THE EFFECTIVNESS OF USING CHILDREN APPERCEPTION TEST(CAT) IN ASSESSING DEPRESSION AMONG CHILDREN WITH CHRONIC RENAL FAILURE.

[1] **Reham El- Saeed Alonsy Hashad,** [2] **Fawzia El- Sayed Abusaad ,**
[3]**E l Sayed Abd El latif El Naggar , and** [4]**Magda Ahmed Abd El-Aziz**
[1, 2, 4]Pediatric Nursing Department, Faculty of Nursing, Mansoura University
[3] Psychiatric Department, Faculty of Medicine, Mansoura University
E-mail of corresponding author:rehamkaled121@yahoo.com.

Abstract :
Chronic renal failure (CRF) is one of the most chronic diseases which are considered a major public health problem affecting human societies at all stages of development**.** It is characterized by a complete and irreversible loss of kidney function that requires dialysis or kidney transplantation to sustain life. This study aimed to assess the effectiveness of using Children Apperception Test (CAT) in assessing depression among children with chronic renal failure. The study was conducted in Hemodialysis Unit at El-Mansoura University Children's Hospital and Hemodialysis Unit at National Hospital of Sandoup in Mansoura City. A conveniance sample of 74 children aged 6 to 10 years, who are diagnosed with chronic renal failure since 6 months or more and free from other chronic illness .Three tools were used to collect necessary data which included a semi- structured interview questionnaire, The children's depression inventory to assess presence of depression among studied children and the children apperception test. *Results:* The results of this study revealed that the majority of studied children had depression with different level (91.9%) compared to 8.1% of them who had non depression and the children apperception test was effective in analyzing internal conflict and revealed hidden emotions that manifested depression. *Recommendations:* Regular and continuous training courses should be provided to nurses in order to improve their knowledge and practices regarding depression's assessment by using projective tests and team of nurses and psychologists should be available in hemodialysis units to provide care of psychological aspect of children .

Key Words: Chronic Renal Failure, Depression , Children, Children Apperception Test.

Introduction:

Chronic Renal Failure (CRF) is progressive, irreversible deterioration in renal function that gradually progresses to End-Stage Renal Disease (ESRD) in which the body ability to maintain metabolic, fluid and electrolyte balance fails, resulting in uremia or azotemia[1].

It result from congenital kidney, urinary tract abnormalities and hereditary kidney disorders in children [2],while globally the prevalence of chronic kidney disease in children is reported to be approximately 18.5-100 per million children[3].Otherwise the end-stage renal disease rates in black individuals are 2.7 times higher than in white individuals, which may be due to genetic susceptibility; other factors may include socioeconomic problems and limited access to medical care[4].

Dialysis and transplantation are the only treatment currently available for children with chronic kidney disease [5]. Dialysis is the process of separating

colloids and crystalline substances in solution by the difference in their rate of diffusion through a semi- permeable membrane. The methods of dialysis are peritoneal dialysis, hemodialysis, in which physician appointments, dialysis sessions and home medication therapy places a particular demands on a child's social life and consequently their families [6,7].

As a result of these demands on a child's social life, Those children may become more isolated and having psychological disorders such as anxiety, eating, elimination, attention defecit disorders and depression[8]. A study made by[9],who reported that, psychiatric disorders in all the studied pediatric patients at El-Mansoura University Children's Hospital were adjustment disorders, neurocognitive disorders, anxiety, elimination disorders and depression.

Depression is a public mental health problem that affects children and adolescents which has negative impact on their personal, academic, social, and family lives resulting in a depressed or irritable mood for at least two weeks and having at least five clinical signs and symptoms[10].

Children's apperception test is an individually administered projective personality test appropriate for children aged from three to ten years, which is intended to measure the personality traits, attitudes, and psychodynamic processes evident in prepubertal children. By presenting a series of pictures and asking a child to describe the situations and make up stories about the people or animals in the pictures [11]. Today, CAT is more often used as an assessment technique in clinical evaluation and the test may be used directly in therapy or as a play technique in other settings[12].

Pediatric nurses have challenge and responsibility to help children with chronic renal failure on regular heamodialysis to gain advice, support, advocacy and education that improve children physical health status. Pediatric nurses play an important roles in clinical setting, in addition to their role as a researcher to discover the predisposing events that associated with progress or regress in children's health status, however it is difficult to figure out depression in a child with a chronic disease because some of the symptoms of depression may overlap with the symptoms of the chronic disease. Using of children's apperception test can be helpful in revealing hidden emotions, negative feeling and internal conflicts that help in increasing children sense of adaptation to the disease and enhance overall quality of life [14].

Research Questions:

1-Is there depression among children with chronic renal failure (male&female)?

2-Is the children apperception test(CAT) effective in assessment of depression among children who suffer chronic renal failure ?

Materials and Methods:

Materials*:*

Design:

A descriptive Analytical research design was used in the present study

Setting:

The study was conducted in Hemodialysis Unit at El-Mansoura University Children's Hospital and Hemodialysis Unit at National Hospital of sandoup in Mansoura City

Subject:

The study included a convenience sample of 74 children who suffering from chronic renal failure and attended the hemodialysis unit at the selected setting during three months.

Children's inclusion criteria*:*

- Age from 6-10years. .
- Diagnosed   with   chronic   renal failure since 6 months or more
- Both sexes
- Free from other chronic diseases

Tools:

Data were collected using the following tools:

Tool I-Asemi - Structured Interview Questionnaire: that was developed by the researcher after reviewing the related literature. This tool was written in an Arabic language to suit the level of understanding of children. It was composed of the following

Part (1)

A- **Personal data of children,** which includes: name, age, sex, level of education, birth order and residence and socioeconomic status

B- **Children's clinical data,** which includes:duration of dialysis or treatment, number of dialysis sessions per week, & per hours, medication, side effects of dialysis and presence of a transmitted infectious disease from machine of dialysis..

Tool II – The Children's Depression Inventory:

The children's depression inventory adopted from[15] and translated to Arabic version by[16], which is a 27 - multiple - choice self - report composed of items relating to symptoms of depression (such as social isolation , feeling of sadness, fatigue , low energy, loss of appetite and lack of safety،.... Each item consists of three statements from which the child are instructed to choose the one statement that best describes them over the last two weeks. Each question is designed to assess specific symptoms of depression and the three choices range from mild or limited symptomatology to severe or maladaptive symptomatology. Each item scored 0, 1 and 2 with score of 2 representing the most severe choice. The Children's Depression Inventory was used with total score (54) marks, distributed for measuring the severity of depression as follows:

- Non of depression with score 14 marks

- Mild depression with score range from 15 to 22 marks
- Moderate depression with score range from 23 to 29 marks
- Severe depression with score range from 30 to 54 marks.

Tool III- Children Apperception Test (CAT): That is intended to measure the personality traits, attitudes, and psychodynamic processes evident in prepubertal children, by presenting a series of 10 pictures and asking a child to describe the situations and make up stories about the people or animals in the pictures[12]. In CAT, there is no right or wrong answer. Thus there is no numerical score or scale for the test. The test administrator records the essence of each of the stories told and indicates the presence or absence of certain thematic elements on the form provided.

Methods:

- An official letter was directed to responsible authorities of study setting to take their permission to conduct the study after explaining the aim of the study.
- The tool was developed after reviewing the relevant literature and tested for its content validity by 5 experts in pediatric and psychiatric field who revised the questions for clarity, relevancy, applicability, comprehensiveness, understanding and ease for implementation and according to their opinions minor modifications were applied.
- The reliability of the children's depression inventory was done by measuring the internal consistency of the items using the Cronbach's alpha coefficient. The tool was reliable as r =.79.
- A pilot study was carried out on 8 of Children with chronic renal failure who attend the mentioned setting to test the clarity, feasibility of the questions and applicability of the research tools.

Children who shared in the pilot study were excluded from the final study sample as a minor modifications were applied according to the opinions of psychiatric expert , as each item was recorded alone to be scored to ease for its implementation.

- Every child was interviewed individually by the researcher to obtain basic data and assess depression. The researcher was available 3 days per week, where the children were available for hemodialysis in the selected setting. The duration of each interview lasted from 15- 20 minutes.

- The researcher administer ten cards of children apperception test to 30 depressed child with chronic renal failure and different level of depression not to the whole sample because the analysis of children apperception test is qualitative technique that applied to smaller, focused samples not on large samples as in quantitative research according to [17], at the same time this specialized form of qualitative research is called cognitive testing or pilot testing which is used in the development of quantitative survey items and the result of the analysis or explanation of one case can be enough to be generalized on other cases [18] . Every child was asked to describe the situations and make up stories about the people or animals in the pictures that takes 20 - 45 minutes, then analyzed in Arabic language. The content validity of the analyzed pictures was tested by 5 experts in child psychology field who revised the explanation for clarity, relevancy, applicability, comprehensive-ness and understanding

- **Ethical consideration:**
    Ethical approval was obtained from Research Ethics Committee at the Faculty of Nursing - Mansoura University, oral consent was obtained from every child and the caregiver for their participation in this study after explaining the aim of the study and Confidentiality of data and anonymity as well as child with their care giver's right to withdraw from the study at any time was ascertained.

Data collection of this study was carried out in three months from beginning of May to the end of July, 2014.

Data Analysis

The collected data were coded and entered in a data based file using the excel program for windows. Frequency analysis and manual revision were used to detect any errors. After complete entry, data were transformed to the statistical package of social sciences (SPSS) version 16.0 by which the analysis was conducted applying frequency tables with percentages. Data were revised, coded and analyzed. Data was presented as number and percent. The chi –square test were used to test significant differences between characteristics of the studied children and depression level. All tests were performed at a level of significance ($P \leq 0.05$).

Limitation of the Study

- Interrupted setting, because of building modification in hemodialysis unit at the general hospital and all cases transferred to national hospital at Sandoup city.

- CAT consists of ten cards of animals and the same of number of humans, but this study used ten cards of animals because the applying of 20 cards was very boring for children and take along time. Also they refused to give their responses on cards of humans and they said pictures of human are similar to that of animals.

Results:

Table 1 represented the socio-demographic characteristics of the studied children. It was found that almost half of children 46% were in the age group from 6to less than 8 years, while 54% were in

the age group from 8 to 10 years with a mean age 8.01±1.329 years. Fifty percent of children were females and 26% of them were in third year of primary school ,while three quarters of them from rural areas and only 19% from urban areas. Thirty percent of children were the third in birth order. Almost half of them 47% had low socioeconomic status and only11% of them had high socioeconomic level.

Table 2 illustrated clinical characteristics of studied children . It was found that almost three quarters of the studied children 73% started hemodialysis since 3 - 6 years ago and only 5% of them started hemodialysis since less than one year ago with a mean ± SD of 3.25 ± 1.54 years. All studied children on a three session of dialysis per week, more than half of them had blood pressure irregularities as aside effects of heamodialysis, 64% and only 12% of them had drowsiness, nausea and vomiting . Also the majority of children had a transferred infectious disease mainly in the form of virus "c" was 86% and only 14% of children didn't have a transferred infectious disease. Fifty nine percent of children spend 3 hours in dialysis session and 41% of them spend 3.5 hours in dialysis session with a mean of 3.2 ± 0.25 hours.

Regarding depression among children with chronic renal failure **figure I** showed the number and percentage distribution of depression among children with chronic renal failure. It was revealed from the table that only 8.1% of the studied children had no depression and the rest of them had depression that categorized into mild depression in 28.4% of children , more than one third of them had moderate depression and 24.3% of them had severe depression.

Table 3 illustrated relation between the studied children's characteristics and different levels of depression**.** It was clear from this table

that almost three quarters of children had mild depression, 71% were in age from 6 to less than 8 years had mild depression, while 72%, 67% of them were in age from 8 to 10 years had moderate and severe depression with a mean of 7.31±1.11 years. There was statistical significant differences between children's age and levels of depression (p=**.003)**. Regarding children's sex, it was found that more than half of the studied children had mild depression were males 52%, while more than half of them 52%, 56% had moderate and severe depression were females and the difference was not statically significant (p= **.808).** In relation to child's residence this table illustrated that, the majority of children had moderate and severe depression from rural areas 86%, 89% compared to 14%, 11% of them from urban areas and the difference was not statically significant (p=**. 253).**

relation between children duration of treatment, the presence of infectious disease and their depression level was presented in table **(IV).** It was revealed from this table that, more than half of children 52% had mild depression were undergoing hemodialysis since 3 to 6 years and only 19% of them dialysated since less than 1 year and the difference was not statically significant (p=**.586).** Also this table showed that more than three quarters of the studied children had severe depression were infected with virus "c" 78% compared to 22% of them not infected with infectious diseases**.** There was statistical significant differences between the presence of infectious disease transferred among children and levels of depression (p=**.024)** .

Table 4 illustrated number and percentage of items represent depressive symptoms repeated in cards of children apperception test. It was revealed from this table that, the first ten children who suffered from mild depression appear their internal feeling and responses in form of 5

items approximately with high percentage than other repeated statements that included continous feeling of sadness and hoplessness 52%, having irritability or anger and crying 28%, feeling of physical complaints that don't respond to treatment 28%, feeling of social withdrawal and isolation 18% and having thoughts of death or suicide 16% respectively. Regarding children had moderate depression it was found that, more than 5 statements repeated than other statements in the form of   fifty eight percent of repeated statements were continous feeling of sadness and hoplessness, having irritability or anger and crying   36%, feeling of social withdrawal and isolation 26%, aggression toward others 24%, having sense of fatigue and low energy 18% and feeling of physical complaints that don't respond to treatment 16%, change in sleep-sleeplessness 14%, feeling of worthlessness or guilt 10% and having thoughts of death or suicide 10% respectively. Concerning children had severe depression this table clarified that, more than 9 statements repeated than other statements that manifested depression respectively

Table 1 : socio-demographic characteristics of the studied children

Characteristics	No=74	%
Age in years		
6 < 8	34	46
8 : 10	40	54
Mean±SD	**8** ±1.33	
Sex		
Male	37	50
Female	37	50
Education level (primary school)		
Seconed	15	20
Third	19	26
Fourth	17	23
Fifth	12	16
Six	11	15
Residence		
Rural	60	81
Urban	14	19
Birth order		
First	15	20
Sceond	18	24
Third	22	30
The last	19	26
Socioeconomic status		
High	8	11
Middle	22	30
Low	35	47
Very low	9	12

Table2: Clinical characteristics of the studied children.

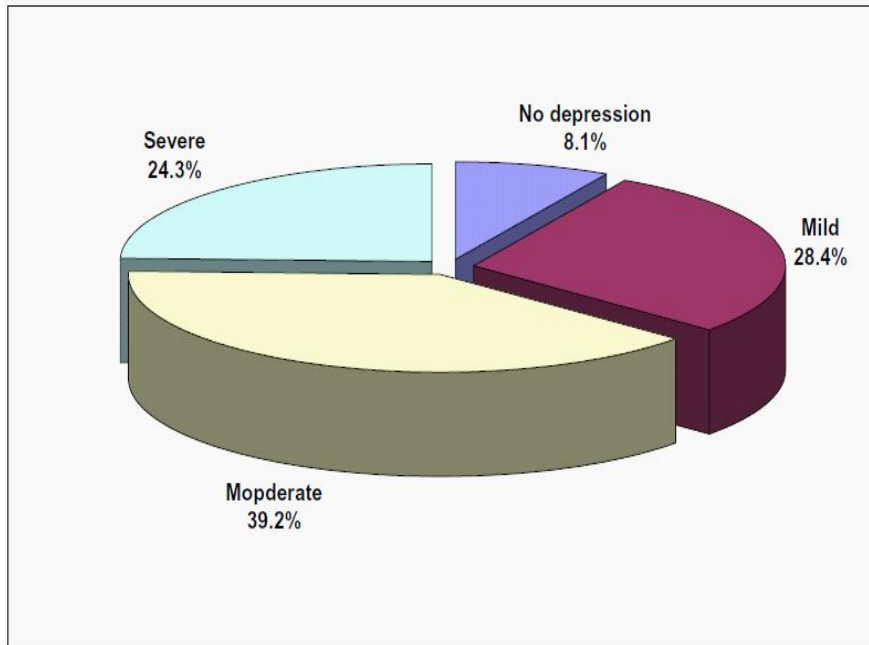| Characteristics	No= 74	%
Duration of treatment/year		
<1	4	5
1-3	16	22
3-6	54	73
Mean±SD	3.25 ± 1.54	
Side effects		
Headach	25	34
Hypotension&hypertension	40	64
Dizznes &drowzness,nausea ,vomiting	9	12
Presence of infectious disease transferred		
Yes (virus 'c')	64	86
No	10	14
Number of dialysis / hours in session		
3hours	44	59
3.5 hours	30	41
Mean±SD	3.2 ± 0.25	

Figure 1: Number and Percentage Distribution of Depression among Children with Chronic Renal Failure

Table 4.: relation between the studied children's characteristics and different levels of depression in percentage distribution (n=74).

Depression Level \ Items	Non		Mild		Moderate		Severe		χ2	P
	No	%	No	%	No	%	No	%		
Age in years										
6 < 8	5	67	15	71	8	28	6	33	13.957	.003
8 : 10	1	17	6	29	21	72	12	67		
Mean±SD	7.33 ± 1.47		7.31± 1.11		8.53 ± 1.20		8.22 ± 1.35			
Sex										
Male	4	67	11	52	14	48	8	44	.971	.808
Female	2	33	10	48	15	52	10	56		
Residence										
Rural	5	83	14	67	25	86	16	89	4.076	.253
Urban	1	17	7	33	4	14	2	11		

(*) Statistically significant at p < 0.05

Table (5): relation between children's duration of treatment per year, the presence of infectious disease and their depression level (n=74).

Depression Level \ Items	Non		Mild		Moderate		Severe		χ2	P
	No	%	No	%	No	%	No	%		
Duration of treatment/year										
<1	0	0	4	19	9	31	3	17	4.673	.586
1-3	2	33	6	29	10	34.5	7	39		
3-6	4	67	11	52	10	34.5	8	44		
Presence of infectious diseases transferred										
Yes (virus 'c')	1	17	10	48	20	69	14	78	9.423	.024
No	5	83	11	52	9	31	4	22		

(*) Statistically significant at p < 0.0

Table 6: Number and Percentage of Items Represent Depressive Symptoms Repeated in Cards of Children Apperception Test (n=30).

Depression / Itemes of depressive symptoms Repeated in cards	Mild T Sample = 10		Moderate T Sample = 10		Severe T Sample = 10		Total (N) T Sample = 30	
	No	%	No	%	No	%	No	%
Feeling of social withdrawal and isolation#	18	18	26	26	38	38	82	27
Continuous feelings of sadness and hopelessness #	52	52	58	58	60	60	170	57
Having irritability or anger & crying #	28	28	36	36	60	60	124	41
Having sense of fatigue and low energy	10	10	18	18	18	18	46	15
Feeling of physical complaints that don't respond to treatment	28	28	16	16	32	32	76	25
Feelings of worthlessness or guilt	0	0	10	10	12	12	22	7
Having thoughts of death or suicide	16	16	10	10	24	24	50	17
Reduced ability to function during events and activities at home or with friends, in school, extracurricular activities, and in other hobbies or interests	0	0	4	4	18	18	22	7
Change in sleep-sleeplessness	2	2	14	14	18	18	34	11
Loss of appetite	6	6	6	6	14	14	26	9
Lack of safety, loss of support	2	2	0	0	14	14	16	5
Aggression toward others #	14	14	24	24	44	44	82	27

#more than one answer

Discussion:

The problem of renal failure is increasing rapidly which has been recognized as significant health problem and it's prevalence is increasing in worldwide. The children maintained on hemodialysis are facing multiple and potentially overwhelming stressors which places particular demands on a child's social, psychological, physical functioning and consequently their families . As result of these demands on child's social life they become more isolated and having psychological disorders such as anxiety, eating, elimination, attention defecit disorders and depression. But in children with chronic renal failure it may be difficult to figure out depression in a child with a chronic disease because some of the symptoms of depression may overlap with the symptoms of the chronic disease

.While these urges and symptoms were hidden under the conscious mind that could be revealed through projective tests, in which children exposed to an ambiguous stimulus, such as a picture and asked to describe what he or she perceives in the stimulus .

The finding of the current study revealed that almost half of studied children were in the age group from 6 to less than 8 years and this percentage increased to more than half between 8-10 years among children **(table I).** This result was in an agreement with El-Tigani and USRDS [19,20], who studied the chronic renal failure in Khartoum state and Sudan and stated that, frequency of CRF increases with age and is much more common in children 7years than in those younger than 7 years . In my opinion this

may be due to the rapid growth and development associated with this age group, also might be related to chronic renal failure is a silent disease and children can't experience symptoms until they have severe renal dysfunction.

The finding of the current study revealed that, approximately the percentage of female suffered from chronic renal failure was equal to percentage in male **(table1).** This result is in an agreement with USRDS [20], which found that, the percentage of chronic renal failure among school - age children was equal in both sexes. But this result is in congruence with Jameala and Elsayed**,**who studied CRF among school age children in the western area of Saudi Arabia [21,22]**,** who stated that frequency of CRF was higher in male than female. Also Elsayed illustrated the same result among children and adolescent in Tanta (Egypt).

The present study revealed that, the majority of children with CRF undergoing hemodialysis had infectious disease transmitted in the form of HCV **(table 2).** This was in the same line with Hammad and Zaghloul [23, 24]**,** who stated that, the frequency of HCV exposure in Egyptian children with chronic renal failure appears to be very high. This may related to improper dialysis machine disinfection and frequent blood transfusions to child.

Having chronic disease during childhood confers large risk of developing psychiatric disorder such as depression that impose a significant stressor with psychological and social impact on the children and their families [25]**.** As regards

frequency of depression among children with CRF on regular hemodialysis. It was illustrated from the current study that, the majority of the studied children had depression with different level compared to 8.1% of them who had no depression **(figure 1).** This result was in an agreement with Abd-Elsalam [26]**,** who reported that, the majority of children with CRF in Zagazig city had depression. The finding of the current study might be explained in the light of the fact that children on regular dialysis experience more distressing physical symptoms, more medication and investigation that affect their social relationship, friendship and school attendance which play vital role in triggering depression, while this result was contradicted with Bakr [9]**,** who stated that less than one quarter of the children in Mansoura had depression 10.2% from the prevalence rate of psychiatric disorders among children with CRF that was found about 52.6% .

The results of the current study illustrated correlation between children's age and their different levels of depression. It revealed that, children aged 6 to less than 8 years had higher frequency of mild depression than other levels of depression **(table 3),** while children aged 8 to 10 years had and at higher frequency of moderate and severe depression compared to the minority of those children who had no depression **(table 3)**. The results of Esmaeeli [26]**.** confirmed that, the majority of children aged 8-12ys with chronic renal failure in Iran had moderate to severe depression. This might be due to children

at this age were thinking about their body image in comparison with their peers and fear of death as they become aware that there is no cure from this disease.

The current study illustrated that, more than three quarters of the children had severe depression were infected with virus 'c' compared to less than one quarter of them weren't infected with infectious disease**(table 4)** .This result was supported by James [27], who found that, the majority of children infected with virus c had high depressive symptomatology. This might be due to infection with virus' c' can complicate their condition and affect negatively on their prognosis.

Concerning analysis of the children apperception test cards. The result of this study illustrated significant themes in the form of statements or items which represent symptoms of depression . The number of repeated themes assure the severity of depression . The finding after introducing cards to ten children had mild depression found that, there was higher frequency of "5" depressive symptomatology that repeated in ten cards than others symptomatology **(table 6)** . This result was in an agreement with DSM-IV-TR [28], which reported that presence of manifested five symptoms of depression was classified as mild depression . This finding proved that, CAT was effective in analyzing internal conflict and revealed hidden emotions that manifested depression.

Also when introducing the children apperception test cards to the second ten children had moderate depression . The

results illustrated that there was higher frequency of 9 themes that represent depressive symptomatology **(table 6).** This result was supported by Richardson and Katsenellenbogen and DSM-IV-TR [28, 29], which stated that, presence of more than "5" symptoms of depression classified as moderate . This might be explained the fact that CAT was able to measure areas of children's unconscious mind such as, fears, anxiety and attitude that confirm depression.

As well as after introducing cards to the last ten cases who had severe depression. There was higher frequency of 12 themes represent depressive symptomatology according to it's repetition **(table 6)** .This result was in an agreement with Richardson and Katsenellenbogen and DSM-IV-TR [28, 29], who stated that, presence of more than nine symptoms of depression classified as severe depression. The analysis of 30 depressed cases was in congruence with [30] , who stated that CAT cards introduced to Italic children revealed themes in form of word repetition which represent conflicts types among children. This findings that result from analysis of CAT revealed all symptoms of depression which were found in children depression inventory. Children response to CAT (animals) pictures easily than that of humans pictures in the current study ,which is in an accordance with [31], who reported that, the black and white drawings show that a pictures of animals are less threatening for young children than humans pictures and those children

would ascribe unacceptable traits or emotion to animals more easily, while a parallel version with human figures is available for older children aged 10 years and more.

So this findings of this study support the children apperception test and its effectiveness in assessing depression among children with chronic renal failure.

Conclusion:

Based on the findings of the current study, it was concluded that almost all the studied children had depression and the children apperception test was effective in revealing the hidden emotion and symptoms of depression .Statistical significant differences were found between different levels of depression and age of children and presence of transferred infectious diseases.

Based on the findings of the present study, the following recommendations are to be considered:

- Regular and continuous training courses should be provided to nurses in order to improve their knowledge and practices regarding depression's assessement and early detection of it in children with chronic illness.
- Professional trained team of nurses and psychologists should be available in hemodialysis units to provide care of psychological aspect of children and not focusing on care of their physical status only.
- Establishing group therapy for depressed children with chronic renal failure is mandatory to change

children's pessimistic view of their status and management .
- Various coping strategies such as social support and guided imagery should be used to help children to cope with the stressors related to their status and hemodialysis management

Corresponding author:

Reham El-saeed ALonsy Hashad. Pediatric Nursing Department, Faculty of Nursing, Mansoura University.

References:

1- **Gulatin, S., and Langman, CB. (2012):** Chronic kidney disease in children. Available at http://emedicine.medscape.com/article / 984358-treatment. Accessed at 21/7/2012.

2- **Luxner, KL. (2008).** Delmar's pediatric nursing care plan, 3rd ed, Australia: Thomson Delmar Learning Co., PP, 186-190

3- **Harambat   ,J.,   Karlijn,J., Vanstralen, Jonjinkim and Jane Tizard, E. (2012).** Epidemiology of chronic kidney disease in children. Pediatr Nephrol. 2012 Mar., 27(3):P

363-373.   doi: 10.1007/s00467-011-1939-1

4- **Choi   ,AI.,   Rodriguez,   RA., Bacchetti,   P.,   Bertenthal,D., Hernandez GT., & O'Hare, AM. (2009).**White/black racial differences in risk of end-stage renal disease and death.Am J Med. Jul.,122(7), PP, 672-8.

5- **Hockenberry, M.J., and Wilson, D. (2013).**Wong's Essentials of Pediatric nursing. 8 th ed., Mosby, Elsevier, Canada, pp, 969-971, 579 -594.

6- **Payot, A**., and **Barrington, KJ. (2011).**The quality of life of young children and infants with chronic medical problems. Curr Probl Pediatr Adolesc Health Care.,41., PP,91-101.

7- **Hockenberry, MJ., Wilson, D. and Winkel Stein, M. (2009).** Wong's essential of pediatric nursing. 8th ed. Philadelphia: Mosby Co., PP, 1001-1006, 1008.

8- **Fadrowski**, J., Cole, SR., Hwang, W.,   Fiorenza,   J.,   Weiss ,RA.,&Gerson, A. (2009).Changes in physical and psychosocial functioning among adolescents with chronic kidney disease. Journal of pediatric Nephropathology,21,394-9.

9- **Bakr ,A., Amr, M., Sarhan, A., Hammad, A., Ragab, M.,and El-Refaey A. (2007) .** Psychiatric disorders in children with chronic renal failure.Pediatr Nephrol.,22(1), 128-31.

10- **Chrisman, A., Egger, H., Compton, SN., Cur Ball, J., Blindler, R., and Cowen, K. (2008):** Principles of pediatric nursing (caring for children): Alterations in gastrointestinal function, 4th ed, chapter 25, Pearson Company, Boston, Pp: 774-75.

11- **McCoy and Dorothy. (2005)**. The Ultimate Guide to Personality Tests. Inglewood, CA: Champion Press.

12- **Paul, and Annie Murphy. (2009).** The   Cult   of   Personality: How Personality Tests Are Leading Us to Miseducate Our Children, Mismanage Our Companies, and Misunderstand Ourselves. Riverside, NJ: Simon & Schuster.

13- **Kimmel, PL., and   Peterson, RA. (2013).** Depression in end-stage renal disease   patients   treated   with hemodialysis: Tools,   correlates, outcomes, and needs. *Semin Dial.* .,18(2), PP,91-97.

14- **Meyer, Gregory J. and Kurtz, John E.(2008) .**'Advancing Personality Assessment Terminology: Time to Retire "Objective" and "Projective" As Personality Test Descriptors', Journal of Personality Assessment, 87: 3,PP, 223 — 225

15- **Kovacs, M. (1985**). The children's depression   inventory   (CDI). Psychopharmacol. Bull. 21, PP, 995-998.

16- **Garieb,G. (2012).** Arabic version of children's   depression   inventory. Psychological Department, Faculty of Education,Al-Azhar   University. Available   at   EL-Angluo   Liberary, Egypt

17- **Denzin, N. K., & Lincoln, Y. S. (2011).** The   SAGE   Handbook   of

qualitative research (4th ed.). Los Angeles: Sage Publications

18- **Creswell and John. (2008**). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Sage.Available at http://en. Wikipedia.org/ wiki/qualitative-reseaech

19- **Eltigani, TM.,Ali, Mohamed, B., Abdelraheem,Reem,M.,Mohamed,E inas,G.,Hassan , Alan, R. Watson. (2009).** chronic renal failure in Sudanese children : etiology& outcome. Pediatr Nephrol.Vol:24.,p.349-53 .

20- **Un*i*ted States Renal Data System USRDS. (2010)** Annual data report: atlas of chronic kidney disease and end-stage renal disease in the United States. Bethesda, Md: National institutes of health, national institute of diabetes and digestive and kidney diseases. Accessed at 13- 6- 2011 Available

http://www.usrds.org/adr.htm

21- **Jameela,A.,Kari,(2006).** Chronic renal failure in children in the western area of Saudi Arabia. Saudi J. kidney disease transplant .Vol ,17.,p.19-24.

22- **Elsayed,E.,EL-Soreety,W., Elwany,T., and Naser,F. (2012).** Effect of nursing intervention on the quality of life of children undergoing hemodialysis . pediatric nursing department , faculty of nursing ,Tanta university, Tanta,egypt.Available at http://www. Science. site.com

23- **Hammad, AM. and Zaghloul, M.H. (2009):** Hepatitis G virus infection in Egyptian children with chronic renal failure (single centre study) Ann Clin Microbiol Antimicrob., 8 (4) PP, 8-36.

24- **Daniel, M., Pacheco,(2005).** Comparison of Chronic Depression Inventory Scores of Children Diagnosed with Chronic Renal Disease at Two Points in duration of their illness. Daniel M. Pacheco University of New Mexico School of Medicine. Available at epository .unm.edu/.../ **Pacheco** %20 Final % 20Paper.**pdf.**

25- **Mohammed, M., mohammed, A., Abdo,A., Yousef,U., saber, A. (2014)**. Assessment of depression and anxiety in children on regular hemodialysis . Department of pediatric, department of psychiatry , faculty of medecine, Zagazige university, Zagazige, Egypt.Vol:33.,p.100-104

26- **Esmaeeli, M., Erfani, Sayar, R., Saghebi, A., Elmi ,Saghi, Rahmani, Sh., Elmi ,S., Rabbani Javadi A.,(2014).** Screening for Depression in Hospitalized Pediatric Patients. Iran J Child Neurol. 2014 Winter., 8(1),47-51.

27- **James, R., Rodrigue, William Balistreri etal., 2010 .(**Impact of Hepatitis C Virus Infection on Children and their Caregivers: Quality of Life, Cognitive, and Emotional Outcomes. J Pediatr Gastroenterol Nutr; 48(3): 341-347.

28- **Diagnostic and statistical manual of mental disorders, Fourth Edition,**

Text Revision DSM-IV-TR of American Psychiatric **association. (2013***).* Classification and diagnosis of mental disorders. Available at http://en.wikipedia. org/wiki/ DSM-٥. accessed 18-5-2013. ,p,947 .

29- **Richardson,L.,andKatzenellenboge n, R. (2007**). Childhood and Adolescent depression: The Role of Primary Care Providers In Diagnosis and Treatment. Curr Probl Pediatr Adolesc Health Care.Vol.35, PP, 1-24.

30- **Lis, A., Mazzeschi, C., Salcuni, S., and Zennaro, A. (2005).** The Children's Apperception Test Evaluation Form: Initial Data: Psychological ReportsVol.,96(3),PP,755-768.Available   http:// www.cohendelara.com/pdf/chapter_0 3.pdf.

31- **Haworth, M.R. (1986):** Childredren's Apperception Test and Projective Techniques with Children. New York, pp: 37-72. available athttp://www.cohendelara.com/pdf/ch apter-03.pdf