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Research Article

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Evaluation of Social Support for Patients Undergoing Hemodialysis

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Abstract

Objective: *To evaluate the levels of social support for patients undergoing hemodialysis. Find out the relationship between patient's social support and their demographic characteristics: age, sex, marital status, occupation, economic status, level of education, smoking, and residency.*

Methods: *A descriptive research design was employed, focusing on patients diagnosed with stage five or terminal chronic kidney disease undergoing hemodialysis therapy at centres in Najaf al-Ashraf. The sample consisted of 234 participants, selected through a non-probability purposive sampling method. Data collection occurred from July 17th to November 5th, 2023. The Multidimensional Scale of Perceived Social Support (MSPSS), a commonly used tool for assessing social support, was utilized.*

Result: *The overall social support level for patients undergoing hemodialysis was found to be high, with a cumulative score of 68.93. To investigate the influence of socio-demographic characteristics on perceived social support, a one-way ANOVA was conducted. The analysis indicated that, apart from monthly income, no other demographic characteristic had a statistically significant impact on social support. When comparing income groups (sufficient, somewhat sufficient, and insufficient), a significant difference in perceived social support was observed at the $p < 0.05$ level ($F = 3.07$, $p = 0.04$).*

Conclusion: *The study found high social support levels, with significant differences across income categories. Smoking cessation among hemodialysis patients matched those receiving nursing counseling, highlighting the effectiveness of nursing education.*

Keywords: Social support, Patients, Hemodialysis, Chronic kidney disease

1. Introduction

Kidney failure is one of the non-communicable diseases that comes in three different forms. These include ESKD or ESRF, chronic kidney failure (CKF), and acute kidney failure (AKF) [1]. An abrupt loss of kidney function, known as acute kidney failure (AKF), may be brought on by ischemia, which is the reduction of blood flow to an organ [2]. This may be the consequence of a severe mishap, weakened immunity, or kidney infection [3].

Chronic kidney disease (CKD) is a significant global health problem, affecting millions of individuals worldwide [4]. One of the treatments for ESRD is hemodialysis, which, while life-sustaining, often results in profound changes to an individual's lifestyle and significantly influences their quality of life (QOL) [5]. Despite substantial advancements in dialysis technology, limited improvement has been observed in patients' social support suggesting the need for an exploration into non-medical factors that may influence these patients' lives [6]. Among these, two potential factors are social support. The importance of social support - from family, friends, and health care providers - has been extensively reported to enhance mental and physical health, thus improving QOL [4,7,8].

Social support that a patient can rely on from friends and family during difficult times can provide a more optimistic outlook on life and a broader perspective [9]. Quality of life improves when there is social support from the right people in patients' lives [10].

However, despite these insights, there is a significant gap in research examining the social support of patients undergoing hemodialysis. Therefore, this research aims to address this unfilled gap in the nursing science bulk of knowledge. Understanding the dynamics between supporting patients and health outcomes, may aid in designing comprehensive patient-centered care strategies

and interventions. This approach will help enhance the holistic well-being of patients undergoing hemodialysis.

Future research should delve into the effects of various forms of social support on hemodialysis patients by employing qualitative, interventional, and longitudinal study designs. Policymakers and healthcare professionals must prioritize social support interventions to enhance the outcomes for hemodialysis patients, recognizing this as a critical area for focused work and research.

This research is important because it offers the first examination of social support for hemodialysis patients in Iraq, giving special insights into their experiences in a particular cultural setting. It provides important information on social support in a variety of contexts, which guides the creation of focused support strategies to enhance patient care and establishes the groundwork for further research, therefore. The research question was what are the levels of social support for patients undergoing hemodialysis?

2.1 Research Design

A descriptive research design was chosen for this study due to its effectiveness in evaluating the social support of patients undergoing hemodialysis.

2.2 Population

The population consisted of patients with stage five or terminal chronic kidney disease who were receiving hemodialysis therapy in Najaf al-Ashraf.

2.3 The Setting of the Study

The research was conducted at the hemodialysis centers within AL-Sadder Medical City, Al-Najaf Al-Ashraf Hospital, and Al-Hakeem Teaching Hospital, all situated in AL-Najaf Al-Ashraf, Iraq. These hospitals are the sole facilities with dialysis centres in the Najaf Governorate.

3. Sample & Sampling Procedures

The sample comprised 234 participants through a non-probability purposive sampling procedure. The data collection was carried out from July 17th to November 5th 2023.

According to the study's inclusion/exclusion criteria, a total of 250 patients were eligible for the study, although 9 subjects refused to participate and 7 subjects had not completed their questionnaires, resulting in 234 participants. More detail in a study protocol algorithm. Whereas the response rate was 93%.the response rate was calculated based on the following formula:

$$\text{Survey Response Rate} = \frac{\#\text{ of response to your survey}}{\#of\ people\ you\ send\ the\ survey\ to} \times \mathbf{100}$$

(234/250=0,93×100=93%)

3.1 Minimum Sample Size Calculation

The researcher used the Steven K. Thompson equation to calculate the minimum sample size, as shown in the following formula:

$$n = \frac{N * p(1-p)}{[[N-1*(d^2 \div z^2)] + P(1-P)]} \quad (11)$$

N is the population size, whereas n is the minimal sample size that must be used. Considering that the hemodialysis patients in Al-Najaf al-Ashraf city (N = 494) were recorded during their hospital admission. P is a probability value with a range of 0 to 1; the researcher chose 0.5 as the value. z is a normalized number equal to 1.96, and d is the margin of error (equal to 0.05). The Thompson equation's results showed that a minimum sample size of 217 respondents was necessary.

Parameter for calculating the minimum sample size	Selected Values
N: population size	494
Z: confidence level at (95 %)	1.96
d: Error proportion	0.05
p: Probability	0.5

Table 1: Determination of Minimum Sample Size.

The researcher employed an electronic application to determine the minimum sample size, ensuring the accuracy of the results using the Steven K. Thompson equation. The calculation tool can be accessed via the following link: (Raosoft Sample Size Calculator) http://www.raosoft.com/samplesize.html

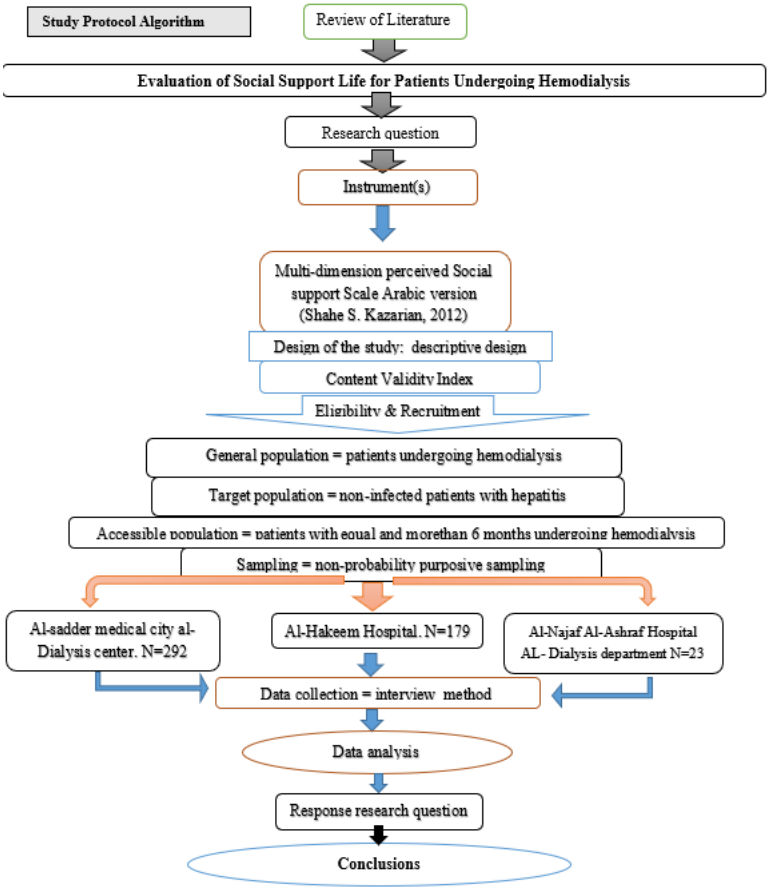
3.2 Inclusion Criteria

1. Patients≥ 18 years of age.
2. Patients seeking hemodialysis therapy in the targeted centres.
3. Patients who have been on hemodialysis for ≥6 months. To ensure a focused and homogenous study sample.

3.3 Exclusion Criteria

1. Patients with sensory-perceptual communication problems.
2. Patients with hepatitis infection Hepatitis C virus and Hepatitis B Virus to maintain homogeneity of the target population

3. Patients who were receiving temporary hemodialysis due to a medical–emergency
4. Dialysis patients complaining of physical symptoms such as dizziness, shortness of breath, nausea, and vomiting, that make it difficult to answer the questionnaire
5. Dialysis patients with psycho-mental disorders, which are confirmed by a commissioned medical authority may affect the validity of their response.



4.Study Instruments

A structured questionnaire was utilized to gather data from participants, comprising three distinct sections:

1. Demographic Information: This section collected data on participants' background characteristics, including age, sex, income level, marital status, economic status, smoking residence and educational attainment.
2. Health Status and Clinical Treatment Details: This part gathered information related to the participant's medical history, current health conditions, and specifics of their hemodialysis treatment, contained six questions, three questions about the ESRD disease. The fourth question asks if the patient has another chronic disease besides ESRD. The fifth and sixth questions were about nursing instructions and other sources of information
3. Social Support Evaluation: This section focused on evaluating the level and sources of social support available to participants, using established scales and metrics for comprehensive analysis. The MSPSS is designed to assess the perceived adequacy of support from three distinct sources: family, friends, and significant others. This tool provides a comprehensive measure of social support by capturing individuals' perceptions of the support they receive from these key sources [14]. The MSPSS was translated into several languages, including Chinese, Hindi, Hebrew, Italian, Turkey, Pakistan, and Uganda [15].

4.1 Validity and Reliability

To assess the validity and reliability of the scale following translation, Merhi and Kazarian in Lebanon translated this scale into Arabic in 2012 using participants from Lebanon, totaling 221 people over the age of 21 [14]. The 12-item Arabic translation of the MSPSS demonstrated a high level of internal consistency (n 221, a = 87), which is similar to the reliabilities of 0.88 when spearmen correlation was used [16].

4.2 Rating and Scoring

A 12-item scale called the MSPSS Arabic version is used to gauge how much social support is experienced. Every item has a rating based on a 7-point Likert scale. On the other hand, a score of 12 with a low sum indicates severe disagreement [1], and high agreement [7]. Simultaneously, the highest total of scores reached

84. The MSPSS's Arabic translation was initially created [15].

4.3 Permission

Dr. Shahi Kazarian, Ph.D., of the American University of Beirut in Lebanon, granted permission for the researcher to utilize the Scale of Social Support in this study, which was translated into Arabic.

4.4 Revalidation Tool

To revalidate and confirm the MSPSS scale's use on the study sample, the researcher submitted the instrument to a group of specialists after confirming its validity and reliability.

4.5 Data Collection

The nurse researcher was trained to do questionnaires, and he used an individual interview method to complete the structured social support questionnaire. The face-to-face interview method takes 15 to 20 minutes to complete the questionnaire.

5.Statistical Analysis

5.1 Normality Testing

Before statistical analysis, the main studied domains (social support) were tested for statistically normal distribution using the Kolmogorov-Smirnov Test. This part is essential before analyzing data to determine which statistical methods are appropriate (parametric or non-parametric statistics). The normality results indicate that the data are normally distributed (Table 2).

Null Hypothesis	Test	Sig.	Decision
The distribution of social support is normal with a mean of 75.4 and a standard deviation of 15.4	One-Sample Kolmogorov-Smirnov	0.201	Retain the null hypothesis.

Table 2: Hypothesis Testing Summary for the Studied Domains (quality of life, Social support, and Spiritual Well-being).

Based on the significant value presented in Table (2), the results of the study indicate that the null hypothesis is retained in the studied domain. Based on these results the study data are normally distributed at a confidence interval (95%). Therefore, parametric statistics are the appropriate statistics used in data analysis in the present study.

Utilizing IBM-Statistical Package for the Social Sciences (IBM-SPSS) version 26 and Microsoft Excel (2019), the study data was analyzed using the following statistical techniques. Two categories of statistics were considered in the analysis:

6. Descriptive Data Analysis

Social support and other general characteristics were examined using frequency, percentage, mean, and standard deviation. Statistical figures were utilized as chart aids in addition to graphic presentations.

6.1 Inferential Data Analysis

1. The demographic information of the patients and the mean differences in their social support were determined using One-way Analysis of Variance (ANOVA).
2. To determine whether there is statistical evidence that patients' social support varies according to their residency and sex, the independent sample t-test examines the mean difference between the two independent samples (sex and residency).

7. Study Limitations

1. A large portion of the study sample consists of patients who do not read and write, which prompted the researcher to choose an interview-based data collection method.
2. The patients undergoing hemodialysis, given the challenges posed by patient fatigue during hemodialysis sessions, which can hinder effective data collection. The researcher altered the sampling schedule to occur either post-hemodialysis session or two hours following its commencement.

8. Result

Demographic Variables	Categories	f	%
Age (years)	Less than 21	14	6
	21- Less than 31	35	15
	31 -Less than 41	47	20
	41 -Less than **51**	**57**	**24.4**
	51 -Less than 61	48	20.5
	61 -Less than 71	25	10.7
	71- and more	8	3.4
	Mean ± SD	44.36 ± 14.53	
	Total	234	100.0

Sex	**Male**	**119**	**50.9**
	Female	115	49.1
	Total	234	100.0
Marital Status	Single	40	17.1
	Married	**177**	**75.6**
	Divorced	5	2.2
	Widowed	12	5.1
	Total	234	100.0
Occupation	Government employee	27	11.5
	Freelancer	61	26.1
	Private employee	17	7.3
	Retired	17	7.3
	Student	10	4.3
	Housewives	**62**	**26.5**
	Unemployed at the current phase	40	17
	Total	234	100.0
Monthly Income	Sufficient	25	10.7
	Somewhat sufficient	**109**	**46.6**
	Insufficient	100	42.7
	Total	234	100.0
Level of education	Do not read & write	45	19.2
	Able to read & write	**75**	**32.1**
	Primary school graduate	40	17.1
	Secondary school graduate	24	10.3
	Preparatory school graduate	17	7.3
	Technical institute graduate	21	9.3
	College graduate	12	4.7
	Total	234	100.0
Residency	**Urban**	**161**	**68.8**
	Rural	73	31.2
	Total	234	100.0

Table 3: Demographic Characteristics of the Study Sample: A Descriptive Distribution.

Table (3) shows, in a descriptive manner, how the study sample was distributed based on the demographics of 234 hemodialysis patients. According to age group, (24.4%) of them are within the age group of (41-51) years. Male percentage was dominant representing (50.9%) compared to females. Regarding marital status, (75.6%) of them were married. Concerning occupation, housewives were the dominant category representing (26.5%). Almost half (46.6 %) of them reported that their monthly income was somewhat sufficient. Concerning the level of education, (32.1%) were able to read and write. Concerning residency, the majority (68.8%) of the sample lived in urban areas.

Clinical data	Categories	f	%
Smoking	Current smoke	22	9.4
	Have never smoked before	**150**	**64.1**
	used to be a smoker	62	26.5
When was the medical diagnosis of end-stage chronic kidney disease made?	**<= 12**	**93**	**39.7**
	13 - 24	54	23.1
	25 - 36	25	10.7
	37 - 48	11	4.7
	49 - 60	20	8.5
	61 - 72	9	3.8
	73 - 84	2	.9
	85 - 96	7	3.0
	97 - 108	3	1.3
	109 and more	10	4.3
For how many Hemodialysis session(s) per week you are scheduled?	**two sessions a week**	**147**	**62.8**
	three sessions a week	87	37.2
How long does a hemodialysis session take?	2 hours	11	4.7
	3 hours	73	31.2
	4 hours	**150**	**64.1**
Do you suffer from other chronic diseases?	**HTN**	**149**	**63.7**
	DM	15	6.4
	HF	32	13.7
	HTN +DM	34	14.5
	HTN+HF	4	1.7
Do nurses give your health counselling sessions during your treatment program aimed at improving your overall health?	**Yes**	**209**	**89.3**
	No	25	10.7
Have you ever educated yourself about chronic kidney disease life?	**Yes**	**192**	**82.1**
	No	42	17.9
	Total	234	100
Diabetes mellitus (DM), hypertension (HTN), and heart failure (HF)			

Table 4: The study sample's descriptive distribution based on its clinical data.

Two hundred and thirty-four patients receiving hemodialysis have their clinical features listed in Table Four. Among the variables under examination, the boldface type indicates the largest percentages. In terms of smoking, (64.1%) of the subjects have never smoked before. Regarding the medical diagnosis of end-stage chronic kidney disease, (39.7%) reported that it was made less or equal to one year f equal importance, more than half (62.8%) of patients had two days a week Hemodialysis sessions per week. Patients were scheduled for a 4-hour hemodialysis session duration reported (64.1 %). In terms of having other chronic diseases

besides end-stage chronic kidney disease, chronic hypertension dominated, representing (63.7%) of the study sample. Of most patients 89.3% reported that nurses give them health counseling sessions during their treatment program aimed at improving their lifestyle. Finally,)82.1% (of the study sample have educated themselves about living with chronic kidney disease.

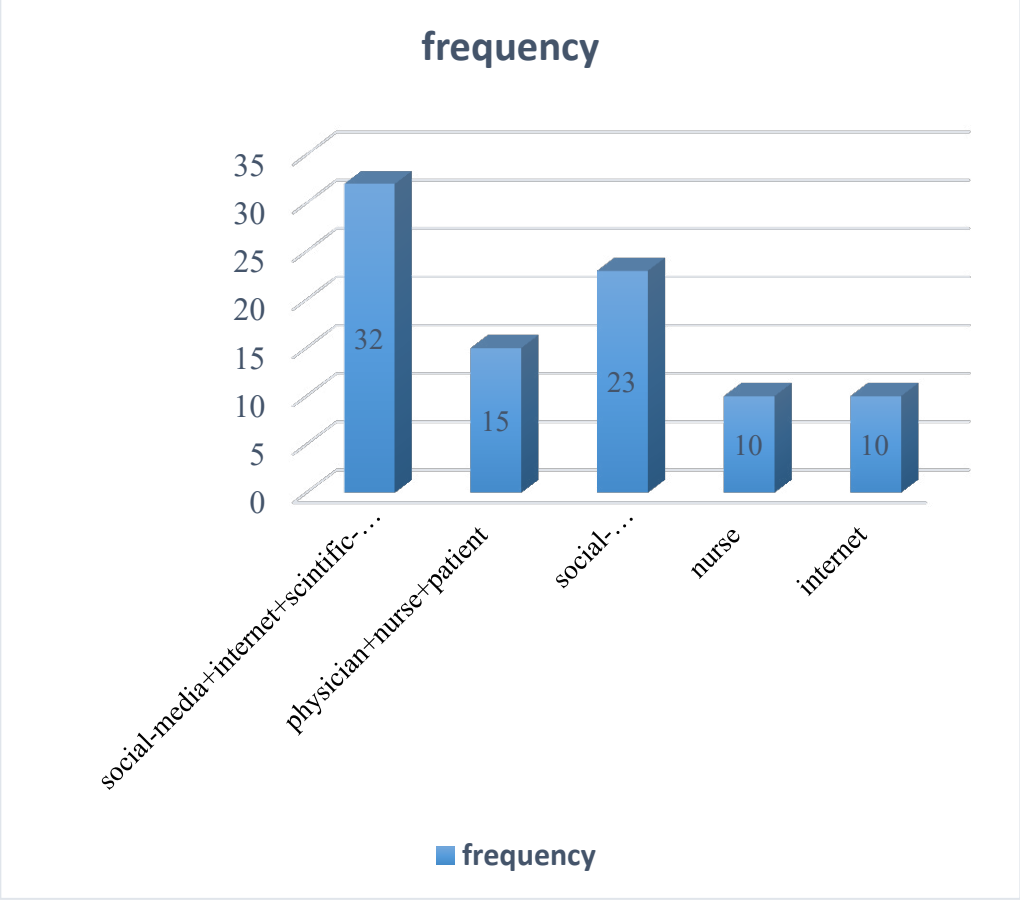


Figure 1: Distribution of the study sample according to main sources of self-learning about chronic kidney disease: the frequency shows that patients had multiple choices of learning sources. The internet, scientific websites, and physicians represented the main high frequencies (32) answers combined from social media, the internet, the scientific web, and physicians.

Social Support Levels	f	%	lean	Overall Evaluation
Low	3	1.3	68.93	**High**
Moderate	27	11.5		
High	**204**	**87.2**		
Total	234	100		

Low at a sum of score (12-36), moderate at a sum of the score (37 – 61), High at a sum of the score (62 – 86), cut-off point=24

Table 5: Overall Descriptive Evaluation of Social Support for Patients Undergoing Hemodialysis.

Table 5 demonstrates that patients receiving hemodialysis had a high overall degree of social support, with a sum score of 68.93.

Demographic data	Social support	Sum of Squares	df	Mean Square	F	Sig.
Age (years)	Between Groups	2210.437	6	368.406	1.574	0.156 NS.

	Within Groups	53142.178	227	234.107		
	Total	55352.615	233			
Marital status	Between Groups	1519.298	3	506.433	2.164	0.093 NS.
	Within Groups	53833.317	230	234.058		
	Total	55352.615	233			
Occupation	Between Groups	790.451	6	131.742	0.548	0.771 NS.
	Within Groups	54562.164	227	240.362		
	Total	55352.615	233			
Monthly income	Between Groups	1434.838	2	717.419	3.074	0.048 **S.**
	Within Groups	53917.778	231	233.410		
	Total	55352.615	233			
Level of education	Between Groups	2752.889	7	393.270	1.690	0.112 NS.
	Within Groups	52599.726	226	232.742		
	Total	55352.615	233			

ANOVA value (F), probability value (p-value), degree of freedom (df), standard deviation (sd), S stands for significant, NS for non-significant.

Table 6: Mean Difference (One-way ANOVA) in Patients' Social Support According to their Demographic Characteristics.

A one-way ANOVA was used in this table (6) to evaluate how sociodemographic traits affected the perception of social support. Except monthly income, which has an impact on social support, it demonstrates that there are no statistically significant variations between demographic factors and social support. Groups based on perceived social support and money (adequate, somewhat sufficient, and insufficient) were compared. For the three groups, there was a significant difference in the types of monthly income at the $p < 0.05$ level ($F = 3.07$, $p = 0.04$).

Demographic Variables	**Category**	**n**	**Mean**	**sd.**	**t**	**df**	**p. value**
Gender	Male	119	75.87	17.49	0.46	232	0.64 **NS.**
	Female	115	74.93	12.97			
Residency	Urban	161	75.79	13.52	0.56	232	0.57 **NS.**
	Rural	73	74.56	19.00			

df: (degree of freedom), sd: (standard deviation), t: independent t-test, p-value: probability value, NS = not significant, S = significant.

Table 7: Mean Difference in Patients' Social Support according to their Sex and Residency.

A two-sample t-test was used in this table (7) to examine the degree of social assistance that men and women received. Males ($M = 75.87$, $SD = 17.49$) and females ($M = 74.93$, $SD = 12.97$) did not significantly differ in terms of social support; $t(232) = 0.46$, $p = 0.64$. Furthermore, social support did not differ statistically significantly between urban areas ($M = 75.79$, $SD = 13.52$) and rural areas ($M = 74.56$, $SD = 19.00$); $t(232) = 0.82$, $p = 0.57$).

Discussion

Ten to thirteen percent of people suffer from chronic kidney disease (CKD), which is quite common [17]. Cardiovascular illness is linked to chronic kidney disease (CKD), which is progressive and irreversible [17, 18]. When the disease is in more advanced stages, patients with it typically do not experience any symptoms and do not acquire the normal problems associated with renal failure [18].

Patients who do not require dialysis typically have a glomerular filtration rate of more than 15 ml/min, therefore a conservative approach to treatment may be taken. Alternate therapies include kidney transplantation, hemodialysis, and peritoneal dialysis [18-20].

Hemodialysis is a life-sustaining medical intervention for individuals with kidney complications, which often leads to a myriad of psychological and social challenges [21]. Critical determinants of the well-being of these patients include support from near social [22]. However, understanding how these factors interact with social demographics is necessary to know the intervening effects between variables. Therefore, this study has become a necessary step in designing effective tailored interventions.

This presents a discussion of the study's findings concerning the research questions and the findings of previously published literature. This study's research questions were: what are the levels of social support for patients undergoing hemodialysis?
The research questions of this study were: In response to the first research question, what are the levels of social support for patients undergoing hemodialysis? The present study found that more than three-quarters (75.41%) of the study participants had a high social support level. A similar result has been reported for assessing perceived social support, religiosity, and quality of life among patients undergoing hemodialysis by Asiri et al., (2023) in Saudi Arabia [8].

In other studies by Alexopoulou et al., (2016); Hassani, Zarea, Gholamzadeh Jofreh, et al., (2022); Mohamed et al., (2023); Alshraifeen et al., (2020), the majority of participants had high levels of social support. It becomes more nuanced and complex when these studies are taken into account, demonstrating the intricate interactions between individual, interpersonal, and contextual elements that shape social support perceptions [4,10,23,24].

In summary, the majority of participants exhibited high levels of social support, which emphasizes the importance of social connections in people's lives and points to possible areas for future research or treatments to preserve and strengthen social support networks.

The study's findings demonstrated, at a p-value of less than 0.05, a significant relationship between patients' social support and monthly income. Hassani, Zarea, Gholamzadeh Jofreh, et al., (2022) found that there was a significant difference between the patients' social support and monthly income [4]. These results are in disagreement with Covarrubias & Vizcaya, (2019) who discovered a noteworthy relationship between the participants' ages and social support [2].

Conclusion

The study sample had a high degree of social support. The level of social support is high among the study sample. There were statistically significant differences between income categories (adequate, somewhat adequate, and insufficient) and perceived social support. Smoking cessation among patients undergoing hemodialysis is proportionately equal to the percentage of patients with nursing counselling sessions, exceeding the proportion of patients who continue to smoke. This shows how beneficial nursing education is when patients receive hemodialysis.

Recommendation

Creating specialized social support programs for hemodialysis patients that take into account their cultural background and local needs is advised to improve patient outcomes. To build stronger support networks, healthcare professionals should be trained to understand the value of social support. Community involvement should also be promoted. Additional investigation is required to examine the enduring consequences of social support and its influence in diverse settings. To improve general well-being and treatment adherence, policies that integrate social support into patient care procedures should be supported by relative patients or other significant people.

Ethical Considerations

The Ethics Committee of Baghdad University College of Nursing granted research ethics confirmation (ethical permission code: 6) for the current study. Throughout the reporting and publishing of the study results, the researchers in this review study remained committed to safeguarding intellectual property while strictly focusing on the scientific objectives of the information they collected.

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Conflicts of Interest

The writers say they have no conflicts of interest to disclose for print. Note that the researchers are the PhD student and the scientific supervisor. This article is taken from the researcher's doctoral dissertation.

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