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Expression beyond Words: An Analysis of Human Figure Drawing of Children and Adolescents with ADHD

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Children's' drawing are good indicators of emotion, self- esteem and social competence, as well as other personality aspects. Children in the phase of development, express their emotions more through images or drawings instead of words (Catte & Cox, 1999). The current study aims to explore emotional indicators in the drawings of children and adolescents with ADHD. More specifically, the objective of the investigation is to determine if there are gender and age –wise differences in emotional wellbeing. Human figure drawing of 52 children and adolescents were analyzed according to 5-category emotional problems (Skybo, Ryan-Wenger, & Su, 2007), based on emotional indicators of Koppitz (1968; 1984). The emotional problems were characterized as impulsivity, insecurity-inadequacy, shyness-timidity, anxiety and anger- aggressiveness. Emotional indicators amongst each category were analyzed to find if they were linked to gender and age groups. Chi-Square analysis showed gender differences within the emotional indicators; boys who participated in this study manifested more anger related issues than girls; whereas, girls showed more traits of shyness. Similarly, significant difference was found amongst age groups. On emotional indicators of shyness timidity, insecurity-inadequacy and impulsivity, children scored higher than adolescents. The findings suggested emotional wellbeing of children with ADHD increases with age, additionally while girls remain timidly shy and boys retain aggressiveness. The findings have important implications for clinical and educational psychology.

Keywords: ADHD, emotional indicators, gender, children, adolescents, HFD

Attention Deficit Hyperactivity Disorder (ADHD) is a debilitating disorder that may affect many spheres of an individual's life. This includes academic hindrance, social skills problems, and strained parent-child relationships (Faraone et al., 2001). According to DSM V, ADHD is a neurodevelopment disorder that starts in infancy and gradually develops till adolescence and adulthood (American Psychiatric Association, 2013). Where in the past it was thought that children gradually outgrow ADHD (Ingram, Hechtman, & Morgenstern, 1999; Okie, 2006), present-day studies revealed that 30–60% of individuals with ADHD carry on with prominent symptoms of the disorder into adulthood (Harpin, 2005).

Excessive hyperactivity is the most visible symptom of ADHD in childhood. However, in adolescence, inattention, impulsiveness, and inner restlessness are considered to be major difficulties (Ingram, Hechtman, & Morgenstern, 1999). Adolescents report a distorted sense of self and feel that their normal development is impeded because of ADHD (Krueger & Kendall, 2001). Children with this disorder are at greater risk for long-term negative outcomes, such as lower educational and employment attainment. The findings of the study by Sobanski and associates (2010) suggested that hyperactive behavior in school or surroundings or giving minimal attention in organizing tasks and paying no attention to details are some of the most common symptoms of ADHD. According to Hinshaw (1992), ''*the interpersonal problems of children with ADHD may well be the most salient and debilitating aspects of their*

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psychopathologic behavior'' (*p.*539). The symptoms of ADHD are most visible in children before they cross 12 years of age and the disorder persists for a long time but mostly this problem is evident when they tend to pay less attention in school (Bagwell, Molina, Pelham, & Hoza, 2001).

According to Classi, Milton, Ward, Sarsour, and Johnston (2012) ADHD in children is a common neuropsychiatric condition with 3% to 7% estimated prevalence. The characteristics of ADHD are categorised into hyperactivity-impulsivity and inattention that are more severe and are displayed more frequently than typically observed in children at their development levels. This results in weakening of numerous functioning domains and is manifested in more than one setting such as school and home. Gregory and Sadeh (2012) stated that ADHD imposes a burden on society, families and patients, which includes adverse effects on social outcomes and individual's education as well as on parents and patient's life quality, and increased spending and utilization of healthcare services.

Emotional and social difficulties are particularly problematic and common in adolescents with ADHD (Mir, Riaz, Bilal & Batool, 2016). Social difficulties are present in different forms and become the reason for family conflicts and peer problems whereas difficulties that are emotional often include reduced empathy, aggression and poor emotional self-regulation (Fomess, Kim & Walker, 2012). Difficulties that are mild become the reason of failure and further contribute towards conduct disorder, depression, anxiety, comorbid mental health disorders as well as related physical issue. It has been reported that major depressive disorders and anxiety disorders occur 12% to 50% in adolescents with ADHD in community samples (Classi et al., 2012). Comorbid mental health conditions, including depression and anxiety are extremely common in adolescents with ADHD and are linked to worse educational outcomes and greater functional impairment.

Even though the exact cause of this disorder is not known but existing research suggests that counseling and spending time with children can help resolve and reduce the severity of this issue (Faraone et al., 2001). Consequently, one effective way to deal with this issue is to observe children's drawing patterns. Therefore, to understand the hyperactive behavior of children in school and other settings, it is necessary to observe how they express themselves and this can be done through analyzing emotional indicatorsfor which Koppitz's model (1968) can be utilized. These drawing patterns provide the most natural and spontaneous expression of children's minds, feelings, imagination, and emotions (Catte & Cox, 1999).

The majority of therapists in the early 20th century, who were inspired by the theory of psychoanalysis, turned their focus towards children's drawings. It was believed that they could get insight, into those emotions and conflicts that children cannot express verbally (Catte & Cox, 1999). Children's drawings are the reflection of their attitudes, conflicts, and self-confidence (Cherney, Seiwert, Dickey & Flichtbeil, 2006; Pianta & Longmaid, 1999; Ryan-Wenger, 1998). Koppitz (1968) has highlighted the potential usefulness of drawing during middle childhood, as he said *"Drawing is a natural mode of expression for children age 5 to 11. Long before youngsters can put their feelings and thoughts into words, they can express both conscious and unconscious attitudes, wishes, and concerns in drawings. Drawing is a non-verbal language, a means of communication."* (*p.* 283).

Previously, evaluation of children's human figure drawings included the assessment of maturity with the notion of symbolizing the association amid intellectual and drawing capacity. At the same time, it was also used for the evaluation of projective aspects and some traits of personality (Dağlioğlu, Deniz & Kan, 2010). Self-expression is supposedly an outcome of drawing, so the discovery of a child's emotional state or personality is often claimed (Cherney et al., 2006; DiLeo, 1970, 1973; Hammer, 1981). The drawings made by children reflect development, skills, and imagination. However, most of the researchers (Burkitt & Watling, 2016; Krueger & Kendall, 2001) believe that it is an effective way of identifying problems and ways to solve mental issues faced by children.

Koppitz (1968) has identified that children are emotionally unable to express their feelings, and thus, it is used as a medium to show their anger and frustration. The emotional indicators are characterized mainly into 3 sections: omissions, quality signs, and special technical elements (Dağlioğlu et al., 2010). These indicators help assess the personality and self-confidence of children (Skybo, Ryan-Wenger, & Su, 2007). However, Deault (2010) stressed that drawings of children cannot be used as the only indicator to find the symptoms and causes of ADHD. The past researches (Cherney et al., 2006; Poster, 1989) have revealed that even though emotional indicators in children were studied in-depth still, the focus of future researches should revolve around those children who are facing negative situations or have some chronic problem (Burkitt, & Watling, 2016).

The ability of children to draw human figure is closely linked with neurodevelopment, especially towards the motor and visual skills development which are related to writing and drawing (van Meerbeke et al., 2011). Within the setting of human figure drawing, the test developed by Elizabeth Koppitz (1968) is considered as the most significant work whose outcomes correlated expressively with the percentiles of Intellectual Quotient and various other tests. In general, the association between mental maturity and developmental items, and the test's validity as an approximate measure of a child's intelligence has been documented and supported in different studies in which the test was utilized for the evaluation of child neuropsychology (Burkitt & Watling, 2016; Cherney et al., 2006; Poster, 1989). However, literature critiqued this connection due to a possible confusing effect of socioeconomic differences, social stereotypes, enriching experiences, history of child with presence of external stressors, informal and formal educational stimulation, learning experiences and many others (Dutta & Sanyal, 2016).

As stated by Burkitt and Watling (2016), emotional indicators in general do not display a direct relationship in association with objective scale. However, they have been emphasized as a potential tool for the multiplication of stressful situations such as sexual abuse and psychiatric upsets (manifestation of physical symptoms). While, other researcher emphasized on the efficacy of emotional indicators to screen depression and anxiety, as well as in the initial stages of pediatric consultation. It has also been suggested by various researchers (Dağlioğlu et al., 2010; van Meerbeke et al., 2011) that interpretation of emotional items must be executed carefully. Furthermore, it has been emphasized that statistically higher number of indicators with some emotional disturbance, variation amid well adapted children and emotionally affected children drawings are not significantly sufficient to be utilized clinically (Mukerjee, 2017). According to Van Meerbeke and colleagues (2011), it is essential to examine and investigate how items are assimilated into drawings, along with a comparison of their findings with additional tests of psychology, their existence in various drawings alienated in different times and the commentaries of children regarding their own drawings. Dutta and Sanyal (2016) stated that

before diagnosis, potential cultural differences must be taken into account. Nonetheless, the test of human figure drawing is used extensively in Colombia as well as in other different countries; however there is no standardization and validation of test in this perspective. A research study by Brechet (2013) investigated the effect of stereotyping of gender-role through drawing of human figures in children. The kids with age range of 5-16 years were asked to draw characters related to an extremely stereotyped social role and were then observed upon their approach. The outcomes of research displayed that male characters were exclusively drawn by the boys while the girls drew both male and female characters in balance. Hence, differences are displayed by the outcome of this research in comparison to those obtained with task attribution. With regard to boys, a greater gender stereotyping effect was observed as compared to girls, however it must be understood that stereotypically male roles were tested as social roles including computer-user, western settler, scientist, sportsman and that children were asked to draw characters freely. According to Dağlioğlu, Aalişandemir, Alemdar and Kangal (2010) representation of thoughts, objects and events is the key problem towards cognitive development which is represented in different ways, and children belonging to different age groups are observed to use different ways in order to reflect to their own world.

In the light of above mentioned literature it is being observed that studies about ADHD and use of drawing to tap the emotional problems of children were providing information about their own regions and countries. However, in Pakistan, the work on ADHD children is not sufficient. Due to the poor socio-economic status, illiteracy, parental illiteracy and other circumstances, children of Pakistan faced a number of problems including hyperactivity and inattentive behavior and outcome of these problems like behavioral problems, and poor quality of life. Therefore, the current study is an attempt to identify the difference in emotional wellbeing of children with ADHD with respect to age and gender. This study would be one of the few; in a country where mental health is highly ignored or mostly stigmatized .The review of the literature and the topic indicated the need of indigenous and intensive research in this particular area. Since most of the researches were conducted in the west, there is dearth of researches on this subject in Asia, specifically in Pakistan. Hence, the current study aims to determine if there are gender and age-wise differences in emotional wellbeing in children and adolescents with ADHD. Hence, it is being hypothesized that there will be difference in age groups (children & adolescents) with respect to emotional indicators i.e. Insecurity-inadequacy, shyness-timidity, impulsivity, anxiety and anger-aggressiveness. Moreover, there will be gender difference on emotional indicators i.e. insecurity-inadequacy impulsivity, shyness-timidity, anxiety and anger- aggressiveness.

Method

The current research is based on the quantitative research design in which a comparison of emotional indicators has been established based on the gender and age of the children and adolescents with ADHD.

Participants

By applying purposive convenient sampling technique 52 participants (35 boys & 17 girl) who were clinically diagnosed with ADHD by Clinical psychologist, were approached. Participants included 29 children with an age range between 6-11 years (M=9.27, SD= 1.73) and 23 adolescents with an age range between 12 -17 years of age (M=13.65, SD=1.77). They were

approached through e different mental health institutions such as hospitals, special schools and NGO's of Karachi. In order to maintain homogeneity only those children were selected who; were diagnosed by clinical psychologist as per meeting the DSM-V criteria for ADHD and all participants were school going. Those children who had co-morbid medical conditions were excluded from the study.

Measures

The measure used in this research consisted of permission letter from institute, organizations, hospitals and schools for collection of data, informed consent form, demographic sheet, A-4 size blank sheets.

Informed Consent

In the informed consent form, the purpose of the study, time taken to complete the drawing, and the confidentiality issues were mentioned. It was also mentioned that their participation would be voluntary, and that they would be provided with results of the study upon their requests. Consent was signed by parents or the legal guardian of participants.

Demographic Sheet

The demographic sheet contained personal information about participants such as name, age, gender, birth order, educational information and siblings with any mental disorder. This would provide necessary background information about them, and a context for the results.

Human Figure Drawing

Koppitz (1968) is widely utilized to assess emotional indicators in adolescents and children. Human Figure drawing (HFD) involves the drawing of a complete person by the child upon the examiner's request. There is no time limit for this test, but most children complete the drawing of a person within 10 minutes. The test involves two objective signs with reference to scoring; Developmental Items and Emotional Indicators (EIs). Developmental items are related to the age and maturation level of the children, and emotional indicators are related to attitudes and concerns of the children. The inter-rater reliability of HFD's emotional indicators (EIs) was good, averaging around 0.8 or 0.9. Skybo, Ryan-Wenger and Su (2007) divided EIs in to 5 categorical emotional problems i-e impulsivity, insecurity-inadequacy, shyness-timidity, anxiety, anger-aggressiveness. In the present study each category of emotional problem was tested separately for gender and age group by using the Chi-square test.

Procedure

Different clinics or hospitals which were dealing with ADHD clients were approached. After seeking permission from authorities or administrations several ADHD cases were collected. Parents or legal guardians of those cases were contacted and requested to sign the informed consent and fill in the demographic sheet. Prior to data collection, for building rapport with children crayons and colors were provided with different coloring sheets, and adolescents were given simple maze puzzles and cross words, so they do not lose their interest. Afterwards, the HFD test, according to Koppitz's instructions, was administered on every participant

individually. The researcher's instructions were, *on this piece of paper I would like you to draw a whole person. It can be any sort of person you like, as long as you make sure that it is a whole person and not a cartoon or a stick figure.* A pencil, eraser and A4 size paper were provided for human figure drawing. The children were allowed as much time as they wished to complete their drawings. Any queries were answered in a nondirective manner.

Ethical consideration

Parents and their participating children were informed about the purpose, significance, and implications of the study. They were ensured of the confidentiality of the information obtained from research and their right to anonymity. Then written informed consent was obtained from the parents (as participants of the study were minors), whereas verbal consent was obtained from the children after explaining the full scope of study before administration of HFD.

Results

Collected HFDs of children and adolescents were scored on presence =1 or absence=0 of each category of emotional problems (Skybo, Ryan-Wenger, & Su, 2007). The variables measured at nominal level. To analyze group differences Chi-square (non-parametric test which permit evaluation of dichotomous independent variable) applied by using SPSS version 22.

Table 1

Age-wise Differences on Emotional Indicators of Impulsivity Reflecting Impulsivity

Indicators	Age Groups				χ^2	*p*
	Children (n= 29)		Adolescent (n=23)			
	Yes %	No%	Yes%	No%		
Arms & Legs Asymmetry	86.2	13.8	78.3	21.7	.55	.45
Transparency	69	31	60.9	39.1	.37	.54
Omission of neck	55.2	44.8	26.1	73.9	4.4	.03
Poor integration	86.2	13.8	59.6	30.4	2.1	.14

Table 1 presents the age groups distribution of impulsivity related emotional indicators in human figure drawings of children and adolescents. As can be seen, 55.2% of children and 26.1% of Adolescents omitted the neck in their human figures. The difference is statistically significant which indicates that children omit neck more than adolescents.

Table 2

Gender-wise Differences on Emotional Indicators Reflecting Impulsivity

Indicators	Gender				χ^2	*p*
	Boys (*n*= 35)		Girls (*n* = 17)			
	Yes %	No %	Yes %	No %		
Arms & Legs Asymmetry	80	20	88.2	11.8	.542	.46
Transparency	65.7	34.3	64.7	35.3	.005	.943
Omission of neck	37.1	62.9	52.9	47.1	1.170	.27
Poor integration	77.1	22.9	82.4	17.6	.186	.66

There was no statistical difference found in emotional indications of boys and girls regarding impulsivity.

Table 3

Age-wise Differences on Emotional Indicator of Insecurity-Inadequacy

Indicators	Age Groups				χ^2	*P*
	Children (n= 29)		Adolescent (n=23)			
	Yes %	No%	Yes%	No%		
Tiny head	10.3	89.7	21.7	78.3	1.27	.25
Omission of hands	41.4	58.6	26.1	73.9	1.32	.25
Monster	58.6	41.4	21.7	78.3	7.14	.00
Omission of Arms	6.9	93.1	0	100	1.65	.19
Omission of legs	20.7	79.3	8.7	91.3	1.41	.23
Base line or Grass	24.1	75.9	0	100	6.41	.01
Omission of feet	31	69	17.4	82.6	1.27	.01

In the table 3 it was revealed that 58.6% children drew monster and 24.1% included base line or grass in their drawings as compared to adolescents 21.1% and 0 respectively. Whereas, 31% children did not include feet in their drawings. The difference is statistically significant ($p< .05$) which demonstrates that children showed nearly half of the indicators for insecurity-inadequacy as compare to adolescents.

Table 4

Gender-wise Differences on Emotional Indicators Reflecting Insecurity-Inadequacy

Indicators	Gender				χ^2	*P*
	Boys (*n*= 35)		Girls (*n* = 17)			
	Yes %	No %	Yes %	No %		
Tiny head	20	80	5.9	94.1	1.75	.18
Omission of hands	34.3	65.7	35.3	64.7	.00	.94
Monster	45.7	54.3	35.3	64.7	.50	.47
Omission of Arms	5.7	94.3	0	100	1.01	.31
Omission of legs	17.1	82.9	11.8	88.2	.25	.61
Base line or grass	14.3	85.7	11.8	82.2	.06	.80
Omission of feet	25.7	74.3	23.5	76.5	.02	.86

There was no statistical difference found in emotional indications of boys and girls regarding insecurity and inadequacy.

Table 5

Age-wise Differences on Emotional Indicator of Anxiety

Indicators of Anxiety	Age Groups				χ^2	*P*
	Children (n= 29)		Adolescent (n=23)			
	Yes %	No%	Yes%	No%		
Shading of Face	55.2	44.8	65.2	34.8	0.53	.46
Shading of body or limbs	37.9	62.1	56.5	43.5	1.78	.18
Shading of hands/ neck	37.9	62.1	56.5	43.5	1.78	.18
Feet pressed together	00	100	4.3	95.7	1.28	.25
Omission of eyes	13.8	86.2	13	87	.00	.93
Broken or sketchy lines	62.1	37.9	69.6	30.4	.31	.57
Hidden hands	10.3	89.7	17.4	82.6	.54	.46
Cloud or rain	34.5	65.5	17.4	82.6	1.90	.16

There was no statistical difference found in emotional indications of children and adolescents regarding anxiety.

Table 6

Gender-wise Differences on Emotional Indicators Reflecting Anxiety

Indicators of Anxiety	Gender				χ^2	*P*
	Boys (n= 35)		Girls (n = 17)			
	Yes %	No %	Yes %	No %		
Shading of Face	57.1	42.9	64.7	35.3	0.27	.60
Shading of body or limbs	42.9	57.1	52.9	47.1	.46	.49
Shading of hands/ neck	40	60	58.8	41.2	1.63	.20
Feet pressed together	0	100	5.9	94.1	2.00	.14
Omission of eyes	17.1	82.9	5.9	94.1	1.24	.26
Broken or sketchy lines	60	40	76.5	23.5	1.37	.24
Hidden hands	14.3	85.7	11.8	82.2	.06	.80
Cloud or rain	25.7	74.3	29.4	70.6	.08	.77

There was no statistical difference found in emotional indications of boys and girls regarding anxiety.

Table 7

Age-wise Differences on Emotional Indicator of Shyness-Timidity

Indicators	Age Groups				χ^2	*P*
	Children (n= 29)		Adolescent (n=23)			
	Yes %	No%	Yes%	No%		
Tiny figure	31	69	21.7	78.3	.563	.45
Short arms	44.8	55.2	26.1	73.9	1.94	.16
Arms clings to body	24.1	75.9	21.7	78.3	.042	.83
Omission of nose	31	69	4.3	95.7	5.88	.01
Omission of mouth	13.8	86.2	4.3	95.7	1.31	.25
Slanting figure	24.1	89.7	8.7	91.3	2.17	.14

Table 7 presents the age groups distribution of shyness-timidity related emotional indicators in children's human figure drawings. As can be seen, 31% of children and 4.3% of adolescents omitted the nose in their human figures. The difference is statistically meaningful ($p < .05$) which indicates that children omit the nose more than adolescents.

Table 8

Gender-wise Differences on Emotional Indicators reflecting Shyness-Timidity

Indicators	Gender				χ^2	*P*
	Boys (n= 35)		Girls (n = 17)			
	Yes %	No %	Yes %	No %		
Tiny figure	22.9	77.1	35.3	64.7	.90	.34
Short arms	25.7	74.3	58.8	41.2	5.40	.0s2
Arms clings to body	22.9	77.1	23.5	76.5	.00	.95
Omission of nose	11.4	88.6	35.3	64.7	4.19	.04
Omission of mouth	11.4	88.6	5.9	94.1	.40	.525
Slanting figure	8.6	91.4	35.3	64.7	5.70	.01

In the table 8 it was revealed that 58.8% girls drew short arms and 35.3% drew slanting figures in their drawings as compared to boys, 215.7% and 8.6% respectively.35.3% girls did not include the nose in their drawings. The difference is statistically significant ($p < .05$) this demonstrates that girls showed half of the indicators for shyness-timidity as compared to boys.

Table 9

Age-wise Differences on Emotional Indicator of Anger-Aggressiveness

Indicators	Age Groups				χ^2	*P*
	Children (n= 29)		Adolescent (n=23)			
	Yes %	No%	Yes%	No%		
Crossed eyes	17.2	82.8	4.3	95.7	2.08	.14
Teeth	34.5	65.5	47.8	52.2	.94	.33
Long arm	27.6	72.4	52.2	47.8	3.27	.07
Big hands	17.2	82.8	26.1	73.9	.60	.43
Genital	0	100	0	100	-	-
Big figure	24.1	75.9s	46.8	52.2	3.18	.07
Big hand	55.2	44.8	43.5	56.5	.702	.40

There was no statistical difference found in emotional indications of children and adolescents regarding anger and aggressiveness.

Table 10

Gender-wise Differences on Emotional Indicators of Anger-Aggressiveness

Indicators	Gender				χ^2	*p*
	Boys (n= 35)		Girls (n = 17)			
	Yes %	No %	Yes %	No %		
Crossed eyes	11.4	88.6	11.8	88.2	.00	.97
Teeth	48.6	51.4	23.5	76.5	2.98	.08
Long arm	51.4	48.6	11.8	88.2	7.60	.00
Big hands	25.7	74.3	11.8	88.2	1.33	.24
Genital	0	100	0	100	-	-
Big figure	42.9	57.1	17.6	82.4	3.21	.07
Big head	54.3	45.7	41.2	58.8	.78	.37

Table 10 represents the gender-wise distribution of anger related emotional indicators in children's human figure drawings. As can be seen, 51.4% of boys and 11.8% of girls drew long arms in their human figures drawing. The difference is statistically meaningful ($p < .05$) which shows that boys showed more indicators of anger-aggressiveness than girls.

DISCUSSION

ADHD children and adolescents illustrate their emotions effectively through drawing related activities. According to the report presented by the Dr. Philip Asherson at the Fifth World Congress (Frye et al., 2018) on Attention Deficit, emotional instability is prominent in people with ADHD and it acts as a distinctive source of impairment in these individuals. It is a chief symptom of the disorder. Moreover, these emotional complications lead to the impairments in home life, school settings and careers.

Hence, the main purpose of the study is to investigate the emotional indicators in the drawings of children and adolescents with ADHD. The foundation of this study is based on the 5 categories of emotional indicators in Human figure drawing by Koppitz's (1968). On analysis of the drawings, noteworthy gender differences were observed. Girls showed half of the indicators of shyness while boys show one of anger. According to Dağlioğlu, Deniz and Kan (2010) the emotional indicators are described as the equitable signs which reveal the anxieties and worries of children. The validation depends on the fulfilment of various characteristics, such as the inevitability of clinical validation, in which children must be discriminated on the basis of presence or absence of emotional problems. According to the age of children, analysis of excellence must be made. their rate of emotional problems, is present in less than 15% of all drawings; and not connected to the stage of growth thus not growing with age (Mukerjee, 2017). As indicated by a research finding, a figure with the dissolution of body parts demonstrates indecisiveness, weak bonding with peers and flaws within the individual, weak coordination in movement, and a lack of stimulants in the environment (Koppitz, 1968).

Earlier studies stated that impulsivity related drawings show emotional disturbances, or an organic or mental disorder. On comparison of boys and girls no prominent differences were observed on indicators of impulsivity. However, exclusion of neck was highly prominent in children when compared with adolescents. Although only one indicator of impulsivity appeared to be statistically significant, it thus follows that the children who participated in this study

manifested more impulsivity related drawings than adolescent. As per the explanation given by Machover (1949) this elimination is an indicator of weak coordination of impulses and behavior, immaturity in the child and refraining from the logical thought. According to Koppitz (1968) elimination of neck is the sign of immaturity, poor inner control and impulsive behavior.

On analysis of data for insecurity among individuals with ADHD, no difference was observed in gender. Significant difference was noticed on the age group basis as children drew monsters and base line more as compared to adolescents. Nearly half of the indicators appeared to be significantly different. It reveals that children experience more insecurities and lacking as compared to adolescents. Literature about the category of insecurity-inadequacy, describes that prevalence of insecurity- inadequacy related characteristics results in defects in the nervous system a vulnerable personality (Thomas ,1949) mental incapability and failure, (Koppitz,1968) disobedience, non-compliance of rules, unfriendly feelings and a shortage of power and strength (Levy, 1958; Machover, 1949; Yavuzer, 1 9 9 5)

On indicators of Anxiety, there was no significant difference found in gender or age groups. Overall girls scored high on anxiety. Similarly, adolescents' HFD records shows higher rate of anxiety which suggests that as they grow with ADHD, their anxiety increases. This increase can be due to social pressure or demands from parents or need for achievement. Adolescents with ADHD feel more anxious than children. Earlier studies show that the standards of anxiety in HFD are due to children's differences in appearance and physiology (Koppitz, 1984), low social interaction (Stone & Ansbacher, 1965) and fear factor. While some previous studies have concluded that girls are more easily scared than boys (Carroll & Ryan-Wenger, 1999; King et al., 1989; King Gullone & Ollendick, 1992; Stickler, 1996) .However the results reflect no prominent differentiation with in the levels of anxiety of girls and boys. These previous records are in line with the findings of the current research.

The results on Shyness –timidity revealed significant difference with respect to gender and age group. Girls produced significant difference on short arms, omission of nose and slanting figure; while, children produced this difference in omission of nose when compared to age groups. In past and current research, shyness-timidity features in children's drawings have reflected their shy and insecure emotions, depression, concerns with self-image, and weak inner control and social relations (Levy, 1958; Stone & Ansbacher, 1965; Yavuzer, 1995). While, short arms express, depression, negative conditions and a poor self-image (Lewinson, 1964). Another study (Dağlioğlu, et al., 2010) on behaviors of preschool children concerning emotional indicators deduce that compared to boys', girls were more introverted. Koppitz (1968) and another researcher (Stone & Ansbacher, 1965) explained, shyness-timidity in children's drawings as a reflection of their insecurity-shyness emotions, a weak self-image, depression, a weakness in inner control and in social relations. Progressively, the study conducted by Barkley (1997) suggests that children with ADHD are more likely to face poor peer relationships, school failure and familial conflict. In particular, lower scores in sub-domains of self-esteem such as *skills and talents* and *psychological well-being* in children with high scores of ADHD symptoms have been reported .On the whole, feelings of inadequacy and frustration are associated with children's low self-esteem which can lead to a worsening of behavioral symptoms. Indeed, a poor self-concept related to academic competence can directly contribute to the development of disruptive, antisocial behaviors in early adolescence (Classi et al., 2012). The findings of current study are in line with literature.

In the light of obtained findings, long arms were drawn more commonly by boys as compared to girls. Long arms have been accepted by previous researchers as ambitions of winning, effort to be loved and aggressiveness (Koppitz, 1968). Although only one indicator showed significant difference within the domain of anger–aggressiveness but this difference has been attributed to the Pakistani culture where families and society suppress aggressiveness in girls while they tolerate it in boys (Anwer, Masood, Younas & Ahmad, 2019). In age groups there are sno significant differencs, but adolescents were high on the anger aggressiveness indicators. It was suggested that comparatively adolescents are more aggressive and possess issues with controlling impulses.

Earlier analysis (Catt & Cox, 1999) related to anger-aggressiveness in children's drawings infer that these traits reflect sadistic feelings, a weakness in controlling stimulants, verbal aggressiveness, inadequacy in manual skills, body, related anxiety and ambition of winning. Long arms have been recognized by past researchers as determination of winning, effort to be loved and aggressiveness (Koppitz, 1968). Observations which spot aggressiveness in candidates have reported that as compared to girls, boys are more aggressive (Gürimek, Girgin, Harmanlı & Ekinci, 2004; Orçan & Deniz, 2004). In between two genders the difference is merely of physical strength on the boys' part, as well as families and the society suppressing aggressiveness in girls while they tolerate it in boys (Beirhoff, 2002).

Conclusion

The study focused on emotional wellbeing of children and adolescents with ADHD. The gender and age-groups analysis revealed significant difference between groups on emotional indicators; girls with ADHD, are shyer and more introverted, having weak self-image as compared to boys with said disorder. Whereas, boys with ADHD exhibit more aggressive behavior throughout their life span. The findings contributed towards the field of education. Additionally teachers and parents should be offered training about children's drawings and the ways of assessing these drawings so that they can understand children's inner worlds. It was revealed that children's drawings clearly reflected the stage of development they were going through. The findings of this study also authenticate the characteristics of the disorder (ADHD) and that manifestation of emotions varies across the developmental spectrum.

Limitation and recommendations

The findings of this research should be interpreted by taking the limitations into consideration. To begin with, the narrow magnitude of the sample of ADHD children and adolescents did not allow for more in-depth analysis. Secondly, the present sample belonged to ADHD only, multi groups comparison such as non-ADHD samples, Autism or other childhood disorders can be added for comparison. Future researches could advance the literature by comparing children with ADHD and comorbid symptoms. Furthermore, it is suggested that large groups should be studied for receiving a better understanding of emotional well-being of children with ADHD.

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