# Effect of Palliative Care Plan On end-stage renal disease Patients Undergoing Hemodialysis

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## Abstract

**Background:** Palliative care is defined as a treatment given to control pain and undesirable symptoms of chronic or serious illnesses where there is no reasonable anticipation of a cure for patients. Determination patient and early referral to palliative care decrease suffering and improve symptom management in these patients; also it can reduce overall health care utilization and costs if initiated early in the disease course. **Aim of the study** was to evaluate the effect of Palliative Care Plan On end-stage renal disease Patients Undergoing Hemodialysis. **Study design**: A quasi-experimental design was used in the conduction of this study. **Setting:** This study was carried out at hemodialysis unit at Alazhar University Hospital at new Damietta city. **Subjects:** A convenient sample of 35 patients. **Tools of Data Collection:** The following tools were used to collect the necessary data:1) Structured interview sheet, 2) Self-care questionnaire, 3) Dialysis symptom index, and 4) Palliative care plan. **Results**: increased total mean score of patients knowledge and practice t ,with highly statistically significant differences at pre vs post test& pre vs follow up test ($p < 0.01$) for both tests. **Conclusion**: the palliative care plan had positive effect in decreasing and control severity of those symptoms in patients undergoing hemodialysis. **Recommendations** Dialysis units should equipped by palliative care programs. Set up a counseling room in hemodialysis

**Keywords:** End-stage renal disease, Palliative Care, and Hemodialysis

## Introduction

End-stage renal disease (ESRD) is overwhelming. It generates a significant financial, physical, and psychological load on affected patients and their family members (**Grubbs, V. et al., 2017**). The necessity for palliative care to improve wellbeing and quality of life for persons with a life-threatening illness and their families has been emphasized **(WHO, 2019).** It is also predictable that a palliative approach including the adaptation of palliative care capability and knowledge **(Sawatzky R. et al., 2016)** needs to be integrated into different settings in order to reach patients with chronic life-limiting illnesses, e.g. nephrology care **Davison SN. et al., 2015**, **Harris D, et al., 2019)**.

The use of the palliative care approach to manage symptoms and decrease the stress of a serious illness initiated from the search to find balance in care, decrease suffering, and improve the quality of life and care for patients **(Chow, K., & Dahlin, C. 2018).**

**The United States Renal Data System (2019)** stated an estimated 124,673 newly diagnosed cases of

ESRD yearly and that there are over 726,000 people suffering from ESRD on dialysis in the United States. The disease was well-known to have a greater incidence among people between the ages of 45 and 65. It also reported that more than 240 people die on dialysis each day, with peak incidence among people age 65 and older. Overall, an estimated 37 million adults (one in seven) in the United States are suffering from chronic renal disease **(Centers for Disease Control and Prevention. 2019)**.

Around 14% of the U.S. population lives with chronic renal disease. **(United States Renal Data System, 2016)**. This incidence increases to 33% for persons older than 60 years. Those that progress to end-stage renal disease (ESRD) and are started on renal replacement therapy (RRT) often have high mortality, poor quality of life (QOL), physical and emotional indicators, and experience high health care utilization.

Palliative care is particular medical care carried by an interdisciplinary team that emphases on QOL through practiced symptom control, assistance with shared decision making, assistance of advance care planning, and establishment of social and spiritual supports for patients and families living with severe illness. **(Center to Advance Palliative Care, 2017)** Kidney palliative care is particular to those living with serious kidney disease.

Certain of the most commonly recognized symptoms for this patient population include pain, nausea and vomiting, anemia, infection, frequent hospitalizations, psychological and emotional distress, loss of time and wages due to long dialysis hours, dyspnea, malnutrition, and other debilitating symptoms that are likely to affect normal lifestyle functions (Centers for Disease Control and Prevention **(Centers for Disease Control and Prevention. 2019)**.

The CDC (2019) labeled palliative care as an evidence-based medical model and an acknowledged medical field for physicians, nurses, and health care professionals. Palliative care is defined as a treatment assumed to control pain and undesirable symptoms of chronic or serious diseases where there is no reasonable expectancy of a cure for patients.

## Aim of the Study

Was to evaluate the effect of Palliative Care Plan On end-stage renal disease Patients Undergoing Hemodialysis through:

- Assess patients' knowledge related to illness and self-care activities
- Assess the most common health problems for the patient with ESRD.
- Severity of dialysis symptoms
- Based on patient's assessment design and implement Palliative care
- Evaluate the effect of Palliative Care Plan on end-stage renal disease Patients

**Research hypothesis:**

**H1:** Palliative care plan will have a positive effect of patient outcomes (decrease the most common health)

**H2:** Improve patient's physical, psychological, and spiritual will being.

## Subjects and Methods

The methodology followed in carrying out the study was elaborated under the following items:

1. Technical design.
2. Operational design.
3. Administrative design.
4. Statistical design.

**Technical Design:**

Technical design of the study includes research design, setting, subjects, and tools of data collection.

**Research design:**

A quasi-experimental design was used in the conduction of this study.

**Setting:**

This study was carried out at hemodialysis unit at Alazhar University Hospital at new Damietta city.

**Subjects:**

A convenient sample of 35 patients who fulfill the following criteria compromised the sample:

Age more than 18years

Both sexes.

Undergoing hemodialysis

Diagnosed as end stage renal failure.

Free from other psychotic disorders or critically ill (coma).

**Tools of Data Collection:**

The following tools were used to collect the necessary data:

1. Structured interview sheet.
2. Self-care questionnaire.
3. Dialysis symptom index.
4. Palliative care plan.

**Tool-1 Characteristics and medical history of patient undergoing hemodialysis (appendix I):**

A structured interview sheet was developed and constructed by the researcher after reviewing the literature and expertise' opinions. The sheet was designed in Arabic form to avoid misunderstanding. It was includes:

**Part I: patient's characteristics:**

Items related to socio - demographic characteristics of the patient include age, sex, level of educations, marital status. It consists of 4 questions covering the previous items.

**Part II: patient's medical history:**

Items related to medical history of the patient. It consisted of 14 questions covering the following items: duration of illness, causes of renal failure, having other diseases, hospitalization during the past 6 months, family medical history, kidney transplantation history, duration of dialysis, number of hemodialysis session/week, time schedule of session, type of vascular access, its' number, occurrence of complication due to vascular access, urination problems and problems pre, during and after dialysis session.

**Tool II: Self-care questionnaire**: (**Appendix II**):

This tool was used to assess patients' knowledge related to illness and practice self-care activities. It

includes 23 items covering the following: it was contained eleven questions (Q1 to Q11) assess patients knowledge as Kidney functions, renal failure, function of dialysis machine, things to be considered peri dialysis, …..etc. and 12 questions (Q12 to Q23) assess patients practice as; how to maintain healthy nutrition, protection of the body and dealing with some disease complications, exercise and regular maintenance. This tool was used before program implementation, as well as three months after program implementation.

**Scoring system**

For every area of knowledge, the scores of the items was summed- up and the total divided by the number of the items, giving a mean score for the part. These scores were transformed into a percent score, and means and standard deviations were calculated. The knowledge was considered" good" if percentage score was more 60%, "fair" if percentage ranged from more than 40% to 60% and "poor" if 40% or less.

One grade was given when the response was right and zero was given when the response was wrong. For each category of the practice, the scores of the items was summed- up and the total was divided by the number of the items, giving a mean score for the part. These scores were transformed into a percent score, and means and standard deviations were calculated. The practice was considered "good" if percentage score was more than60%, "fair" if percentage ranged from 40% to 60% and "poor" if 40% or less than 30%.

**Tool III: The Dialysis Symptom Index (DSI) (appendix III):**

**Weisbord et al. (2004)** developed a self- reported index that assesses the common and severity of symptoms / problems and their severity in patients undergoing hemodialysis and is widely used in end-stage renal disease patients.

**The Dialysis Symptoms Index (DSI)** contains 30 items, each of which targets a specific physical or emotional symptom. Patients enrolled in the study were asked to describe the presence (yes/ no) of each symptom at any time during the previous 7 days. The severity of each reported symptom was assessed by asking patients to rate the degree to which the symptom was bothersome by using a 5-point Likert scale (1= “not at all bothersome” to 5= “very much bothersome”).For the severity of each discovered symptoms the weight mean was calculated according to table (1) and the attitude of the severity was detected.

**Table (1):** Calculation of weight mean and attitude

| Degree | Attitude Of Severity | Weight Mean Range |
|---|---|---|
| 1 | Not at all | 1-1.79 |
| 2 | A little bit | 1.80-2.59 |
| 3 | Somewhat abit | 2.60-3.39 |
| 4 | Quite abite | 3.40-4.19 |
| 5 | Very much | 4.20-5 |

**1. Scoring System**

Two scores were generated from the DSI. First, an overall symptom burden score was formulated by totaling the number of symptoms reported as present. Second, a total symptom severity score was generated by summing the severity scores for each reported symptom, with a score of 0 for symptoms that were not reported as present. Using this scoring system, the minimum possible total severity score was 0 if none of the 30 symptoms was present and the maximum potential score was 150 if all of the 30 symptoms were reported and rated as "very much bothersome" (severity score of 5).

By the same way the weight mean and the attitude of total severity was detected after that, the palliative care program was implemented on the most common dialysis symptoms.

**Tool IV. Palliative care planning (appendix IV):**

This tool was developed by the researcher for the purpose of treating the common symptoms or decrease severity of those symptoms.

Before the palliative care implementation to have a base line assessment about the most common dialysis symptoms (that Loss of appetite, fatigue, Sleep problems, Nausea, vomiting, Head ache, dizziness and psychological problems, and symptoms severity)to conducted the intervention and the sheets was answered within 45 minutes then collected through two months(pre intervention).

According to the most common symptoms the researcher has designed a palliative care plan to treat those symptoms or decrease their severity.

Implementation of palliative care plan was carried out by researcher through individual session, the total of sessions was twelve sessions; four session covered theoretical part and eight session covered practical part. Every session was taken 30 minute and the implementation was performed through three months.

After the palliative care implementation (to assess the dialysis symptoms and their severity through) the results between pre and post planning intervention were compared to assess the effect of palliative care plan and the sheets were answered within 30 minutes (post intervention).

Evaluation was done post plan implementation and after three months as follow up phase .follow up was done to assess the dialysis symptoms and their severity through comparing the results among pre, post and follow up phases to assess the continence effect of palliative care plan and the sheets were answered within 30 minutes then collected.

**Operational Design**

The operational design was include preparatory phase, content validity, reliability, pilot study, field work and limitation of the study.

**A-Preparatory phase**

It includes reviewing of literature, different studies and theoretical knowledge of various aspects of the problems using books, articles, internet, periodicals and magazines.

**B-Content validity**

It was ascertained by a jury consisted of five experts in the field of Medical Surgical nursing to make sure that the study tools looks though it measured what supposed to measure.

**C-Reliability**

Cronbach alpha coefficient was calculated to assess the reliability of the developed tool through their internal consistency.

**Pilot Study**

A pilot study was carried out after the development of the study and before embarking on the actual study (data collection). It was conducted during august 2019 in order to test applicability & feasibility of the tools, and to estimate the time required for filling the required forms. It was carried out on 10% of the study subjects, from to evaluate the content of tools to determine whether or not the items were understood by the patients undergoing hemodialysis and they was excluded from the entire sample of research work. The results of pilot were as follows:

They indicated to some items needed to be modified; rephrasing, omission, can be measured through others: whether these items stay as they were or by adding some words or elements.

Needed modification were done based on pilot results and further researcher refining of each tool, each items in the same part, parts to each other and tools to each other were done Finally, making assurance that each tool as a whole achieved the aim of the study.

**Field Work:**

The data collection started from September 2019 and extended to August 2020. This period consumed for data collection was governed by the available time for both the researcher and the study respondents. Before conducting the study, patients under study were assured that the data collected for the questionnaire remained confidential and that no personal identification was needed by any means. They also were informed that they could refuse to participate in the study, to withdraw from it at any time.

**Palliative care planning implementation** was developed as the follows:

**2. Statement of the objectives**

The aim of the study was to determine the effect of palliative care plan on the common problems for patients undergoing hemodialysis.

**3. Content**

Assessment and data collection phase was aimed to identify patient's problems and to have a base line assessment for

patient's condition. The available previous and current literature, theoretical knowledge covering all aspects related the problem was done by the researcher.

Palliative care plan was designed by the researcher based actual assessment of patients under hemodialysis common problems for the purpose of manage the common symptoms and decrease its severity of those symptoms. The intervention was developed in a simple Arabic language to cover the relevant theoretical and practical aspects.

**4. Teaching methods and aids**

Different teaching methodology as short lecture, group discussion, role playing, demonstration, and re-demonstration, was used. Also different audio visual materials were used as pamphlets, small books, diagrams picture, posters, real equipments and life situations. These were used to facilitate teaching of each topic.

**5. Implementation of the planning**

The plan implementation conducted by the researcher in 3 months .The researcher was meeting each patient individually the total number of session was (12) for each patient individually according to patients symptoms ,divided as follow: (4) sessions theoretical part (renal failure and nutrition sessions, Loss of appetite, fatigue, Sleep problems, Nausea, vomiting, Head ache, dizziness and psychological problems, psychosocial and spiritual support for patients and (8) sessions practical part and exercise session) the researcher had demonstrated the care of dyspnea, skin care for pruritus, care of fatigue, care of gastrointestinal symptoms, relaxation technique and care of fistula using real materials within 30-45 minute.

The sessions began with one session for a formative assessment to show the patient's condition (interviewing the patient regarding personal data and identification), and one session for demonstrating the importance of the palliative care plan and for assessing the patients knowledge and practice

The content was repeated for each patient by the researcher. The teaching hours were 3hours/day for 3 days/week for session's theoretical and practical parts. The booklet &handouts included in the intervention were distributed to all patients during planning implementation.

**6. Evaluation of the patients undergoing hemodialysis**

After program implementation, two tests were done to evaluate the effect of the program; the first post test was done immediately by the end of the program, the second was done three months after program implementation. The impact of the program was based on the improvement of common problems for patients under going hemodialysis; comparing changes in their symptoms pre, post and follow up.

**Administrative Design**

For conduction of the study, a written permission was taken from the dean of the Faculty of Nursing, Damietta University and an official letter was sent to the selected area of the study. The director of hospital was contacted and informed in order to obtain permission to include patients on the present research.

**Ethical consideration**

1-Explain the aim of the study to the director of the hospital to take his permission to do this study.

2-Explain the aim of the study to each participant to ensure their consent to be involved in the study.

3-A brief explanation of the study was given to assure the patients that the information obtained was confidential and used only the purpose of the study and will maintain their privacy.

**Statistical Design**

**Statistical analysis:**

Data were coded and transferred into specially designed formats for data entry then data were analyzed and computed. The collected data in pretest and post test were organized, categorized, and tabulated in tables using numbers and percentage, mean percentage and standard deviation. Chi-square ($x^2$) test was used to test the associations among the under studied qualitative variables, the statistical package for social sciences (SPSS version 16.0) was used for statistical analysis. Statistical significance was considered at p-value < 0.05

## Results

**Table (1):** shows distribution of the studied patients according to their characteristics. This table illustrates that more than two third of the studied patients (71.4%) aged more than 40 years with mean age of 49.29 ± 16.25, near to two third of the studied patients (60%) were male.

In relation to educational level, nearly one third of the studied patients (31.4%) were University education. Regarding **Marital status** of the studied patients, more than one third of the studied patients (37.1%) were married

**Table (2):** shows percentage distribution of the studied patients as regards chronic renal failure history &hemodialysis characteristics. The table illustrates that, more than two fifths (45.7%) of the studied patients were hospitalized during last 6 months. Eleven point four percent of studied patients had family history of renal failure and 2.9% of them had history of transplantation.

Regarding number hemodialysis session per week, all of the studied patients (100%) dialyzed 3 times per week. And majority of them (80%) had 3-3.5 hours as duration of hemodialysis session. In relation to type of vascular access 77.1% of the studied patients had fistula.

**Table(3):** Concerning total knowledge and practice mean score related to chronic renal failure& its management ,this table shows increased total mean score of patients knowledge at post test more than pre test and slightly decreased in follow up test ,with highly statistically significant differences at pre vs post test& pre vs follow up test ($p < 0.01$) for both tests.

**Table (4):** shows total mean score and attitude of severity of most common dialysis symptoms according to studied patients (pre-post-follow up intervention) no= 35. This table shows decreased of total mean score and attitude of severity of most common dialysis symptoms at post and follow up intervention. Few common dialysis symptoms slightly increased to be a little bit in their attitude of severity in

follow up intervention as dizziness, sad and difficult funny arousal.

**Table (5):** Shows mean score of severity of most common symptoms, total most common symptoms and total dialysis symptoms throughout the study phases (pre-post-follow up intervention). This table demonstrates decreasing trends in the most common symptoms from the pre intervention to follow up phase of the study .These trends were statistically significant.

Also the mean scores of severity of total dialysis symptoms decreased from 83.31 per intervention to 36.74 post intervention, and 35.05 at follow up intervention with highly statistically significant difference (p>0.01).

**Table (1):** Distribution of the studied patients as regards their characteristics.

| Characteristics | | No=35 | % |
|---|---|---|---|
| **Age/years** | | | |
| ≤ 40 | | 10 | 28.6 |
| > 40 | | 25 | 71.4 |
| **Mean ± SD** | 49.29 ± 16.25 | | |
| **Gender :** | | 21 | 60 |
| Male | | | |
| Female | | 14 | 40 |
| **Educational level:** | | 10 | 28.6 |
| Basic | | | |
| Secondary | | 8 | 22.9 |
| University | | 11 | 31.4 |
| Not reading & written | | 6 | 17.1 |
| **Marital status :** | | 11 | 31.4 |
| • Single | | | |
| • Married | | 13 | 37.1 |
| • Widow | | 6 | 17.1 |
| • Divorced | | 5 | 14.4 |

**Table (2):** Percentage distribution of the studied patients as regards chronic renal failure history &hemodialysis characteristics.

| Characteristics | No=35 | % |
|---|---|---|
| **Hospitalization during last 6 month of dialysis** | 16 | 45.7 |
| **Family history of renal failure** | 4 | 11.4 |
| **History of transplantation** | 1 | 2.9 |
| **Number of weekly HD session** | | |
| Three times | 35 | 100 |
| **Duration of HD session** | | |
| 2 hours | 3 | 8.6 |
| 3 - 3.5 hours | 28 | 80 |
| 4 hours | 4 | 11.4 |
| **Types of vascular access** | | |
| Fistula | 27 | 77.1 |
| Fistula &venous catheter | 8 | 22.9 |

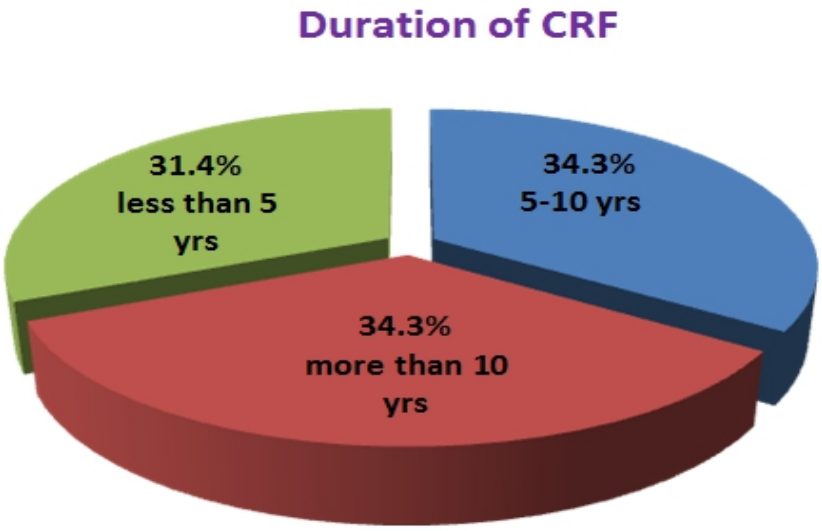


**Figure (1):** Distribution of studied patients undergoing hemodialysis

According to duration of chronic renal failure. Approximately one third of studied patients (34.3%) had more than 10 years suffering from chronic renal failure disease.

**Table (3):** Total mean score of patients reported knowledge and practice of self-care activities at pre, post and follow up implementation.

| Variables | Pre test X SD | Post test X SD | FU test X SD | P-value pre vs post | P-value pre vs FU |
|---|---|---|---|---|---|
| **Total knowledge score** | 2.60±3.28 | 21.66±2.86 | 20.37±3.30 | 0.001** | 0.001** |
| **Total practice score** | 5.77±5.75 | 41.97±5.34 | 39.83±6.06 | .000 ** | .000 ** |

#**= highly statistically significant
#FU test= follow up test

**Table (4):** Total means score and attitude of severity of most common dialysis symptoms according to study patients (pre-post-follow up intervention)

| Dialysis symptoms | Study phases | | | | | |
|---|---|---|---|---|---|---|
| | Pre | | Post | | Follow up | |
| | Mean SD | Attitude % | Mean SD | Attitude % | Mean SD | Attitude % |
| **1. Nausea** | 3.25± 1.72 | **Some what** | 1.05± 1.16 | **Not at all** | 1.22± 1.26 | **Not at all** |
| **2. Vomiting** | 3.25± 1.59 | **Some what** | 1.90± 1.12 | **A little bit** | 1± 1.08 | **Not at all** |
| **3. Decrease appetite** | 3.80± 1.25 | **Very much** | 1.91± 1.56 | **A little bit** | 1.80± 1.43 | **A little bit** |
| **4. Muscle cramps** | 3.74± 1.83 | **Very much** | 1.37± 1.35 | **Not at all** | 1.42± 1.31 | **Not at all** |
| **5. Dizziness** | 3.22± 1.88 | **Some what** | 1.77± 1.45 | **Not at all** | 1.80± 1.51 | **A little bit** |
| **6. Fatigue** | 3.85± 1.47 | **Very much** | 1.88± 1.25 | **A little bit** | 2± 1.21 | **Not at all** |
| **7. Headache** | 3.51± 1.68 | **Very much** | 1.28± 1.31 | **Not at all** | 1.34± 1.45 | **Not at all** |
| **8. Nervous** | 3.54± 1.59 | **Very much** | 1.34± 1.25 | **Not at all** | 1.14± .94 | **Not at all** |
| **9. Trouble falling asleep** | 3.40± 1.78 | **Very much** | 1.57± 1.24 | **Not at all** | 1.37± 1.30 | **Not at all** |
| **10. Sad** | 3.57± 1.57 | **Very much** | 1.68± 1.34 | **Not at all** | 1.94± 1.39 | **A little bit** |
| **11. Anxious** | 2.45± 1.48 | **A little bit** | 1± .91 | **Not at all** | 1.70± 1.01 | **Not at all** |
| **12. Decreased interest in play** | 3.57± 1.57 | **Very much** | 1.25± 1.22 | **Not at all** | 1.17± 1.27 | **Not at all** |
| **13. Funny aroused** | 2.45± 1.48 | **A little bit** | 1± 1.19 | **Not at all** | 1.90± 1.17 | **A little bit** |
| **Total dialysis symptoms** | 2.78± .69 | **Some what** | 1.22± .57 | Not at all | 1.16± .54 | **Not at all** |

**Table (5):** Mean score of severity of most common symptoms, total most common symptoms and total dialysis symptoms throughout the study phases (pre-post-follow up intervention).

| Items | Study phases | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Pre N0=35 | | Post N0=35 | | Followup N0=35 | | * GLM | |
| | X | SD | X | SD | X | SD | F | P-value |
| Nausea | 3.25 | 1.72 | 1.05 | 1.16 | 1.22 | 1.26 | 22.19 | .000** |
| Vomiting | 3.25 | 1.59 | 1.90 | `1.12 | .77 | 1.08 | 38.62 | .000** |
| Decrease appetite | 3.80 | 1.25 | 1.91 | 1.56 | 1.80 | 1.43 | 17.39 | .000** |
| Muscle cramps | 3.74 | 1.83 | 1.37 | 1.35 | 1.42 | 1.31 | 16.60 | .000** |
| Dizziness | 3.22 | 1.88 | 1.77 | 1.45 | 1.80 | 1.51 | 9.70 | .000** |
| Fatigue | 3.85 | 1.47 | 1.88 | 1.25 | 2 | 1.21 | 26.70 | .000** |
| Headache | 3.51 | 1.68 | 1.28 | 1.31 | 1.34 | 1.45 | 16.48 | .000** |
| Nervous | 3.54 | 1.59 | 1.34 | 1.25 | 1.14 | .94 | 38.83 | .000** |
| Trouble falling asleep | 3.40 | 1.78 | 1.57 | 1.24 | 1.37 | 1.30 | 16.98 | .000** |
| Sad | 3.57 | 1.57 | 1.68 | 1.34 | 1.94 | 1.39 | 13.76 | .000** |
| Anxious | 2.45 | 1.48 | 2.80 | 1.09 | 1.70 | 1.01 | 16.17 | .000** |
| Decreased interest in Play | 3.57 | 1.57 | 1.25 | 1.22 | 1.17 | 1.27 | 49.42 | .000** |
| Funny aroused | 2.45 | 1.48 | .77 | 1.19 | 1.90 | 1.17 | 51.44 | .000** |
| # Sotmcs | 45.31 | 10.59 | 17.65 | 7.94 | 17.62 | 8.74 | 79.90 | .000** |
| #Sotds | 83.31 | 20.80 | 36.74 | 16.09 | 35.05 | 16.91 | 64.37 | .000** |

* GLM= repeated ANOVA #Sotmcs=severity of total most common symptoms #Sotds= severity of total dialysis symptoms
#**= highly statistically significant

## Discussion

The current study shows that distribution of the studied patients according to their characteristics illustrates that more than two third of the studied patients aged more than 40 years with mean age of 49.29 ± 16.25. That agree with **Pommer et al. (2019)** their study revealed that 63% of the respondents were male, 32% female. Age group of the respondents was: < 44 years 12%, 45–64 years 85%, > 65 years

Also this finding was agreed with **Youssif G. S. (2009)** in Ain Shams University and **Mohammed A.A (2011)** in Zagazig University who reported that, approximately two fifths of patients undergoing hemodialysis were in age group ≥ 50 years old years. And this finding was similarly with. **Figueiredo et al (2012)** who reported that, mean age was 51±13 years. This finding may indicate that ESRD is more common among the middle adulthood persons.

As regard to gender near to two third of the studied patients were male. In same line with **Mohamed A. et al (2017)** revealed that more than half of patients were males. This finding is agreed with. **Sabry (2013)** who reported that, males patients' ratio is higher than the female one. In the same contexts**, Tabloski (2014)** also reported that gender differences had widened since 1990, with greater increases in men than women.

Concerning total knowledge the ultimate goal of the present study was to improve the dialysis symptoms through improving their knowledge and practice. As the results of the current study showed significant increased patients total knowledge and practice score

related to chronic renal failure, its management at post test and follow up period. **Elsayed et al., 2012** supported these finding, who found that there was a significant improvement immediately and three months post intervention.

**As regard to** total mean score and attitude of severity of most common dialysis symptoms the current study shows decreased of total mean score and attitude of severity of most common dialysis symptoms at post and follow up intervention. Few common dialysis symptoms slightly increased to be a little bit in their attitude of severity in follow up intervention as dizziness, sad and difficult funny arousal. Also Shows mean score of severity of most common symptoms, total most common symptoms and total dialysis symptoms throughout the study phases (pre-post-follow up intervention). Our study demonstrates decreasing trends in the most common symptoms from the pre intervention to follow up phase of the study .These trends were statistically significant.

This supported by **Mohamed A. et al. (2017)** who report that According to dialysis symptoms index**,** the current study revealed that highly statistically significant differences among the study patients regard to most common health problems and total dialysis symptoms(patient outcome) for patient with ESRD throughout study phases this finding demonstrates that, the dialysis symptoms can be controlled and it`s severity can be decrease to minimal level, and this proved that palliative care program had benefit effects in caring ESRD symptoms and improved patient outcome throughout study phases This finding was in agreement with **Mohammed A. (2013)** who reported that, there were highly statistically significant relations were found in severity of cramps, fatigue, itching, total most common symptoms and total dialysis symptoms throughout the study phases.

Finally palliative care play very important role in improve the patients' health outcome, decrease and control pain, improve physical and psychological state for patients with ESRD.

## Conclusion

Based on the findings of the current study, it concluded that, the majority of patients undergoing hemodialysis had the most common symptoms were decreased after the implementation of palliative care plan such as appetite fatigue, sad, ….etc. Highly statistically significant difference were found in severity of those common dialysis symptoms severity of total most common symptoms and severity of total dialysis symptoms throughout the study phases. Furthermore, the palliative care plan had positive effect in decreasing and control severity of those symptoms in patients undergoing hemodialysis.

## Recommendations

- Dialysis units should equipped by palliative care programs that include symptom management for patients and their families. Supply it with psychotherapists, social workers, and dietitians to assess patient's needs and

intervene with them. Set up a counseling room in hemodialysis units provided with needed resources to enhance health status for hemodialysis patients with appropriate referral system.

## References

**Center to Advance Palliative Care. (2017):** Palliative care definitions and delivery models. Available from https://www.capc.org/payers/palliative-care-definitions/. Accessed May 22, 2017.

**Center to Advance Palliative Care.(2017):** What is palliative care? Available from https://www. getpalliativecare.org/ whatis. Accessed May 22, 2017.

**Centers for Disease Control and Prevention. (2019):** Chronic kidney disease basics: Symptoms. Chronic Kidney Disease Initiative. Retrieved from https:// www. cdc. gov/ kidneydisease/ basics. html# symptoms

**Chow, K., & Dahlin, C. (2018):** Integration of palliative care and oncology nursing. Seminars in Oncology Nursing, 34(3), 192–201. doi:10.1016/j.soncn.2018.06.001

**Davison SN, Levin A, Moss AH, Jha V, Brown EA, Brennan F, Murtagh FEM, Naicker S, Germain MJ, O'Donoghue DJ, et al. (2015):** Executive summary of the KDIGO controversies conference on supportive Care in Chronic Kidney Disease: developing a roadmap to improving quality care. Kidney Int.; 88(3):447–59.

**Elsayed, E., El-Soreety, W., Elawany, T., and Nasar, F. (2012)**: Effect of nursing intervention on the Quality of life of children undergoing hemodialysis. Life Science Journal, 9 (1).

**Figueiredo, A. E; Goodlad, C; Clemenger, M; Haddoub, S; McGrory, J; Pryde, K; Tonkins, E; Hisole, N & Brown, E. A (2012):** Evaluation of Physical Symptoms in Patients on Peritoneal Dialysis. International Journal of Nephrology. Vol., Article ID 305424, P. 4 doi: 10. 1155/ 2012/ 305424.

**Grubbs, V., O'Riordan, D. O., & Pantilat, S. (2017):** Characteristics and outcomes of in-hospital palliative care consultation among patients with renal disease versus other serious illnesses. Clinical Journal of American Society of Nephrology, 12(7), 1085–1089. doi:10. 2215/CJN.12231116

**Harris D, Davies S, Finkelstein F, Jha V, Donner J-A, Abraham G, et al. (2019)**: Increasing access to integrated ESKD care as part of universal health coverage. Kidney Int.;95:1–33.

**Mohamed A.A, Taha NM, Abd-Elaziz M, and Abd- Elaziz EM (2017):** Impact of Palliative Care Program on Nurse's Knowledge and practice Regarding care of Patients with End-Stage Renal Disease Zagazig Nursing Journal Vol.13, No.1pp 275: 289

**Mohammed, A. (2013):** Palliative care planning for the most common problems for patients undergoing hemodialysis at Hodiedah dialysis center. Unpublished Doctorate thesis,

Faculty of nursing, Zagazig University. pp.138-145.

**Mohammed, A.A. (2011):** assess nurses' practice and adverse health effects on nurses dealing with chemotherapy agents at Zagazig University. Unpublished Master Thesis. Faculty of Nursing. Zagazig University.pp: 175-177

**Morton RL, Kurella Tamura M, Coast J, Davison SN. (2016):** Supportive care: economic considerations in advanced kidney disease. Clin J Am Soc Nephrol; 11: 1915e1920.

**Sabry, D. (2013):** Factors affecting compliance for hemodialysis patients toward therapeutic regimen. Unpublished Master Thesis, Faculty of Nursing, Zagazig University.. pp. 103–112

**Sawatzky R, Porterfield P, Lee J, Dixon D, Lounsbury K, Pesut B, et al. (2016):** Conceptual foundations of a palliative approach. A knowledge synthesis. BMC Palliative Care.; 15:1-14.

**Tabloski, P (2014):** Gerontological nursing (3rd ed) upper saddle river. NJ. Pearson education. pp.324-329.

**United States Renal Data System. (2016):** USRDS annual data report: Epidemiology of kidney disease in the United States. Bethesda, MD: National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases, 2016.

**Weisbord, S.D., Fried, L.F., Arnold, R.M., Rotondi, A.J, Fine, M.J., Levenson, D.J., Switzer, G.E. (2004):** Development of a symptom assessment instrument for chronic hemodialysis patients: The Dialysis Symptom Index. Journal of Pain Symptom Manage; 27(3): 226-4

**WHO (2019):** Definition of Palliative Care https:// www. who. int/ cancer/ palliative/ definition/en/ Accessed 15 Jan 2019.

**Wolfgang Pommer a Sarah Wagner b Julia Thumfart c (2019):** Conservative Care, Dialysis Withdrawal, and Palliative Care: Results from a Survey of a Non-Profit Dialysis Provider in Germany Kidney Blood Press Res; 44:158–169

**Youssif, G.S (2009):** Develop Guide Line For patients Undergoing Hemodialysis, Unpublished Master Thesis, Faculty of Nursing, Ain Shams University. pp.107-114