provide them with opportunities for physical and psychological growth and development. But researchers reported impaired physical and

cognitive development among institutionalised children [11-14]. A comparative study between institutionalised and non-institutionalised children reported lower intelligence and lower scores on executive function among institutionalised children. The poor executive function was demonstrated to be associated with the lower quality of physical and social environment in the institution [15]. Bruce J et al., found that compared to children living with their biological parents, children living in institutions had lower scores in general cognitive ability (intelligence) [16]. A study conducted among children who had experienced early institutional deprivation found that duration of deprivation was associated with smaller head circumference, lowered Intelligence Quotient (IQ) and increased mental health problems. The study concluded that psychosocial deprivation plays a major role in neurodevelopmental effects of deprivation [17]. A study of the effects of emotional neglect during early childhood on children's affective development demonstrated that children who had experienced institutionalised care had difficulty in identifying facial expressions of emotion. They also had significant difficulty in matching the appropriate facial expressions to happy, sad, and fearful scenarios when compared with the comparison group. But in case of angry faces, there was no difference between children who were grown up in institutions and comparison children [18].

Studies demonstrated increased emotional reactivity, impulsivity and a characteristic engagement in rumination among maltreated children. They had a maladaptive response to stressors and the deficits in emotion regulation had a role in their psychopathology [19]. A study among healthy individuals also reported negative correlation between stress and components of emotional intelligence such as emotional awareness, thinking, expression and regulation [5]. Another study demonstrated that children who were adopted from socially-emotionally depriving institutions exhibited poor social skills in adolescents. This is particularly true if they are females. Children with poor social skills had higher rates of behaviour problems [20]. Emotional intelligence is found to have a role in many life outcomes. Among children and adolescents, good social relations are found to have positive correlation with emotional intelligence. Similarly, social deviance has negative correlations with emotional intelligence. It also correlates with academic achievement. Others perceive high emotional intelligence individuals as more pleasant to be around and more empathetic. Emotional intelligence also correlates with better family and social relations. Emotionally intelligent individuals have better psychological well-being, which correlates with greater life satisfaction and self-esteem and lower ratings of depression. It also correlates with physical health behaviours such as alcohol or tobacco use [21].

The objectives of the present study was:

1. To find out the intelligence among inmates of orphanages.
2. To find out the emotional intelligence among inmates of orphanages.
3. To find out whether there is any relationship between intelligence and emotional intelligence among inmates of orphanages.
4. To find out whether there is any gender difference in intelligence among inmates of orphanages.
5. To find out whether there is any gender difference in emotional intelligence among inmates of orphanages.

## MATERIALS AND METHODS

A cross-sectional study was conducted and data was collected between January 2017 to December 2017. After getting Institutional Ethical Clearance (IEC/16/11/09 dated 11/11/2016 of IQRAA International Hospital and Research Centre), the investigator visited selected orphanages and obtained permission from the authorities to collect data. Consent was obtained from the children who were willing to participate in the study.

## Sample Size Calculation

Sample size was calculated by the following formula:

$$\frac{Z^2 \times SD^2}{d^2}$$

( $Z=1.96$ ,  $SD=19.99$ ,  $d=8.397$ ) [5], where,  $Z$  is the standard normal variate,  $SD$  is the standard deviation of the variable and  $d$  is the precision by applying the formula sample size was calculated to be 22.

**Inclusion and Exclusion criteria:** Children between the ages of 15-18 years were included in the study. Children who were not able to read and understand Malayalam were excluded from the study.

Personal data sheet developed by the investigator, Binet Kamat test of intelligence [22] and Mangal Emotional Intelligence Inventory [23] were the tools used for the study. The investigator obtained permission from the Social Welfare Department of Kerala to collect data from the institutions under the department. Orphanages were selected randomly from the list of orphanages registered under the social welfare department of Kerala State, India. Binet Kamat test of intelligence is a standard test to assess intelligence in Indian population. This test provides an estimate of mental age and IQ. Mangal Emotional Intelligence Inventory measures emotional intelligence in four areas namely, intrapersonal awareness (knowing about one's own emotions), interpersonal awareness (knowing about other's emotions), intrapersonal management (managing one's emotions) and interpersonal management (managing others emotions). There are 25 items in each area and has a total score of 100. The subject has to respond either "yes" or "no" to each item. Mangal Emotional Intelligence Inventory was translated into the vernacular language and validated. The participants completed the Mangal Emotional Intelligence Inventory by themselves. Intelligence was assessed with the help of psychologist using Binet-Kamat test of intelligence.

## STATISTICAL ANALYSIS

Statistical analysis was done using Statistical Package for the Social Sciences (SPSS) version 20. Kolmogorov-Smirnov test was used to find out the normality of the data. The data was non-normal and non-parametric test was used for comparison. Mann-Whitney U test was used to find out the intelligence and emotional Intelligence between boys and girls living in orphanages and Spearman's rank-order correlation was used to find out the correlation between intelligence and emotional intelligence.

## RESULTS

The study subjects consist of 58 girls and 42 boys. The mean score of Intelligence in girls was 100.40 with a standard deviation of 6.69 and the mean score of intelligence in boys was 99.12 with a standard deviation of 5.95. No significant difference was found between girls and boys in intelligence [Table/Fig-1].

Variable	Gender	N	Means	Standard deviations	Mann-Whitney U value	Z	p-value
Intelligence	Boys	42	99.12	5.95	1011.00	-1.450	0.147
	Girls	58	100.40	6.69			

**[Table/Fig-1]:** The results of the Mann-Whitney U test between boys and girls in intelligence among the inmates of orphanages.

The mean score emotional intelligence in girls was 61.45 with a standard deviation of 11.81 and the mean score in boys was 59.95 with a standard deviation of 8.78 and there was no significant difference between girls and boys in emotional intelligence [Table/Fig-2]. On analysing the subscores of emotional intelligence, a significant difference between girls and boys was demonstrated in the interpersonal awareness subscore of emotional intelligence. Girls scored high in the interpersonal awareness subscore of emotional intelligence compared to boys [Table/Fig-2]. A positive correlation was found between intelligence and all the subscores and total score of emotional intelligence [Table/Fig-3].

Variable	Gender	N	Means	Standard deviations	Mann-Whitney U value	Z	p-value
Intrapersonal awareness of EI	Boys	42	15.07	2.93	1172.00	-0.323	0.746
	Girls	58	15.00	3.30			
Interpersonal awareness of EI	Boys	42	13.10	3.44	882.50	-2.355	0.019*
	Girls	58	14.84	3.37			
Intrapersonal management of EI	Boys	42	15.05	3.62	1057.00	-1.128	0.259
	Girls	58	15.72	4.40			
Interpersonal management of EI	Boys	42	16.74	3.33	1202.00	-0.112	0.911
	Girls	58	16.74	3.70			
Total EI	Boys	42	59.95	8.78	1035.50	-1.276	0.202
	Girls	58	61.45	11.81			

**[Table/Fig-2]:** The results of the Mann-Whitney U test between boys and girls in emotional intelligence among the inmates of orphanage. EI: Emotional intelligence; \*significant at 0.05 level

Variables	Correlation	Lower bound	Upper bound	Z	p-value
Intelligence-Intrapersonal awareness	0.603	0.560	0.646	7.483	<0.001**
Intelligence-Interpersonal awareness	0.692	0.657	0.727	9.490	<0.001**
Intelligence-Intrapersonal management	0.564	0.518	0.610	6.761	<0.001**
Intelligence-Interpersonal management	0.536	0.488	0.584	6.285	<0.001**
Intelligence-Total emotional intelligence	0.817	0.795	0.839	14.026	<0.001**

**[Table/Fig-3]:** Correlation between intelligence and emotional intelligence among inmates of orphanages. \*\*significant at 0.01 level. Spearman's rank-order correlation test was used

## DISCUSSION

Intelligence and emotional intelligence were found to be two significant psychological faculties that influence life achievement [8,20]. The present study demonstrated strong positive correlation between intelligence and emotional intelligence. Present study finding was consistent with other studies [5,6]. A study among 70 healthy subjects reported positive correlation between intelligence and ability to discriminate, think and understand different emotions [5]. Another study reported a correlation of 0.53 between ability emotional intelligence and general intelligence [6]. A study among males with psychopathic traits who were imprisoned reported positive correlations between general intelligence and experiential and strategic areas of emotional intelligence [24]. Both ability-based concept and self-report concept of emotional intelligence were reported to have relationship with IQ [25]. There are studies with findings not consistent with the present study. A study among 376 participants reported no significant correlation between intelligence and both intrapersonal and interpersonal components of emotional intelligence. [7]. This might be because of the wide age range (12 to 88 years) of the participants selected for the study.

There was no significant difference between girls and boys in intelligence and emotional intelligence in the study. Other Indian studies also reported similar findings [26,27]. No significant difference between boys and girls in emotional intelligence was reported by a Japanese study [28]. An Egyptian study among children between 5-11 years reported slightly higher IQ in boys compared to girls [29]. Environmental factors have a role in the development of intelligence and emotional intelligence. Kerala is a state known for gender equality and the educational facilities, exposure to the wider world and other opportunities are provided to boys and girls almost in the same manner. This may be the reason why boys and girls do not differ in intelligence or emotional intelligence.

Problem behaviours were reported to be high in institutionalised children and labelling them as aggressive increases their risk of being sidelined [9]. Low intelligence and low emotional intelligence increase impulsivity and risky behaviours [16,30,31]. Studies demonstrated low intelligence and emotional identification capacity among institutionalised children [15,16,18]. The policies and programmes to enhance the intelligence and emotional intelligence of the under privileged children living in childcare institutions not only decrease the risk of them being involving in deviant behaviour but also increase their life satisfaction. Author has published one more study using same variables but population set is different. The published study was on intelligence and emotional intelligence in school going children [32].

The present study attempted to find out the intelligence and emotional intelligence and its correlation among the children living in orphanages. The findings of the present study imply the importance of providing stimulating psychosocial environment for the under privileged children living in orphanages so that their psychological faculties can be improved. Future studies can be done to identify the relationship between these study variables and maltreatment/behavioural problems among institutionalised children. Studies can be planned to find the methods to improve intelligence and emotional intelligence in institutionalised children.

## Limitation(s)

Sample consisted of institutionalised children, and the result may not generalise to all children and adolescents. Confounding factors such as reason for institutionalisation, duration of stay in the institutions and presence of co-morbidities were not addressed.

## CONCLUSION(S)

The study demonstrated positive correlation between intelligence and emotional intelligence among inmates of orphanages. There was no gender difference in intelligence and emotional intelligence among inmates of orphanages.

**Declaration:** This study was conducted as a part of fulfilling the requirements for Ph.D.

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