

# Impact of Maintenance Hemodialysis on Patients' Lifestyle and Well-Being

Engy E. Eldoushy<sup>1,\*</sup>, Hanady Shehata<sup>2</sup>

<sup>1</sup>Lecturer of Medical Surgical Nursing, Faculty of Nursing, Menoufia University, Egypt

<sup>2</sup>Lecturer of Community Health Nursing, Faculty of Nursing, Menoufia University, Egypt

\*Corresponding author: [engyeldoushy2016@gmail.com](mailto:engyeldoushy2016@gmail.com)

---

**Abstract:** End-stage renal disease is one of the devastating health problems in Egypt and hemodialysis represents the main mode for treatment. Hemodialysis alters patients' lifestyle and consequently their wellbeing. The aim of this study was to assess lifestyle and well-being of maintenance hemodialysis patients. **Design:** A descriptive research design was used. **Setting:** this study was conducted in the hemodialysis units of Menoufia University Hospital and Shebien El Kom Teaching Hospital-Menoufia Governorate- Egypt. **Sample:** A simple random sample of 115-maintenance hemodialysis patients was selected. **Tools:** I. A structured survey questionnaire: It was designed by the researchers after a thorough literature review and based on relevant studies to include: A). Subjects' socio-demographic data: Study subjects' age, sex...etc B). Medical history: It included number of dialysis years, accompanied diseases and drugs taken for those diseases. II. Lifestyle questionnaire: It was adapted to assess patents' lifestyle habits and comprised of 28 questions of main seven themes: physical activity, diet, occupation, stress, weight, fitness and future goals. III. Spiritual Well-Being Index: It was adopted to assess patients' perception about their spiritual well-being, which consisted of 12-item and divided into two subscales: (1) self-efficacy subscale and (2) life-scheme subscale; (6 items for each). **The main results:** less than half of maintenance hemodialysis patients were within the age group of (20-40) and started hemodialysis since six to ten years. Moreover, regarding patients' lifestyle approximately half of them; hadn't participated in any kind of physical activity during the last year, left their occupation because of dialysis, had not any hobbies, had moderate stress tolerance, considered themselves overweight and have good fitness while, three quarters of the studied patients drink the ideal/prescribed daily amount of water. Furthermore, less than half of the studied sample considered goals about exercises is quiet important and approximately three quarters of them recognized that practicing daily exercises is important for improving the overall health and more than one quarter considered it is important for improving mood and stress levels. In addition, regarding spirituality index of well-being total scores, more than one third compared to more than half of the studied patients respectively had Poor and good well-being. **Conclusion:** Overall, the current study concluded that maintenance hemodialysis affects negatively in patient's lifestyle and well-being. **Recommendations:** it is highly recommended to allow maintenance hemodialysis Patient's education about appropriate lifestyle strategies to help in promoting patient's comfort and enhancing their well-being and health care personnel have to pay much more attention for all aspects of those patients' life with including the holistic approach in care.

**Keywords:** Maintenance hemodialysis - Lifestyle - Well-being.

---

## 1. INTRODUCTION

End stage renal disease (ESRD) is a devastating problem both at the personal and national level and has become a worldwide public health problem<sup>(1)</sup>.

The prevalence of CKD is estimated to be 8–16% worldwide, with diabetes mellitus (DM) being the most common cause<sup>(2)</sup>. The number of patients being treated for end stage renal disease (ESRD) globally was estimated to be 2,786,000 at the end of 2011 and continues to increase at a significantly high rate. According to US Renal Data System, approximately 2,618,000 were on maintenance dialysis treatment [hemodialysis or peritoneal dialysis] and around 622,000 people had kidney transplants. At the end of the year 2011, hemodialysis remained the most common treatment modality, with approximately 1,929,000 patients undergoing hemodialysis (89% of all dialysis patients) and around 235,000 patients undergoing peritoneal dialysis (11% of all dialysis patients). By 2030, this figure will be more than double to 5439 million (95% confidence interval: 3.899–7.640), with the greatest growth in Asia and Africa<sup>(3)</sup>.

According to the last Egyptian renal registry, the Prevalence of end-stage renal disease (ESRD) in Egypt has increased from 225 PMP (per million populations) at year 2003 to 414 PMP at year 2008<sup>(4)</sup> then increased again at the end of year 2011 to 484 PMP (0.0483%)<sup>(5)</sup>. The main causes of end-stage kidney disease (ESKD) in Egypt, other than diabetic nephropathy, included hypertensive kidney disease, chronic glomerulonephritis, unknown etiology, chronic pyelonephritis, schistosomal obstructive uropathy, and schistosomal nephropathy<sup>(5)</sup>.

The 2010 Global Burden of Disease Study included chronic kidney disease (CKD) among the chronic diseases assessed and ranks it as the 18th most common cause of death (annual death rate 16.3/100 000), a substantial increase from its 27th ranking in 1990 (age-standardized annual death rate of 15.7/100 000). It shows a major impact on general health<sup>(1)</sup>.

Worldwide, the prevalence differs greatly. According to the United States Renal Data System (USRDS), the highest prevalence of treated ESKD in 2013 was reported for Taiwan, Japan, and the USA (3138, 2411, and 2043 pmp, respectively), whereas the lowest prevalence was reported in Indonesia, Bangladesh, South Africa, the Philippines, Russia, and Saudi Arabia, where ESKD prevalence ranged from 66 to 486 pmp<sup>(6)</sup>. In Europe, the overall prevalence on 31 December 2012 was 716.7 pmp (n=451 270), with the highest in Portugal (1670.2 pmp) and lowest in Ukraine (146.7 pmp)<sup>(7)</sup>.

The low prevalence in Egypt than in developed countries may be due to lack of registration or documentation programs for end-stage renal disease patients, higher mortality in patients with kidney diseases before they reached end-stage requiring dialysis and due to short life expectancy for these patients in Egypt. The incidence of end-stage renal disease requiring dialysis is expected to steadily grow at the fastest rate and has a major burden on healthcare cost even in developed countries<sup>(5)</sup>.

The total population of Menoufia governorate is about 4, 128, 458 of them, 1995 patients had end-stage renal disease on maintenance hemodialysis (according to the records of Menoufia directorate of health and population<sup>(8)</sup>). The prevalence of ESKD patients on regular hemodialysis (HD) in Menoufia governorate was 483 per million populations (0.0483%). Unfortunately, there were no annual data for new cases, that is why we could not calculate the incidence rate, whereas comparing the prevalence of hemodialysis to hepatitis C and B was found to be 42 to 2%, respectively<sup>(9)</sup>.

Dialysis is the process used to remove fluid and waste products from the body when the kidneys are unable to do so. The purpose is to maintain the life and well being of the patient until kidney function is restored. Dialysis works on the principles of the diffusion of solutes and ultrafiltration of fluid across a semi-permeable membrane. There are three primary types of dialysis i.e. hemodialysis (primary), peritoneal dialysis, hemofiltration, as well as there are two secondary types of dialysis which are hemodiafiltration, and the intestinal dialysis<sup>(10)</sup>.

End-stage renal disease (ESRD) is one of the main health problems in Egypt. Currently, hemodialysis represents the main mode for treatment<sup>(9)</sup>. The main hemodialysis regimen adopted in Egypt is three sessions per week. Hemodialysis centers in Egypt exist in governmental, military, and university hospitals as well in the private sector. Most Egyptian centers are

equipped with machines with controlled ultrafiltration and synthetic membranes. Many centers use bicarbonate buffer and high flux dialyzers although they are not universally applied<sup>(11)</sup>. The hemodialysis centers, whether private or governmental, are under supervision by the Egyptian Ministry of Health (MOH)<sup>(5, 11)</sup>. According to Menoufia governorate health affairs' data, there are 17 governmental versus 10 private hemodialysis centers, which are distributed mainly in cities of Menoufia governorate, and there are 1995 patients on maintenance hemodialysis<sup>(8&9)</sup>.

Hemodialysis (HD) patients are asked to adhere to a very difficult treatment regimen consisting of fluid and diet restrictions, medications, and, usually, 3 to 4 hours hemodialysis (HD) sessions three times a week. Thus, patients should follow and adhere to the prescribed regimen for maintaining an optimal health and wellbeing. Hemodialysis nurse has an important role in understanding the emotional and psychosocial needs of patients as these are an integral part of patients' rehabilitation and it have a direct effect on their lifestyle adjustments due to dialysis<sup>(12)</sup>.

Lifestyle has been a key factor influencing people's health, the longevity and general good health. The bad lifestyle changes have contributed to a rising prevalence of end stage renal diseases, diabetes and cardiovascular diseases globally which give panic alarm for concern<sup>(13)</sup>. In medical research, lifestyle is used to identify individual characteristics, habits and attitudes that increase the individual's risk to diseases, while in health promotion research and literature, lifestyle concept is linked with individual's health promotion and wellbeing<sup>(14)</sup>.

Nowadays, all health experts and professionals considered lifestyle as one of the major factors affecting health and it estimated that 7 out of 10 deaths could be prevented through lifestyle changes<sup>(15)</sup>. Lifestyle is a part of life that most people have a control over it and such behaviors often are changeable. In fact, healthy lifestyle would help in health promotion and bad lifestyle has negative effects on health<sup>(16)</sup>. In other words, a healthy lifestyle is a multi-dimensional pattern of voluntary behaviors needed for promoting one's health conditions, self-growth, and perfection, including physical activity, dieting, spiritual wellbeing, interpersonal relationships, health responsibility, and stress management<sup>(17)</sup>.

Today, almost all chronic life-threatening and disabling conditions results in significant psychosocial stressors and adaptive demands and usually associated with lifestyle risk factors. End stage renal disease (ESRD) is one of such chronic diseases causing a high level of disability in different domains of the patients' lives, leading to impaired quality of life<sup>(13)</sup>. Additionally, Hemodialysis has a considerable impact on health related quality of life. It alters the patients' lifestyle and their families and interferes with their lives. Hemodialysis patients encounter considerable amount of physical, mental and social pressure.

Lifestyle is important because it affects quality of life and has an important role in prevention and promotion while, healthy lifestyle is completely connected with the patients promotion and life expectancy<sup>(18)</sup>. Survival of ESRD patients has been largely improved nowadays because of medical progress, advanced technology and better patient care. The availability of various renal replacement therapies (RRT) has reduced the severity of symptoms and resulted in longer survival of ESRD patients<sup>(19)</sup>.

Hemodialysis therapy is time intensive, expensive and requires fluid and dietary restrictions. Long-term dialysis therapy itself often results in a loss of freedom, dependence on caregivers, disruption of marital, family, and social life, and reduced or loss of financial income<sup>(13,18)</sup>.

## 2. AIM OF THE STUDY

End-stage renal disease (ESRD) is one of the main health problems in Egypt<sup>(6)</sup>. The aim of this study was to assess lifestyle and well-being of maintenance hemodialysis patients.

## 3. RESEARCH QUESTIONS

1. What is the effect of maintenance hemodialysis on patients' lifestyle?
2. What is the effect of maintenance hemodialysis on patients' wellbeing?

## International Journal of Novel Research in Healthcare and Nursing

Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

3. Is there any significant relationship between patients' Sociodemographic characteristics and their wellbeing?

### Operational definition:

**Maintenance hemodialysis:** is operationally defined as 3 to 4 hours hemodialysis (HD) session three times per week <sup>(12)</sup>.

## 4. SUBJECTS AND METHOD

**Research Design:** A descriptive research design was used in this study.

**Setting:** The study was carried out in the hemodialysis units of Menoufia University Hospital and Shebien El- Kom Teaching Hospital-Menoufia Governorate- Egypt.

**Subjects:** A simple random sample of 115- maintenance hemodialysis patients who are registered in the hemodialysis units of Menoufia University Hospital and Shebien El Kom Teaching Hospital was selected.

**Sampling Criteria:** The selected participants in this study were chosen according to the following criteria:-

### Inclusion criteria:

- Adult
- Male or female
- Registered in hemodialysis units of Menoufia University Hospital or Shebien El Kom Teaching Hospital
- On maintenance hemodialysis

### Exclusion criteria:

- Emergency hemodialysis patients
- Not registered in hemodialysis units of Menoufia University Hospital or Shebien El Kom Teaching Hospital
- Severe ill or complicated patients
- Psychologically disturbed patients

### Sample size:

The investigators chose the size of the sample to be the whole numbers of patients registered in hemodialysis units of Menoufia University Hospital and Shebien El Kom Teaching Hospital in the three daytime shifts two in the morning and one afternoon shifts. There is no specific number for sample size "saturation", however, when the investigator finds no new themes emerging from collected data, or it is repeated or confirmed, data saturation is achieved and subject number is considered sufficient <sup>(20)</sup>.

### Tools of the study:

Three tools were used in this study:

**Tool I: A structured survey questionnaire.** It was designed by the researchers after a thorough literature review and based on relevant studies to include, **A). Subjects' socio-demographic data:** It included study subjects' age, sex, marital status, occupation, residence, educational level and monthly income. **B). Medical history:** It included the number of dialysis years, accompanied diseases and drugs taken for those diseases.

**Tool II. Lifestyle questionnaire:** It was a descriptive English instrument adopted from **Fong Leung & David (2012)** <sup>(21)</sup> and has been translated into Arabic by the investigators for assessing patients' lifestyle habits. **Description of the instrument,** The whole instrument comprised of 28 questions of main seven themes: physical activity, diet, occupation and leisure time, stress, weight, fitness and future goals. Questions were divided as follows, 6 questions asking about dietary habits, 4 questions

## International Journal of Novel Research in Healthcare and Nursing

Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

concerning physical activity, 3 questions relating to stress management, 3 questions asking about current occupation and leisure time, 3 questions asking about weight, 6 questions relating to fitness, and 3 general questions mainly concerned about patient's ability for planning and setting future goals. The whole instrument was descriptive except the first question of stress subscale and first five questions of fitness subscale were rating scales from zero to ten.

**III. Spirituality Index of Well-Being:** It was a five points Likert scale adopted from Timothy and Daaleman (2002)<sup>(22)</sup> to assess patients' perception about their spiritual well-being and consisted of 12 items were divided into two subscales: (1) self-efficacy subscale and (2) life-scheme subscale; (6 items for each). Each item was answered on a 5-point scale ranging from 1 (Strongly Agree) to 5 (Strongly Disagree) or strongly agree = 1, agree = 2, neither agree nor disagree = 3, strongly disagree = 4 and disagree = 5

### Scoring:

Items 1-6 make up the Self-Efficacy Subscale

Items 7-12 make up the Life Scheme Subscale

Scoring is kept on a continuous basis.

**Total score coding system of Spiritual Well-Being Index:** was calculated by the summation of the two subscales and classified as follows:

Poor wellbeing= (12-28)

Fair well being= (29-45)

Good well being = (46-60)

### Procedure for data collection:

**Approvals:** Two written official approval were obtained from the directors of Menoufia University hospital and Shebien El Kom Teaching hospital to conduct this study after submitting the proposal, explaining aims and methods of the study. Two written official approval were sent to the directors of hemodialysis units of both hospitals for their written administrative permission to start data collection.

**Study Period:** Collection of data for the current study was done during the period from mid May 2018 to the end of the September 2018.

**Ethical consideration:** During the initial interview, the purpose of the study was explained to the hemodialysis patients. An oral consent was obtained from the subjects. They were assured that all information would be confidential to assure the confidentiality of them. Subjects were assured that their participation in the study was voluntary and that they could withdraw from the study at any time and can refuse to participate in the study.

**Validity of tools:** A jury of five experts; four academic staff from the medical surgical and community health nursing and one academic staff from the statistical department reviewed the tools and tested the clarity, feasibility and relevance of tools. The corrections were done accordingly based on their response.

**Reliability of the tool:** The reliability co-efficient regarding structured survey questionnaire revealed (0.8683). Regarding the Lifestyle Questionnaire and Spiritual Well-Being Index, they were valid and reliable as they were adopted from<sup>(21,22)</sup> respectively. The investigators repeated the reliability co-efficient regarding Lifestyle questionnaire, the Cronbach's alpha of the tool was showed (0.798) while, for the Spiritual Well-Being Index the reliability co-efficient was equal to (0.847). Hence, the study tools indicated good reliability for conducting the research study.

**Pilot study:** A pilot study was carried out on 10% of the total number of the study subjects in order to revise tools for clarity, understanding, comprehensiveness, practicability, applicability, feasibility and ease of implementation, detecting the obstacles

and problems that may be encountered during data collection. It also helped to estimate the time needed to fill in the study tools. The investigators have excluded the piloted data from the sample size participating in the study.

**Informed consent:** The consent form was explained to the subjects, the aims and objectives of the study. In addition, subjects were informed that their participation in the study is voluntary therefore, they had the right to choose whether to participate or withdraw from the study at any time, and their decision would not affect their treatment or the services they are offered in the hemodialysis units. Lastly, but not least, before asking any subject to give their written consent, the investigators asked the subjects if they have read the consent form carefully and have understood what the study was about and what their involvement would entail. Dignity, privacy, and confidentiality were respected for all subjects. All the information given was handled as confidential data, only accessible to the investigator. The study findings were identified by codes not by names.

**Data collection procedure:** Data collection was conducted three days per week in the three daytime shifts of hemodialysis units the first morning shift was starting from (6.30-10.30 am.) and the second morning shift was starting from (11 am.- 3 pm.) while, the afternoon shift was starting from (3.30 pm.- 7.30 pm.). The average time spent in data collection with each patient was approximately 15 to 20 minutes for filling the whole data collection tools.

#### Statistical analysis:

The collected data coded, organized and tabulated into specially designed formats to be suitable for computer filling. Data analysis was carried out using the Statistical Package for the Social Science (SPSS) Version 22 for Statistical analysis. Descriptive statistics consisted of frequency and percentages were used to analyze subjects' data characteristics, lifestyle questionnaire and spiritual wellbeing index also, frequency and percentages were used to analyze total scores of two latent tools. Chi-square was used to examine correlations between patients' sociodemographic characteristics and spiritual wellbeing index total score.

## 5. RESULTS

End stage kidney disease (ESKD) has become a public health concern in Egypt as the increased number of ESKD patients on maintenance dialysis has been growing dramatically<sup>(8)</sup>. Several lifestyle factors are associated with ESKD and consequently affect the patients' well-being<sup>(13)</sup>.

**Table 1:** shows distribution of studied sample according to their sociodemographic data. Clarified that (43.5 %) of maintenance hemodialysis patients were within the age group of (20-40) years and the same percent for the age group of (41-60) years, while (50.4%) of the studied sample were females, (40.9%) of them had secondary education and (35.7%) had free works. Additionally, (73%) of them were married and (62.5%) of rural origin while, (74.8%) of cases had no enough income, (85.2%) of cases were living with their families and (59.1) 0-2 children.

**Table 2:** shows distribution of studied sample according to their medical history. Indicated that (45.2%) of cases started hemodialysis since 6-10 years and (56.5%) of them have not any accompanied diseases.

**Table 3:** shows distribution of Life style (Physical activity) among studied hemodialysis patients. Illustrated that during the last year (50.4%) of the studied patients hadn't participated any kind of physical activity, (41.7%) of them were practicing walking activity in the past, (43.5%) were enjoying walking activity and (99.1 %) of them didn't dislike any kind of physical activity.

**Table 4:** shows distribution of studied hemodialysis patients according to their Life-style (Occupation/Leisure). Demonstrated that (52.2%) of studied sample still working in their occupation compared to (47.8%) Left their occupation because of dialysis, and (79.1%) of them their occupation not requiring physical activity. In addition, (42.6%) likes listening to music or Qur'an in their spare time and (51.3%) hadn't any hobbies that they like to do in their spare time.

**Table 5:** Explores distribution of studied hemodialysis patients according to their Life style (stress). Clarified that (49.6%) of studied sample had moderate stress tolerance, (36.5%) of them listed many situations made them very stressful easily and (52.2%) of them tried to practice a variety of methods to be relaxed.

**Table 6:** shows distribution of studied hemodialysis patients according to their dietary lifestyle behaviour. Demonstrated that (56.5 %) of studied sample considered themselves do not take a well balanced diet, (93.9 %) eat a salt free/restricted diet and (53.9 %) of them take a restricted protein diet. In addition, (50.5%) of the studied sample recognized that they do not eat more than they required and (59.1%) don't know how many calories they consumed compared to (70.4%) of them drink the ideal/prescribed amount of water daily.

**Table 7:** clarifies distribution of studied hemodialysis patients according to their lifestyle (Weight). Concluded that (47 %) of studied sample considered themselves overweight, (70.4%) don't know how many kilograms would they lose and (57.4 %) of them recognized that weight loss is very important for them.

**Table 8:** illustrates distribution of studied hemodialysis patients according to their lifestyle (fitness). Demonstrated that (55.7% & 32.3%) respectively of the studied sample considered themselves have good fitness and good strength, while regarding flexibility (48.7%) of them considered themselves are very good flexible. In addition, regarding coordination (40.9%) of the studied sample were good coordinated, while (55.7%) of them were not participating in any daily exercises at all.

**Table 9:** clarifies distribution of studied hemodialysis patients according to their lifestyle (goals). Illustrated that (53 %) of the studied sample were able to set goals for practicing exercises for the next month only and (55.7%) of them considered themselves have good fitness and good strength, while regarding rating their goals about undertaking exercise (48.7%) of them considered goals about exercises is quiet important. In addition, regarding importance of exercises (73%) of the studied sample recognized that practicing exercises is important for improving the overall health, while (27%) considered that practicing daily exercises is important for improving mood and stress levels.

**Table 10:** shows the distribution and mean score of patients' agreements to self-efficacy subscale of Spirituality Index of Well-Being (SIWB), which concluded that it was  $15.9 \pm 4.4$  with the highest agreement, was (49.6%) for "There is not much I can do to make a difference in my life". Moreover, the highest disagreement was (30.4%) for "I am overwhelmed when I have personal difficulties and problems".

**Table 11:** clarifies the distribution and mean score of patients' agreements to Life-scheme subscale of Spirituality Index of Well-Being (SIWB), which concluded that it was  $17.6 \pm 5.2$  with the highest agreement, was (45.2%) for "There is a great disturbance in my life at this time". Moreover, the highest disagreement was (51.3%) for "I In this world, I don't know where I fit in".

**Table 12:** shows the relationship between hemodialysis patients' sociodemographic characteristics and their well being index total scores. It illustrated that there was statistically high significant correlation between age, education and income in relation to well being index total scores as the p values were (0.000) for all of them, while there is no statistically significant correlation regarding sex and residence in relation to well being index total scores as the p values were (0.16 & 0.81) respectively.

**Figure 1:** shows distribution of maintenance hemodialysis patients according to self-efficacy total scores of Spirituality index well-being, which concluded that of them (40%, 55.7% & 4.3%) respectively had Poor, Good and Very good self-efficacy.

**Figure 2:** illustrates distribution of maintenance hemodialysis patients according to life scheme total scores of Spirituality index well-being, which demonstrated that of them (33.9%, 47.8% & 18.3%) respectively had Poor, Good and Very good life scheme.

**Figure 3:** shows distribution of maintenance hemodialysis patients according to Spirituality index of well-being (SIWB) total scores, which revealed that of them (37.4%, 56.5% & 6.1%) respectively had Poor, Good and Very good well-being.

**International Journal of Novel Research in Healthcare and Nursing**

 Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)
**Table 1: Sociodemographic data of studied sample**

| Sociodemographic data   |                     | Frequency  | Percent     |
|-------------------------|---------------------|------------|-------------|
| <b>Age:</b>             | 20 - 40 years       | 50         | 43.5        |
|                         | 41 -60 years        | 50         | 43.5        |
|                         | 61 -70 years        | 15         | 13.0        |
| <b>Sex:</b>             | Male                | 57         | 49.6        |
|                         | Female              | 58         | 50.4        |
| <b>Education:</b>       | Illiterate. & R&W   | 22         | 19.1        |
|                         | Elementary          | 16         | 13.9        |
|                         | Secondary education | 47         | 40.9        |
|                         | University          | 30         | 26.1        |
| <b>Occupation:</b>      | Employee            | 23         | 20          |
|                         | Free work           | 41         | 35.7        |
|                         | Not work            | 28         | 24.3        |
|                         | Retired             | 23         | 20          |
| <b>Marital status:</b>  | Single/divorced     | 23         | 20          |
|                         | Married             | 84         | 73          |
|                         | Widow               | 8          | 7           |
| <b>Residence:</b>       | Rural               | 73         | 63.5        |
|                         | Urban               | 42         | 36.5        |
| <b>Income:</b>          | Not enough          | 86         | 74.8        |
|                         | Enough              | 29         | 25.2        |
| <b>Living with:</b>     | Family              | 98         | 85.2        |
|                         | Others              | 6          | 5.2         |
|                         | Alone               | 11         | 9.6         |
| <b>N0. Of children:</b> | 0-2 children        | 68         | 59.1        |
|                         | 3-6 children        | 47         | 40.9        |
| <b>Total</b>            |                     | <b>115</b> | <b>100%</b> |

**Table 2: Distribution of studied sample according to their present medical history of (N=115)**

| Medical data  | Frequency  | Percent      |
|---|------------|--------------|
| <b>Years of dialysis</b>                              |            |              |
| <5 years  | 36         | 31.3         |
| 6-10 years  | 52         | 45.2         |
| 11 – 20 years   | 27         | 23.5         |
| <b>List of accompanied diseases with hemodialysis</b> |            |              |
| None  | 65         | 56.5         |
| Hypertension  | 13         | 11.3         |
| Diabetes  | 8          | 7.0          |
| respiratory problems                                  | 10         | 8.7          |
| Others  | 19         | 16.5         |
| <b>Taking drugs for these diseases</b>                |            |              |
| Yes   | 106        | 92.2         |
| No  | 9          | 7.8          |
| <b>Total</b>  | <b>115</b> | <b>100.0</b> |



**Table 3: Distribution of Life style (physical activity) among maintenance hemodialysis patients**

|          | Physical activity  | NO.        | %          |
|----------|--|------------|------------|
| <b>1</b> | <b>Do you participate in any kind of exercise in the last 12 months?</b> |            |            |
|          | Nothing  | 58         | 50.4       |
|          | From one to two per month  | 13         | 11.3       |
|          | From one to two per week   | 37         | 32.2       |
|          | From 3 to 4 per week   | 7          | 6.1        |
| <b>2</b> | <b>What is your sport or activity in the past?</b>                       |            |            |
|          | Nothing  | 20         | 17.4       |
|          | Walking  | 48         | 41.7       |
|          | Specific activities  | 47         | 40.9       |
| <b>3</b> | <b>What type of exercise do you enjoy?</b>                               |            |            |
|          | Nothing  | 25         | 21.7       |
|          | Walking  | 50         | 43.5       |
|          | Specific activities  | 40         | 34.8       |
| <b>4</b> | <b>What form of sport or exercise do you dislike?</b>                    |            |            |
|          | Nothing  | 114        | 99.1       |
|          | Walking  | 1          | 0.9        |
|          | <b>Total</b>   | <b>115</b> | <b>100</b> |

**Table 4: Distribution of maintenance hemodialysis patients according their Life style (Occupation/Leisure)**

|          | Occupation/Leisure   | NO.        | %          |
|----------|--|------------|------------|
| <b>5</b> | <b>What is your present occupation?</b>                                  |            |            |
|          | Left their occupation  | 55         | 47.8       |
|          | Still working and have a job   | 60         | 52.2       |
| <b>6</b> | <b>Does your occupation involve much physical exercise i.e. lifting?</b> |            |            |
|          | No   | 91         | 79.1       |
|          | Yes  | 24         | 20.9       |
| <b>7</b> | <b>What hobbies do you like to do in your spare time?</b>                |            |            |
|          | Listening to music or Qur'an   | 49         | 42.6       |
|          | Nothing  | 59         | 51.3       |
|          | Walking  | 7          | 6.1        |
|          | <b>Total</b>   | <b>115</b> | <b>100</b> |

**Table 5: Distribution of maintenance hemodialysis patients according their Life style (stress)**

|           | Stress level   | NO.        | %          |
|-----------|--|------------|------------|
| <b>8</b>  | <b>Rate yourself on a scale of 1 – 10. (1 being calmest 10 highest stress)</b> |            |            |
|           | Low stress tolerance (1-3)   | 29         | 25.2       |
|           | Moderate stress tolerance (4-6)  | 57         | 49.6       |
|           | High stress tolerance(7-10)  | 29         | 25.2       |
| <b>9</b>  | <b>What situations make you feel stressed?</b>                                 |            |            |
|           | Nothing can make me feel stressed  | 22         | 19.2       |
|           | list only one situation  | 5          | 4.3        |
|           | list 2 situations  | 42         | 36.5       |
|           | list more than 2 situations  | 46         | 40         |
| <b>10</b> | <b>How do you relax?</b>   |            |            |
|           | Nothing can relax me   | 3          | 2.6        |
|           | I can relax Only by one method   | 15         | 13         |
|           | Two methods can relax me   | 37         | 32.2       |
|           | More than Two methods can relax me   | 60         | 52.2       |
|           | <b>Total</b>   | <b>115</b> | <b>100</b> |

**Table 6: Distribution of maintenance hemodialysis patients according their Life style (Diet)**

|           | Diet  | NO.        | %          |
|-----------|---|------------|------------|
| <b>11</b> | <b>Do you think you eat a healthy diet?</b>                 |            |            |
|           | Yes   | 50         | 43.5       |
|           | No  | 65         | 56.5       |
| <b>12</b> | <b>Do you eat a salt free/ restricted diet?</b>             |            |            |
|           | Yes   | 108        | 93.9       |
|           | No  | 7          | 6.1        |
| <b>13</b> | <b>Do you eat a restricted protein diet?</b>                |            |            |
|           | Yes   | 62         | 53.9       |
|           | No  | 53         | 46.1       |
| <b>14</b> | <b>Do you think you eat more than you need?</b>             |            |            |
|           | I don't know  | 29         | 25.2       |
|           | Yes   | 28         | 24.3       |
|           | No  | 58         | 50.5       |
| <b>15</b> | <b>How many calories do you think you consume in a day?</b> |            |            |
|           | Don't know  | 68         | 59.1       |
|           | Less/more than ideal/prescribed                             | 13         | 11.3       |
|           | Within ideal/prescribed                                     | 34         | 29.6       |
| <b>16</b> | <b>How many liters of water do you drink in a day?</b>      |            |            |
|           | Don't know  | 7          | 6.1        |
|           | Less/more than the ideal/prescribed                         | 27         | 23.5       |
|           | Within the ideal/prescribed                                 | 81         | 70.4       |
|           | <b>Total</b>  | <b>115</b> | <b>100</b> |

**Table 7: Distribution of maintenance hemodialysis patients according their Life style (Weight)**

|           | Weight   | NO.        | %          |
|-----------|--|------------|------------|
| <b>17</b> | <b>Do you consider yourself overweight?</b>            |            |            |
|           | Don't know   | 20         | 17.4       |
|           | Yes  | 54         | 47         |
|           | No   | 41         | 35.6       |
| <b>18</b> | <b>If yes, how much would you like to lose? (N=54)</b> |            |            |
|           | no answer  | 5          | 9.3        |
|           | Don't know   | 38         | 70.4       |
|           | From 5 to 10 kilogram                                  | 11         | 20.3       |
| <b>19</b> | <b>Is losing weight important to you?</b>              |            |            |
|           | Don't know   | 19         | 16.5       |
|           | Not important  | 30         | 26.1       |
|           | Yes important  | 66         | 57.4       |
|           | <b>Total</b>   | <b>115</b> | <b>100</b> |

**Table 8: Distribution of maintenance hemodialysis patients according their Life style (Fitness)**

|           | Fitness  | NO | %    |
|-----------|--|----|------|
| <b>20</b> | <b>Rate yourself on a scale of 1 – 10 as to how fit you think you are?</b> |    |      |
|           | 3 - 4 (poor fitness)   | 10 | 8.7  |
|           | 5- 6 (good fitness)  | 64 | 55.7 |

**International Journal of Novel Research in Healthcare and Nursing**

 Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

|           |  |            |            |
|-----------|--|------------|------------|
|           | 7- 8 (very good fitness)   | 19         | 16.5       |
| <b>21</b> | 9- 10(Highest fitness)   | 22         | 19.1       |
|           | <b>How good is your stamina?</b> 1 no stamina 10 Highest stamina |            |            |
|           | 9 -10 (Highest stamina)  | 23         | 20         |
|           | 7-8 (very good stamina)  | 30         | 26         |
|           | 5-6 (good stamina)   | 37         | 32.2       |
|           | 3-4 (poor stamina)   | 21         | 18.3       |
| <b>22</b> | 1-2 (no stamina)   | 4          | 3.5        |
|           | <b>How strong do you think you are?</b>                          |            |            |
|           | 9-10 (Highest strength)  | 28         | 24.3       |
|           | 7-8(very good strength)  | 38         | 33         |
|           | 5-6(good strength)   | 39         | 36         |
|           | 3-4(poor strength)   | 10         | 8.7        |
| <b>23</b> | <b>How flexible do you think you are?</b>                        |            |            |
|           | 1-2 ( very poor flexible)  | 5          | 4.3        |
|           | 3-4 (poor flexible)  | 4          | 3.5        |
|           | 5-6 (good flexible)  | 26         | 22.6       |
|           | 7-8 (very good flexible)   | 56         | 48.7       |
|           | 9-10 (Highest flexible)  | 24         | 20.9       |
| <b>24</b> | <b>How coordinated do you think you are?</b>                     |            |            |
|           | 1-2 ( very poor coordinated)                                     | 11         | 9.6        |
|           | 3-4 (poor coordinated)   | 12         | 10.4       |
|           | 5-6 ( good coordinated)  | 47         | 40.9       |
|           | 7-8 ( very good coordinated)                                     | 40         | 34.8       |
|           | 9-10 (Highest coordinated)                                       | 5          | 4.3        |
| <b>25</b> | <b>How much time will you have to do exercise?</b>               |            |            |
|           | Not practicing   | 64         | 55.7       |
|           | Practicing minutes/ week   | 28         | 24.3       |
|           | Practicing minutes/ day  | 23         | 20         |
|           | <b>Total</b>   | <b>115</b> | <b>100</b> |

**Table 9: Distribution of maintenance hemodialysis patients according their Life style (Goals)**

|           | Goals  | NO.        | %          |
|-----------|--|------------|------------|
| <b>26</b> | <b>What are your goals for the next...?</b>      |            |            |
|           | No answer/ don't know                            | 44         | 38.3       |
|           | Give goals for One month                         | 61         | 53         |
|           | List goals for Two months                        | 7          | 6.1        |
|           | List goals for Three months                      | 3          | 2.6        |
| <b>27</b> | <b>Rate your goals in undertaking exercise</b>   |            |            |
|           | Not important at all                             | 5          | 4.3        |
|           | Not very important                               | 40         | 34.8       |
|           | Quite important                                  | 64         | 55.7       |
|           | Extremely important                              | 6          | 5.2        |
| <b>28</b> | <b>What is the importance of exercise to you</b> |            |            |
|           | Improve overall health                           | 84         | 73         |
|           | Improve moods and stress levels                  | 31         | 27         |
|           | <b>Total</b>                                     | <b>115</b> | <b>100</b> |

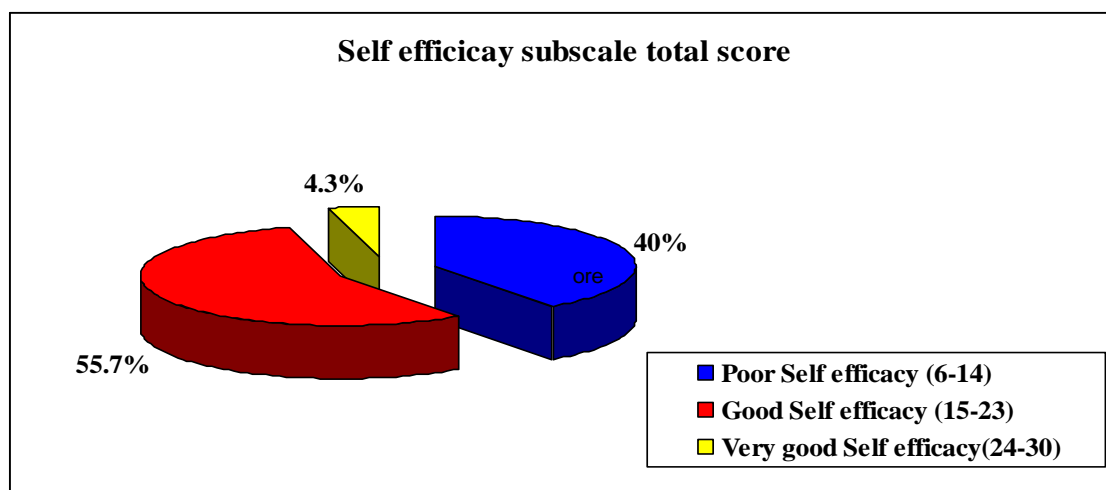
**Table 10: The distribution and mean score of maintenance hemodialysis patients' agreements to self-efficacy subscale of Spirituality index of well-being (SIWB)**

| The patients' responses to Spirituality index of well-being (SIWB) (Self-efficacy subscale). | Strongly Agree    |      | Agree |      | Neither Agree nor disagree |      | Disagree |      | Strongly Disagree |     |
|--|-------------------|------|-------|------|----------------------------|------|----------|------|-------------------|-----|
|  | N0.               | %    | No.   | %    | N0.                        | %    | N0.      | %    | No.               | %   |
| 1. There is not much I can do to help myself   | 50                | 43.5 | 37    | 32.2 | 12                         | 6.4  | 6        | 5.2  | 10                | 8.7 |
| 2. Often, there is no way I can complete what I have started.                                | 33                | 28.7 | 37    | 32.2 | 28                         | 24.3 | 17       | 14.8 | 0                 | 0   |
| 3. I can't begin to understand my problems.  | 2                 | 1.7  | 16    | 13.9 | 51                         | 44.4 | 40       | 34.8 | 6                 | 5.2 |
| 4. I am overwhelmed when I have personal difficulties and problems                           | 14                | 12.2 | 23    | 20   | 32                         | 27.8 | 35       | 30.4 | 11                | 9.6 |
| 5. I don't know how to begin to solve my problems  | 10                | 8.7  | 36    | 31.3 | 22                         | 19.2 | 38       | 33   | 9                 | 7.8 |
| 6. There is not much I can do to make a difference in my life.                               | 21                | 18.2 | 57    | 49.6 | 14                         | 12.2 | 23       | 20   | 0                 | 0   |
| <b>Mean total score of Self-efficacy subscale</b>  | <b>15.9 ± 4.4</b> |      |       |      |                            |      |          |      |                   |     |

**Table 11: The distribution and mean score of maintenance hemodialysis patients' agreements to Life scheme subscale of Spirituality index of well-being (SIWB)**

| The patients responses to Spirituality index of well-being (SIWB) (Life scheme subscale) | Strongly Agree    |      | Agree |      | Neither Agree nor disagree |      | Disagree |      | Strongly Disagree |      |
|--|-------------------|------|-------|------|----------------------------|------|----------|------|-------------------|------|
|  | N0.               | %    | N0.   | %    | N0.                        | %    | N0.      | %    | N0.               | %    |
| 1. I haven't found my life's purpose yet   | 31                | 27   | 33    | 28.7 | 25                         | 21.7 | 19       | 16.5 | 7                 | 6.1  |
| 2. I don't know who I am, where I came from, or where I am going.                        | 1                 | 0.9  | 17    | 14.8 | 50                         | 43.5 | 47       | 40.8 | 0                 | 0    |
| 3. I have a lack of purpose in my life   | 14                | 12.2 | 12    | 10.4 | 41                         | 35.7 | 39       | 33.9 | 9                 | 7.8  |
| 4. In this world, I don't know where I fit in  | 7                 | 6.1  | 22    | 19.2 | 25                         | 21.7 | 59       | 51.3 | 2                 | 1.7  |
| 5. I am far from understanding the meaning of life.                                      | 16                | 13.9 | 11    | 9.6  | 21                         | 18.3 | 44       | 38.2 | 23                | 20   |
| 6. There is a great disturbance in my life at this time.                                 | 52                | 45.2 | 31    | 27   | 9                          | 7.8  | 9        | 7.8  | 14                | 12.2 |
| <b>Mean total score of Life scheme subscale</b>  | <b>17.6 ± 5.2</b> |      |       |      |                            |      |          |      |                   |      |

**Figure 1: Distribution of maintenance hemodialysis patients according to self-efficacy total score of Spirituality index well-being**



International Journal of Novel Research in Healthcare and Nursing

Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

Figure 2: Distribution of maintenance hemodialysis patients according to life scheme subscale total score of Spirituality index of well-being (SIWB)

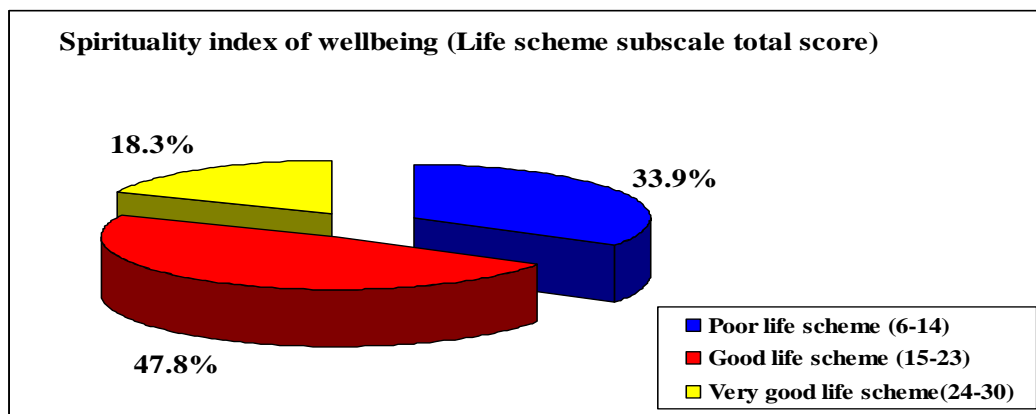


Figure 3: Distribution of maintenance hemodialysis patients according to Spirituality index well-being (SIWB) total scores

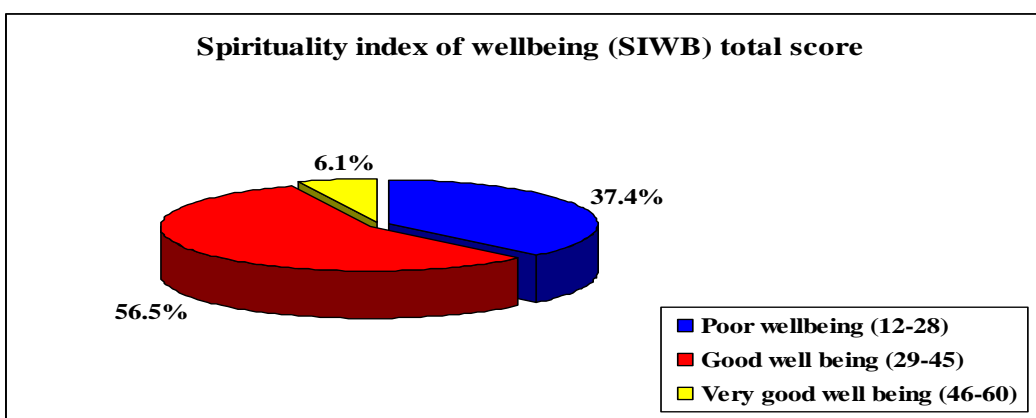


Table (12): Relationship between hemodialysis patients' socio-demographic characteristics and their total well being (n= 115)

| Sociodemographic characteristics |                | Total well being scores |      |      |      |           |      | P-value        |          |
|----------------------------------|----------------|-------------------------|------|------|------|-----------|------|----------------|----------|
|                                  |                | Poor                    |      | Good |      | Very good |      |                |          |
|                                  |                | N                       | %    | N    | %    | N         | %    | X <sup>2</sup> | P        |
| Age (years)                      | 20 - 40years   | 23                      | 46   | 20   | 40   | 7         | 14   | LR=22.2        | 0.000HS  |
|                                  | 41 – 60 years  | 12                      | 24   | 38   | 76   | 0         | 0    |                |          |
|                                  | 61 – 70 years  | 8                       | 53.3 | 7    | 46.7 | 0         | 0    |                |          |
| Sex                              | Male           | 17                      | 29.8 | 35   | 61.4 | 5         | 8.8  | LR=2.6         | 0.16 NS  |
|                                  | Female         | 26                      | 44.8 | 30   | 51.8 | 2         | 3.4  |                |          |
| Education                        | Illet& R&W     | 15                      | 68.2 | 7    | 31.8 | 0         | 0    | LR=64.1        | 0.000 HS |
|                                  | Elementary edu | 0                       | 0    | 13   | 81.3 | 3         | 18.8 |                |          |
|                                  | Secondary edu. | 28                      | 59.6 | 17   | 36.2 | 2         | 4.3  |                |          |
|                                  | University     | 0                       | 0    | 28   | 93.3 | 2         | 6.7  |                |          |
| Residence                        | Rural          | 26                      | 35.6 | 42   | 57.6 | 5         | 6.8  | LR=0.41        | 0.81 NS  |
|                                  | Urban          | 17                      | 40.5 | 23   | 54.7 | 2         | 4.8  |                |          |
| Income                           | Not enough     | 41                      | 47.7 | 40   | 46.5 | 5         | 5.8  | LR=18.7        | 0.000 HS |
|                                  | Enough         | 2                       | 6.9  | 25   | 86.2 | 2         | 6.9  |                |          |
| Total                            |                | 43                      | 37.4 | 65   | 56.5 | 7         | 6.1  |                |          |

HS=high significance    NS=not significant    LR=Likelihood ratio

## 6. DISCUSSION

Today, changing lifestyle and gradually obtaining good habits as well as replacing helpful processes instead of harmful ones in life are considered the most important indicators of health in all its dimensions<sup>(14)</sup>.

Regarding the sociodemographic characteristics of the studied maintenance hemodialysis patients the current study clarified that more than one third of them were within the age group of 20-40 years and the same percent for the age group of (41-60) years and had secondary education and free works, while almost half of the studied sample was females. Additionally, the majority of maintenance hemodialysis patients were married of rural origin, had no enough income, were living with their families and had 0-2 children.

These results were in contradict with Economidou et al., 2015 who stated that "regarding the level of academic education, 30% of patients had finished primary school, 25% secondary and 22 % high school"<sup>(23)</sup>. Moreover, the results of Gerogianni, 2013 were opposing the current study findings as he found that "majority of patients were within the age group of 40-60 and were married males with governmental jobs"<sup>(24)</sup>. Additionally, the results of Francisco et al., 2015 were contradicting who said, "Majority of the studied hemodialysis patients were men and aged under 75 years"<sup>(25)</sup> likewise, Sima et al., 2012 reported, "Regarding the sociodemographic characteristics of the study subjects; it revealed that almost half of the hemodialysis patients; their age was between 35-59 years"<sup>(26)</sup>. These dissimilarities may be due to the great variance in patients' sociodemographic characteristics from country to another.

**As regards to** studied maintenance hemodialysis patients' medical history, the current study indicated that less than half of cases started hemodialysis since 6-10 years and more than half of them have not any accompanied diseases. These findings can be explained as the patients' survival rates increased much more than before, because of the great advancement and continuous development of renal replacement therapy. Zahran, 2011 confirmed these results as he illustrated that "hemodialysis patients had longer life and more expectancy rates than before"<sup>(9)</sup>.

**Answering the first research question,** Is maintenance hemodialysis having an effect on patients' lifestyle? The current study indicated that regarding **physical activity** more than half of the studied patients hadn't participated in any kind of physical activity during the last year and more than one third of them were enjoying practicing walking activity in the past. These findings may be attributed to that most of the hemodialysis patients are forced to reduce the time spent on routine activities or to perform fewer activities because of their impaired physical strength, which is caused by the physical exhaustion experienced in each dialysis session and the day after dialysis.

These results are in line with Kazutoshi et al., 2012 who concluded that "The majority of the study participants reported that their health condition did not allow them to do any moderate or strenuous activities and only minority of them performed less activities than they would like" (27). Furthermore, this study results were in accordance with Orth and Hallan 2018 who reported, "Physical functionality of participants was greatly impaired because of impaired physical health, so they became unable to perform their activities or became less careful about performing their activities"<sup>(28)</sup>. Nevertheless, these results were contradicting with the study done by Ohta et al. 2017 who mentioned, "Regular exercises were practiced by 32% of hemodialysis patients"<sup>(29)</sup>.

Furthermore, as regard to life-style (**Occupation/Leisure**) the current study revealed that approximately half of the studied sample left their occupation because of dialysis, and more than three quarters of them their occupation not requiring physical activity. In addition, more than half of the studied maintenance hemodialysis patients had not any hobbies that they like to do in their spare time compared to more than one third of the studied patients like listening to music or Qur'an in their spare time. These results confirmed that maintenance hemodialysis patients' lifestyle including; vocational, social, recreational and daily living activities may all be adversely affected by the three times per week maintenance hemodialysis schedule.

These findings are similar to those of Wakasugi et al., 2013 they mentioned, "Many patients usually leave their job, their family or their home due to long-term treatment because they have to be near from the dialysis centre or due to frequent hospitalization for some days"<sup>(30)</sup>. Likewise, Kazutoshi et al., 2012 concluded that, "53.8% of the participants reduced the

time they used to spend in work and other activities after the beginning of hemodialysis while 51.6% of patients had difficulty in performing their work or other usual activities" (27). In addition, a previous study conducted by Kaitelidou et al., 2017 had the same results, where he stated that "the majority of the participants in the study had a reduced capacity for work, which bothered them a lot and 39.4 % of the respondents reported that the disease prevented them from being able to work" (31).

Moreover, regarding life style (**stress**) the present study results clarified that almost half of studied sample had moderate stress tolerance, while approximately one third of them listed many situations made them very stressful easily and more than half of the studied of them tried to practice a variety of methods to be relaxed. These results could be attributed to that maintenance hemodialysis patients did not have good adaptability methods for coping with stress and the majority of them asked others to help them for problem solving or may be due to the lack of their social relations.

These findings are congruent with Frisoli et al., 2011 who stated "The hemodialysis patents are most frequently experienced stressors affecting their daily lives including sleep disorders and especially problems with insomnia at night, the limitations in fluids, the impossibility of travelling, the lack of necessary sleep, dietary restrictions and reduced capacity for house works"(32). Likewise, the results of Creary and Drennan 2015 affirmed the current study results and illustrated "The maintenance hemodialysis patients are combative, anxious and nervous even to their care givers and to their medical staff" (33). On contrary Moschopoulou and Savvidaki 2013 were opposing to this study results as they demonstrated, "Hemodialysis patients in their study did not have so much stress and anxiety as 37.5% of the respondents answered that few times they used to behave with frustration and irritability to people around them. Additionally, 43.8% answered that few times they used to feel calm and serenity, while 31.9% many times felt energy and 35.4% of them answered that many times they felt depressed, while 41.1% referred that few times they felt happy. Finally, 41.8% of patients stated that many times they felt tired" (34).

Likewise, several studies (35-37) have affirmed this study results and showed that "concerning stress and anxiety among patients with kidney failure, a large percentage of patients (50.5%) had moderate to too much anxiety. These studies illustrated that the most frequent causes of stress are the fear of imminent death and the uncertainty about the future as well as their fear of the possibility that their arteriovenous fistula will become non-functional. Additionally, a significant stressor for patients on dialysis is the possibility of getting infection, the complications of the disease and their physical health deterioration". These findings were in similarity with those of a previous study, where Ritz & Schwenger al., 2015 suggested, "Regarding the restrictions of ESRD, fluid and food restriction were the most stressful factors for these patients" (38).

In addition, regarding hemodialysis patients' **dietary** lifestyle behaviour the present study results revealed that about two thirds of the studied patients' considered themselves do not take a well balanced diet and more than half of them take a restricted protein diet, while almost all the studied sample mentioned they eat a salt free or restricted diet. Moreover, almost half of studied sample recognized that they do not eat more than they required compared to approximately two thirds don't know how many calories they consumed and about three quarters of the studied patients drink the ideal amount of water daily. the current study results is in accordance with that of Erdem et al., 2012 who mentioned "Turkish hemodialysis patients were on a salt-free diet but did not know how much salt could be consumed and were aware of the necessity of fluid restriction but did not know how to control their thirst in hot weather"(39). Moreover, these results agreed with a study in the USA by Pender et al. 2006 investigated "how much attention hemodialysis patients paid to the recommendations given by healthcare personnel. It revealed that 88% of patients were follow salt intake restriction while, approximately 76% of them drink the prescribed amount of daily water and approximately 90% of them were take daily snacks of fruit and vegetables" (17). Besides, Ohta et al., 2017 was contradicting these findings and showed that "79% of renal failure patients were eating fruit and vegetables daily with an awareness of the healthy and balanced diet"(29).

Furthermore, as regard to life-style (**Weight**) the current study concluded that approximately half of the studied hemodialysis patients considered themselves overweight, with approximately three quarters of them don't know how many kilograms would they lose and more than half of patients recognized that weight loss is very important for them. These findings were similar to a study in Japan by Ohta et al., 2017 who "mentioned that 53% of patients had awareness of salt consumption and 38% of them had awareness about obesity "(29).

Regarding lifestyle (**fitness**) the current study demonstrated that more than half of the studied patients considered themselves have good fitness and more than one third had good strength, while regarding flexibility approximately half of them considered themselves are very good flexible. In addition, regarding coordination more than one third of the studied sample were good coordinated, while more than half of them were not participating in any daily exercises at all. These findings are in agreement with Erdem et al., 2012 who said that "while patients were aware of the necessity of regular exercise, they did not know what kind of exercise or for what duration was necessary to do it" <sup>(39)</sup>.

Moreover, regarding life style (**goals**) the present study results clarified that almost half of the studied sample were able to set goals for practicing exercises for the next month only. In addition, less than half of the studied sample considered goals about exercises is quiet important and approximately three quarters of them recognized that practicing exercises is important for improving the overall health, while more than one quarter of the studied patients considered that practicing daily exercises is important for improving mood and stress levels. The current study results were in the same line with Kotseva et al., 2009 who illustrated that "largest percentage of the respondents 41.7% agreed that renal failure affected negatively their lifestyle, while 45.3% used to spend too much time trying to cope with nephropathy. Finally, 46.9% of participants were often feeling frustrated and angry with their renal disease which made them unable or not care about future goals, while 36.7% of them were feeling burden on their family" <sup>(40)</sup>. In addition, Ricardo et al., 2013 disagreed with this study results and stated, "Goals for regular exercise were planned by 72% of patients while in the current study only 52% of the studied maintenance hemodialysis patients were able to set goals for practicing exercises" <sup>(41)</sup>. likewise, Abo Deif et al., 2015 was opposing the current study results as they reported that " low percentage of patients were suffer from depression and mood swings which make them unable to set their future goals for any aspect in their lives"<sup>(12)</sup>.

**Answering the second research question**, Is maintenance hemodialysis having an effect on patients' wellbeing? The current study concluded that mean score of patient's agreements to self-efficacy subscale of spirituality index of well-being (SIWB) was  $15.9 \pm 4.4$  with almost half of the studied patients agreed, "There is not much I can do to make a difference in my life" and strongly agreed "There is not much I can do to help myself". In addition, approximately one third of them agreed, "There is no way I can complete what I have started" and disagreed, "I am overwhelmed when I have personal difficulties and problems" and "I don't know how to solve my problems". Moreover, less than half of the studied patients neither agreed nor disagreed, "I can't begin to understand my problems". This can be attributed to their continuous exhaustion, weakness, pain and bone aches all are capable to make them frustrated, depressed and consequently affected enough their self-efficacy.

The current study results were in accordance with Gerald and Devins 2014 they mentioned that "maintenance hemodialysis patients used to wake up a lot of times during the night due to insomnia, while most of them remained awake during the daytime because of dialysis hours which in turn harmfully affected their self-efficacy and well-being"<sup>(13)</sup>. Besides, Frisoli et al., 2011 who reported, "Patients on dialysis have multiple additional problems this, makes them feel depressed and nervous toward their family, social and friendly environment, which in turn had a bad effect on their self-efficacy" <sup>(32)</sup>.

Furthermore, the findings of the existing study revealed that the mean score of patients' agreements to self-scheme subscale of Spirituality Index of Well-Being (SIWB) was  $17.6 \pm 5.2$  with less than half of the studied patients strongly agreed, "There is a great disturbance in my life at this time". In addition, more than half of them disagreed, "In this world, I don't know where I fit in" while, approximately one third of them agreed, "I haven't found my life's purpose yet " and disagreed, "I am far from understanding the meaning of life". Moreover, of the studied patients less than half and one third respectively neither agreed nor disagreed, "I don't know who I am, where I came from, or where I am going" and "I have a lack of purpose in my life".

What's supplementary, the findings of the existing study revealed that regarding maintenance hemodialysis patients' self-efficacy total scores more than one third, compared to more than half of them respectively had Poor and good self-efficacy. In addition, regarding patients' life scheme total scores almost one third of them compared to less than half of them respectively had Poor and good life scheme. Moreover, regarding patients' Spirituality index of well-being (SIWB) total scores, more than one third compared to more than half of them respectively had Poor and good well-being. These findings can be explained



## International Journal of Novel Research in Healthcare and Nursing

Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

that because of the continuation of deteriorated health, negative emotions and may be lack of social and family support all can be grouped together to negatively affect the maintenance hemodialysis patients' self-efficacy and well-being.

The current study findings were in accordance with several studies including that one made by Ricardo et al., 2013 they illustrated, "Emotional, social and economic disruptions to patients receiving dialysis resulted mainly from the financial and physical burden of dialysis can be the main origin for declined self-efficacy, self-scheme and the patients' wellbeing as a whole"<sup>(41)</sup>. Besides, the present study results agreed with Wakasugi et al., 2013 who stated that, "renal failure had a negative impact on the quality of patients' life, affecting their mental health, their physical function, as well as their personal and family life that is frequently can lower their well-being"<sup>(30)</sup>. Additionally, according to Levy 2014 who mentioned that, "the reduced capacity for work leads to intense anxiety and social problems, since work affects positively the psychological status moreover, unemployment is usually associated with physical and psychological problems of patients, such as anxiety, depression, sexual dysfunction and loss of self-efficacy"<sup>(42)</sup>.

Furthermore, the current study findings were affirmed by the results of Theofilou 2011 who revealed, "Physical health and emotional problems affected badly social relationships and routine activities of the participants"<sup>(43)</sup>. Additionally, It should be noted that findings of the present study are consistent with those of Banegas et al., 2015 who showed that, "patients with renal failure and especially old patients, have low levels of well-being and high levels of depression, poor sleep quality and appearance of various psychosocial factors"<sup>(44)</sup>.

**Answering the third research question,** Is there any significant relationship between patients' sociodemographic characteristics and their wellbeing? The existing study findings illustrated that there was statistically high significant correlation for age, education and income as the p values were 0.000 for all, while there was no statistically significant correlation observed regarding sex and residence in relation to maintenance hemodialysis patients' well being index total scores. These results may be attributed to the Egyptian cultural adherent association between age, income, education and the person's wellbeing. In other words and at the same time, the reduced working ability of maintenance hemodialysis patients leads to social and financial changes in patients' lives, with the loss of income and deterioration of their living status that in turn can be a cause for the declined patients' well being.

The results of this study were in accordance with Ritz & Schwenger al., 2015 showed that, "the relationship between the level of academic education and patient's wellbeing is statistically significant. More specifically, people with higher level of academic education have higher level of wellbeing. This is because people with higher level of academic education may have quality in their daily life, good health, good job, good participation in leisure activities and a comfortable standard of living that gives them more satisfaction and wellness"<sup>(38)</sup>. Moreover, the results of the present study were in agreement with those of a previous research study for Sima et al., 2012 mentioned that "Factors associated with a high weighted healthy lifestyle score among hemodialysis patients included sex, age, and higher socioeconomic status"<sup>(26)</sup>. Additionally, it was in line with Francisco et al., 2015 who reported, "Statistical significance was found for age and income among patients on hemodialysis who were adherent to healthy lifestyle factors"<sup>(25)</sup>.

On the other hand, the current study results were contradicting those of Hamed et al., 2017 who demonstrated that, "Regarding the age and sex of the diseased patients, women showed higher scores of wellbeing, compared to men of the same ages. Women of young age experience more intense symptoms of kidney failure compared to men. This may be happen because they are in the process of adjustment to the replacement therapy and relates to the psychological condition of women, the restriction in social activities and their difficulty in accepting their condition"<sup>(18)</sup>. Additionally, Ricardo e al., 2013 reported that, " the higher wellbeing among renal replacement therapy patients were more likely to be in older, women, and high-school graduates"<sup>(41)</sup>.

## 7. CONCLUSIONS

Overall, the current study concluded that maintenance hemodialysis affected negatively patient's lifestyle and well-being.

## 8. RECOMMENDATIONS

It is highly recommended to:

1. Permit frequent health counseling program on the necessity of adherence to healthy lifestyle that demonstrates a holistic approach that incorporates all aspects of a person's lifestyle and behavior, which consequently can have the most impact on promoting patients' comfort, enhancing their well-being and improving life expectancy for maintenance hemodialysis patients.
2. Launch an educational program for nursing staff of dialysis units, maintenance hemodialysis patients' families and caregivers in order to raise their awareness about the necessity of socialization and psychological support for those patients in order to facilitate patients' adaptation to the massive changes in their lifestyle because of the maintenance hemodialysis.
3. Evaluate lifestyle factors separately in future studies with considering differences in lifestyle factors in various patients, further studies should be done comprehensively for hemodialysis patients in comparison with other patients and with healthy people.

## REFERENCES

- [1] Lozano R., Naghavi M., Foreman K., Lim S., Shibuya K., Aboyans V. et al. (2013). Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*; 380 (17): 2095–128.
- [2] Jha V., Garcia G., Iseki K., Li Z., Naicker S., Plattner B. et al. (2013). Chronic kidney disease: global dimension and perspectives. *Lancet*; 382(8):260–72.
- [3] United States Renal Data System. (2015). *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; 2015.
- [4] Afifi A. (2017). Annual Reports of The Egyptian Renal Registry; 2003–20011. *Journal of The Egyptian Society of Nephrology and Transplantation*, 17(4):58–63. Available at: <http://www.esnonline.net>.
- [5] Ghonemy T., Farag S., Soliman S., El-okely A., El-hendy Y. (2016). Epidemiology and risk factors of chronic kidney disease in the El-Sharkia Governorate, Egypt. *Saudi J Kidney Dis Transpl*; 27(1):111–7. [PUBMED] [Full text]
- [6] Pippias M., Stel V., Abad-Diez J., Afentakis N., Herrero-Calvo J., Arias M. et al. (2015). Renal replacement therapy in Europe: a summary of the 2012 ERA-EDTA Registry Annual Report. *Clin Kidney J*; 8(7):248–61.
- [7] Sesso R., Lopes A., Thomé F., Lugon J., Watanabe Y., dos Santos D. (2014). Report of the Brazilian Chronic Dialysis Census 2012. *J Bras Nefrol*; 36:(11)48–53.
- [8] El-Zorkany K. (2017). Maintenance hemodialysis in Menoufia governorate, Egypt: Is there any progress? *Journal of The Egyptian Society of Nephrology and Transplantation*; 17(2):58-63
- [9] Zahran A. (2011). Epidemiology of hemodialysis patients in Menofia governorate, delta region, Egypt. *Menoufia Med J*; 24(6):211–20.
- [10] National Kidney Foundation, 2010. available at <https://www.kidney.org/atoz/content/dialysisinfo>
- [11] Ahmed A., Mohammed F., Allam E., Habil A., Metwally N., Ibrahim et al. (2010). Development of Practice Guidelines for Hemodialysis in Egypt, *Indian J Nephrol*; 20(4): 193–202

**International Journal of Novel Research in Healthcare and Nursing**

 Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [12] Abo Deif H., Elswawi K., Selim M., Mohamed M., Nasr Allah H. (2015). Effect of an Educational Program on Adherence to Therapeutic Regimen among Chronic Kidney Disease Stage5 (CKD5) Patients under Maintenance Hemodialysis: *Journal of Education and Practice*; 6(5):22-28. Available at [www.iiste.org](http://www.iiste.org)
- [13] Gerald M. & Devins L. (2014). Psychosocial Impact of Lifestyle Disruptions in Chronic Life-Threatening Disease, *Advances in Renal Replacement Therapy*; 1(3): 251- 63
- [14] De Francisco A., Fresendo G., Palomar R., Pifiera C., Arias M. (2005). The Renal Benefits of Healthy Lifestyle, *Kidney Int. Supp*; 99(12): 52-6
- [15] Esmaeili N. (2006). Inspection of Lifestyle for Renal Failure Patients Admitted Shahidlavasani Hospital Tehran [MSc. Thesis]. Tabriz: School of Nursing & Midwifery, Tabriz University of Medical Sciences, Persian; 42 (1): 1-10
- [16] Shibaey F. (2004). Study of Lifestyle and Its Relation With Health Related Outcomes In End Stage Renal Disease Patients Referring To Educational And Medical Centers In Tabriz [MSc. Thesis]. Tabriz: School of Nursing & Midwifery, Tabriz University of Medical Sciences, Persian ; 33 (8): 51-63
- [17] Pender N., Murdaugh C., Parsons M. (2006). How much attention hemodialysis patients paid to the recommendations given by healthcare personnel? *Health Promot Nurs Practice*; 30(1):85–6.
- [18] Hamed A., Ali R., Youssef E. and Abd El-Rahim L. (2017). A Study of Quality of Life of Patients on Regular Haemodialysis at Sohag University Hospital. *The Egyptian Journal of Community Medicine*, 35 (2) 13-21
- [19] Ejerblad E. (2005). Lifestyle - related factors and risk of chronic renal failure [MSc Thesis]. Solna: Karolinska University Press Stockholm Sweden.
- [20] Streubert H. & Carpenter, D. (2011). *Qualitative Research in Nursing*. (5th ed.). Philadelphia: Lippincott Williams & Wilkins. p.p. 2143-52
- [21] Fong Leung S. & David G. (2012). The development of a lifestyle instrument for measuring health-related behaviors of Chinese Renal Failure patients in Hong Kong. *The Hong Kong Polytechnic University Journal of Health*; 16(3): 111–5.
- [22] Timothy P. & Daaleman D. (2002). The Spirituality Index of Well-Being: Development and testing of a new measure. *J Fam Pract*; 51(11):1-10
- [23] Economidou G., Zlatanov D., Vaiopoulos X., Hatzidimitriou X. (2015). Depression of patients with chronic renal dialysis. *Dialysis Living*; 14(5): 22-32.
- [24] Gerogianni K. (2013). Stressors of patients undergoing chronic hemodialysis. *Nursing*; 42 (2): 228-46.
- [25] Francisco A., Fresendo G., Palomar R., Pifiera C., Arias M. (2015). The Renal Benefits of Healthy Lifestyle, *Kidney Int. Supp*; 99(6): 52-6
- [26] Sima M., Mohammad H., and Hokmabadi L. (2012). Lifestyle of Hemodialysis Patients in Comparison with Outpatients. *J Caring Sci.*; 1(2): 101–7.
- [27] Kazutoshi F., Fujibayashi N., Hiroshi G., Fukuda M., Hiroshi J., Isonuma L., et al. (2012). Associations between healthy lifestyle behaviors and proteinuria and the estimated glomerular filtration rate (eGFR). *Journal of atherosclerosis and thrombosis*; 365 (9456): 331-40.
- [28] Orth R. and Hallan S. (2018). Chronic Renal Failure and Progression of Cardiovascular Morbidity and Mortality in chronic dialysis Patients- Absence of Evidence or Evidence of Absence? *Clin J Am Soc.Nephrol*; 3(11): 226-36
- [29] Ohta Y., Tsuchihashi T., Kiyohara K. (2017). Relationship between blood pressure control status and lifestyle in hemodialysis outpatients. *Intern Med*; 50(7): 107-12.

**International Journal of Novel Research in Healthcare and Nursing**

 Vol. 6, Issue 1, pp: (523-542), Month: January - April 2019, Available at: [www.noveltyjournals.com](http://www.noveltyjournals.com)

- [30] Wakasugi M., Kazama J., Yamamoto S., Kawamura K., Narita I. (2013). A combination of healthy lifestyle factors is associated with a decreased incidence of chronic kidney disease: a population-based cohort study. *Hypertens Res.*; 36(4):328-33. doi: 10.1038/hr.2012.186. Epub 2012 Nov 22.
- [31] Kaitelidou D., Liaropoulos L., Siskou O., Mamas T., Ziropiannis P., Maniadakis N., et al. (2017). The social and economic consequences of dialysis in patients' lives with chronic renal insufficiency. *Nursing*; 46 (2): 246-55.
- [32] Frisoli T., Schmieder R., Grodzicki T., Messerli F. (2011). Beyond lifestyle modifications and end stage renal disease. *Eur Kidney J*; 32(7): 81-7.
- [33] Creary J.& Drennan J. (2015). Quality of life of patients on haemodialysis for end-stage renal disease. *Journal of Advanced Nursing*; 51 (6): 577-86.
- [34] Moschopoulou E, Savvidaki E. Psychosocial image of patients in chronic dialysis program-Approach - Intervention. *Dialysis Living* 2013; 7: 14-18.
- [35] Spyrou A. (2013). Stress in chronic dialysis patients. Thesis, Available at website: <http://ktisis.cut.ac.cy/handle/10488/769> (10/05/2013).
- [36] Joachim K. (2013). Quality of life of persons with chronic renal failure. Thesis, Available at website: <http://ktisis.cut.ac.cy/jspui/handle/10488/770>
- [37] Brian J., Pereira G., Sayegh H., and Peter B. (2005). *Chronic Kidney Disease, Dialysis, & Transplantation*, 2nd ed., Philadelphia: WB Saunders, p.p.333-49
- [38] RITZ E., & SCHWENGER V. (2015). Lifestyle modification and progressive renal failure: Lifestyle Modifications Improve CKD Patient Outcomes. *National Kidney Foundation's American Journal of Kidney Diseases*; 10(4):387-92
- [39] Erdem Y., Arici M., Altun B., Turgan C., Sindel S., et al. (2010). The relationship between hypertension and salt intake in Turkish hemodialysis patients: SALTURK study. *Blood Press* 19(23): 313-8.
- [40] Kotseva K., Wood D., De Backer G., De Bacquer D., Pyorala K., et al. (2009). EUROASPIRE III: a survey on the lifestyle, among maintenance hemodialysis patients from 22 European countries. *Eur J Renal Prev Rehabil*; 16(9): 121-37.
- [41] Ricardo A., Magdalena M., Yang W., Anderson C., Matthew M., et al. (2013). Adherence to a Healthy Lifestyle and All-Cause Mortality in CKD. *Clin J Am Soc Nephrol*; 8(4): 602-9
- [42] Levy N. (2014). Psychological complications of dialysis. *Bulletin of the Menninger Clinic*; 48 (3): 237-50.
- [43] Theofilou P. (2011). The role of sociodemographic factors in health – related quality of life of patients with end – stage renal disease. *International Journal of Caring Sciences*; 4(1): 40-50. Golper T. (2001). Patient education: can it maximize the success of therapy? *Nephrol Dial Transplant*; 16 (7): 20-4.
- [44] Banegas J., López-García E., Dallongeville J., Guallar E., Halcox J., et al. (2011). Achievement of treatment goals for newly maintenance hemodialysis patients in clinical practice across Europe: the EURIKA study. *Eur Nephrol J*; 32(41): 2143-52.