

Health Promoting Lifestyle Practices among Elderly Patients with Chronic Kidney Disease

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Abstract

Background: Chronic kidney disease (CKD) is a prevalent condition among elderly individuals, and it can significantly impact their quality of life. Health-promoting lifestyle practices can play a crucial role in managing CKD and improving the well-being of elderly patients. **Aim of the study** was to assess health promoting lifestyle practices among elderly patients with chronic kidney disease. **Subjects and Methods: Research design:** A descriptive design was utilized. **Setting:** This study was conducted at inpatient renal ward in Internal Hospital at Zagazig University Hospital. **Subjects:** Purposive sample of 100 elderly patients with chronic kidney disease. **Tool of data collection:** Two tools was used **Tool (I):** A structured interview questionnaire sheet consisted of two parts; Part one: Demographic characteristics of the studied elderly patients, Part two: Health profile of the studied elderly patients. **Tool (II):** Health-Promoting Lifestyle Profile II. **Results** of the current study revealed that (76%)of studied elderly patients not working, (80%) having insufficient income, (64%) of their income is son assistance and (37%) of the studied elderly were illiterate. Regarding medical profile of studied elderly, the result revealed that 68% of the studied elderly have family history of CKD and (67%) have any hemodialysis or peritoneal dialysis. 70% of studied patients had Moderate Level of health promotion lifestyle practices. Finally; there was statistically significant relations between health promotion lifestyle practices of studied patients and their age ($p=0.005$), their sex ($p=0.019$), their educational level($p=0.000$) and their current work($p=0.047$) and there were statistically significant relations between health promotion lifestyle practices of studied patients and their age($p=0.005$), their sex($p=0.019$), their educational level($p=0.000$) and their current work($p=0.047$). **Conclusion:** that most of the studied elderly patients with chronic kidney disease had moderate level of health promoting lifestyle practices. **Recommendations:** Further studies to assess adherence to health promoting lifestyle practices of patients with chronic kidney disease.

Keywords: health promoting, lifestyle, elderly, chronic kidney disease.

Introduction:

Chronic kidney disease (CKD) is common in the elderly with incidence was 260 patients per million populations annually referred to nephrology units for CRF and utilizes up to 2% of the global health expenditure. Approximately 11% of patients older than age 65 years are noted to have CKD ⁽¹⁾.

CKD is characterized by a gradual and progressive loss of renal function resulting in permanent renal failure, increased health-care costs and mortality are associated with older people with CKD, Persons older than

70 years with CKD have double the risk for physical impairment, frailty and cognitive dysfunction⁽²⁾.

Chronic kidney disease CKD defined as a sustained reduction in renal function (glomerular filtration rate (GFR) <60 ml/min/1.73 m² for >3 months) and/or evidence of renal damage (urine albumin to creatinine ratio >30 mg/g for >3 months ⁽³⁾.

Ageing is associated with senescence of tissues. In the kidneys this results in an approximately 50% reduction in functional nephron mass

by the age of 70 when compared to 29–30-year-olds, with decline in glomerular filtration rate (GFR). The structural changes demonstrate typical features such as tubular atrophy, glomerulosclerosis, interstitial fibrosis and arteriosclerosis. In addition to other chronic conditions such as diabetes and hypertension, these result in an increased risk of CKD. The relationship between increasing age and prevalence of CKD is based on an estimated GFR (eGFR) cut-off of 60 ml/min/1.73 m² (4)

CKD leads to frailty through many mechanisms, such as anemia, bone fragility, chronic inflammation, oxidative stress, atherosclerosis, malnutrition, sarcopenia, and even all these factors can also lead to CKD progression. Consequently, CKD in older patients are more likely to reach frailty, and as CKD disease progresses, the prevalence of frailty increases. Therefore, those patients who suffer from CKD and frailty at the same time are at greater risk of falling, showing fractures, getting hospitalized, and they also have more chances of progressing to dialysis and death (5).

CKD is classified based on the GFR and the level of proteinuria where Patients are classified as G1-G5, based on the GFR, and A1-A3 based on the albumin: creatinine ratio (ACR) (6).

Diabetes mellitus (DM), hypertension (HTN), are the leading causes of CKD in all industrialized countries and several underdeveloped countries. However, glomerulonephritis and unknown causes are more common in Asian and Sub-Saharan African countries glomerulonephritis. Other causes include cystic kidney disease, and urologic diseases, including stones (7).

Management of CKD aims at slowing the rate of decline of kidney function and minimizing the effects of other complications. Except for specific management of the underlying kidney disease where possible, the most

effective intervention is control of blood pressure (BP), Control of glycemia for patients with diabetes and CKD, and dietary changes (8).

Health-promoting lifestyle has 6 elements of spiritual growth, health responsibility, interpersonal relationships, stress management, physical activity, and nutrition (9). Regular physical activity, smoking abstinence, and BMI ≥ 25 kg/m² were associated with a range of improved clinical outcomes for patients with CKD (10).

Mediterranean diet has beneficial effect on prevention of CKD progression and cardiovascular complications secondary to CKD (11). Sodium restriction is strongly recommended to control fluid retention, lower blood pressure, and reduce cardiovascular risk (12). Aerobic exercise training will benefit patients with CKD and help them in their maximal oxygen consumption, exercise duration and health quality of life. Exercise training in CKD patients may still have potential benefits (13).

Significance of the study:

Chronic kidney disease (CKD) is a growing global health problem with an estimated prevalence around 35% of those over 70 years (14). While the prevalence of ESRD patients on maintenance HD in the Sharika governorate is 442 per million populations (pmp) (15). Individuals with CKD are at high risk for progressive kidney failure, cardiovascular events, and death. Therefore, there is a compelling need to effectively reduce risk in this population. Adherence to a healthy lifestyle is associated with lower risk of adverse outcomes in the general population (10).

Aim of the Study:

The current study aimed to assess the health-promoting Lifestyle Practices among elderly patients with chronic kidney disease.

Research Question:

What is the health-promoting behaviors among elderly with chronic kidney disease?

Subjects and Methods:

Research design:

A descriptive design was utilized to conduct the present study.

Study setting:

The study was conducted at inpatient renal ward in internal hospital at Zagazig university hospitals, Egypt.

Study subject:

A purposive sample of (100) patients with chronic kidney disease from the above-mentioned setting who fulfilled the following criteria:

Inclusion criteria:

Age: 60 years and older, diagnosed with chronic kidney disease, Free from communication problems (speech and hearing problems) and willing to participate in the study.

Exclusion criteria:

Regular hemodialysis patients with chronic kidney disease and elderly patients diagnosed with mental or psychological diseases.

Tools for data collection:

Two tools will be used to collect the required data they are:

Tool I: A structured interview questionnaire sheet:

It will be developed by the researcher to collect the necessary data for the study. It will consist of two parts: Demographic Data, Health profile.

Part one: Demographic characteristics of the studied elderly patients: This part will be used to assess the demographic characteristics of the studied elderly patients as age, sex, residence, level of education ... etc.

Part two: Health profile of the studied elderly patients: It will include the present history, past history and

family history of the studied elderly patients.

Tool II: Health-Promoting Lifestyle Profile II:

This tool established by Walker et al. (16) and recently used and validated by Zainab et al. (17). The tool will be used to assess elderly health promotion lifestyle practices in six domains of nutrition, physical activity, health responsibilities, stress management, interpersonal relationships, and spiritual growth.

Scoring system:

The total number of questions is forty-one (41) the answers were given a four point Likert scale: never "1", sometimes "2", often "3" and routinely "4". A total health promotion lifestyle practices score was calculated by summing responses over all forty-one (41) items with possible score ranging from forty-one (41) to one hundred sixty-four (164) and the total score of health promotion lifestyle practices was considered poor if (scores 41 -71), moderate if (scores 72 -102), good if (scores 103 - 133) and excellent if (scores 134 -164).

Content Validity and Reliability:

The tools were revised by three experts in the field of nursing administration faculty of nursing, Ain Shams University, community health nursing faculty of nursing, Cairo University and medical surgical nursing faculty of nursing, Zagazig University, where the panel reviewed the tools content for relevance, clarity, comprehensiveness and understandability. All recommended modifications were made.

The reliability of tools was tested by measuring their internal consistency. It demonstrated a good level of reliability with Cronbach's alpha and the result was 0.933 for health promotion lifestyle practices.

Field work:

The study tool questions were answered by each patient privately. The time needed to answer the interview questionnaire ranged from 15 to 25 minutes. The fieldwork was executed over six months (the period extended from the beginning of July 2022 up to the end of December 2022); two days per week (Saturday and Thursday) from 9.00 am to 12.00 pm.

Pilot study:

A pilot study was carried out on a sample of 10 elderly (10% of the calculated sample). The purposes of the pilot study were to test applicability, feasibility, applicability of the study tool and to determine the time needed to fill out the questionnaire sheet. All participants received a clear clarification for the study purpose. Since there was no modification in the data collection tools after conducting the pilot study, the pilot elderly patients weren't included later in the main studied sample.

Administration and Ethical considerations:

The administrative design implemented through submission of a formal letter containing aim of the study from post-graduate department at faculty of nursing Zagazig University to the director of Zagazig University hospitals, which in turn referred it to the manager of Zagazig University hospitals for final approval.

Firstly, the study proposal was approved by the research ethics committee (Rec) and postgraduate committee of the faculty of nursing at Zagazig University. Then, the elderly received a verbal description of the objectives of the study, and non-participation or withdrawal rights at any time without giving any explanations. The elderly was informed that their involvement in this study was voluntary. They were also assured that any information taken from them would be confidential and used only for research purposes.

Statistical analysis:

Data entry and statistical analysis were done using SPSS 22.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and means and standard deviations and medians for quantitative variables. The Cronbach alpha coefficient was calculated to assess the reliability of the developed tools through their internal consistency. Qualitative categorical variables were compared using a chi-square test (χ^2). Whenever the expected values in one or more of the cells in a 2x2 tables was less than 5, fisher exact test was used instead. The spearman rank correlation was used for assessment of the interrelationships among quantitative variables and ranked ones. Statistical significance was considered at p-value <0.05.

Results:

Table (1) revealed that the elderly patient's age ranged between 60 and 79 years, with mean 66.50 ± 4.24 and (72%) of them were aged between 60 and 69 years, with more men (55%), In addition (53%) of the studied elderly patient were married and (92%) of them were living with family. (76%) of the elderly patients not working, having insufficient income (80%) and (64%) of their income is son assistance.

Figure (1) indicates that (53%) of the studied elderly were living in rural areas while (47%) were living in urban areas.

Figure (2) shows that (37%) of the studied elderly were illiterate, followed by university education (30%) then who can read and write (14%).

Table (2) demonstrates that (98%) of studied elderly patients were having chronic disease, the most common diseases were diabetes (77%), hypertension (70%) and osteoporosis (64%). The table also reveals that the mean number of chronic diseases among the elderly patients was (3.39 ± 1.57) . The table also reveals that

(68%) of the studied elderly have family history of CKD and (67%) have any hemodialysis or peritoneal dialysis.

Table (3) demonstrates that (82%) of studied elderly patients having Creatinine ratio (1.0-3.5). while (18%) having creatinine ratio (3.6-7.00).

Table (4) simplifies that (70%) of studied patients had Moderate Level of health promotion lifestyle practices. while (16%) had good Level of health promotion lifestyle practices and (14%) had poor Level of health promotion lifestyle practices.

Table (5) shows statistically significant relations between health promotion lifestyle practices of studied patients and having any hemodialysis or peritoneal dialysis ($p=0.018$), number of diseases ($p=0.000$) and their family history of CKD ($p=0.018$). It can be noticed that the higher percentages of the studied elderly patients who Having hemodialysis or peritoneal dialysis, having number of disease (1-3) and having Family history of CKD were having moderate health promotion lifestyle practices.

Discussion:

Regarding health promotion lifestyle behaviors, the current study revealed that more than two third of studied patient had moderate level of health promotion lifestyle practices while more than one tenth of them had low and good level of health promotion lifestyle practices. This result in disagreement with **Suksatan & Ounprasertsuk**⁽¹⁸⁾ conducted at the rural community in Ubon Ratchathani province, Thailand, revealed that half of studied patient had moderate level of health promoting while one third of them had low level of health promoting lifestyle behaviors.

Regarding physical activity behaviors of studied patients, the current study revealed that physical activity among studied patients was the lowest score among other subscales of health promotion practices. In my opinion, this result attributed to the

mean age of studied patients were 66.50 ± 4.2 years in our study, affecting the physical strength to engage in sports and leisure activities.

Also, the current study revealed that majority of studied patients didn't engage in regular physical activity plan and didn't take part in light to moderate physical activity. This result in agreement with **D'Alessandro et al.**⁽¹⁹⁾ in study conducted in Italy showed that about two thirds of the younger seniors and less than three quarters of the older seniors were sedentary/underactive.

Regarding nutritional aspect of health promotion practices the current study revealed that about half of studied patients sometimes Choose a diet that is low in fat, saturated fat, reducing salt intake, Reducing the use of sugars and sugar-containing food, Eat low protein meals from the meat, poultry, fish, dried beans, eggs and nuts every day. This interpreted as about two third of studied patients had satisfactory knowledge about prevention and diet of chronic kidney disease. In contrary of with the low **Khalil and Abdalrahim**⁽²⁰⁾ in study conducted in Jordan revealed that only one quarter of studied patients had compliance to low salt, low protein diet plan of CKD. This is attributed to participants of this study had low educational level and low knowledge score about score of CKD.

Concerning health promotion lifestyle practices and demographic characteristics of studied patients, the current study revealed that there was statistical correlation between health promotion lifestyle practices and age, gender, educational level, working state, where older patients, male, higher educated patients, and non-working patients had higher health promotion lifestyle practices score than others.

This finding in agreement with **Korkmaz Aslan et al.**⁽²¹⁾ in study conducted in Turkey revealed that there was statistical correlation between educational level and health

promoting lifestyle where with highly educated older adults being more likely to better adhere to health promoting lifestyles practices. These findings might be attributed to the fact that educated people know the importance and benefits of engagement in HPBs, and they have a better access to different health promotion resources. Also, educated people are more aware of the negative consequences of unhealthy lifestyle and practices on their health ⁽²²⁾

Also, **Zheng et al.** ⁽²³⁾ in study conducted in China revealed that there was statistical significant relation between elderly age and health promoting lifestyle practices, where younger elderly had more health promoting lifestyle practices score. In my opinion, this finding attributed to psychological and mental changes that occurs with advancing age and feeling of hopelessness and graving these changes force elderly not to adhere to good lifestyle practices.

Regarding relation between health promotion lifestyle practices and number of chronic diseases the current study revealed that there was statistical significant correlation between health promotion practices and number of diseases where patient with lower number of chronic disease had higher health promoting lifestyle practices. This result consistent with **Rababa et al.** ⁽²⁴⁾ conducted in Jordan revealed that there was positive statistical correlation between health promotion and chronic diseases where older adults having chronic diseases were more likely to have a lower mean score on the total health promoting lifestyle practices.

Moreover, **Haddad et al.** ⁽²⁵⁾ in Jordanian study revealed that older

adults with no coexisting chronic diseases had better self-actualization, stress management skills, and interpersonal relationships and adequate nutrition.

Conclusion:

Based on the findings of the present study, it was concluded that approximately more than two third of studied patients with CKD had moderate level of health promotion lifestyle practices and factors affecting health promoting lifestyle practices of the studied elderly patients were age, gender, educational level, residence, current work, having any hemodialysis or peritoneal dialysis, duration of kidney disease, number of chronic diseases, family history of CKD.

Recommendations:

- Healthcare providers should assess the health-promoting lifestyle practices of elderly patients with chronic kidney disease and provide education and counseling to improve their adherence to healthy lifestyle behaviors.
- Family members of elderly patients with chronic kidney disease should be educated on the importance of supporting and encouraging healthy lifestyle practices to improve the health outcomes of their loved ones.
- Health policymakers should implement programs and policies that promote healthy lifestyle practices among elderly patients with chronic kidney disease, such as providing financial incentives for physical activity and healthy food choices.

Table (1): demographic characteristics of participants in the study sample (n=100)

Demographic characteristics	Frequency	Percent
Age:		
60-69	72	72.0
70-79	28	28.0
Mean±SD	66.50 ± 4.24	
Rang	(60 – 79)	
Sex:		
Male	55	55.0
Female	45	45.0
Marital status:		
Married	53	53.0
Un married	47	47.0
Job (before retirement):		
Free work	16	16.0
Farmer	17	17.0
Employee	9	9.0
Tradesman	29	29.0
Housewife	29	29.0
Current work:		
Working	24	24.0
Not Working	76	76.0
With whom you live:		
With family	92	92.0
Alone	8	8.0
Income:		
Insufficient:	80	80.0
Sufficient	20	20.0
Source of income:		
Pension	32	32.0
Son assistance	64	64.0
Still working	20	20.0
Property income	12	12.0

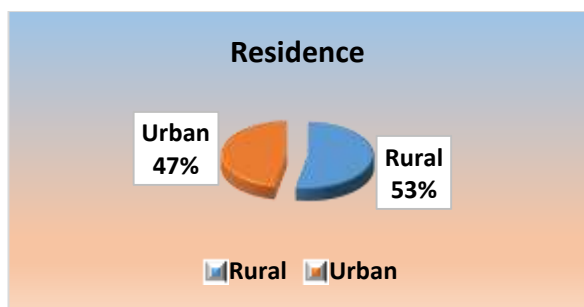


Figure 1: Distribution of participants according to their residence (n=100)

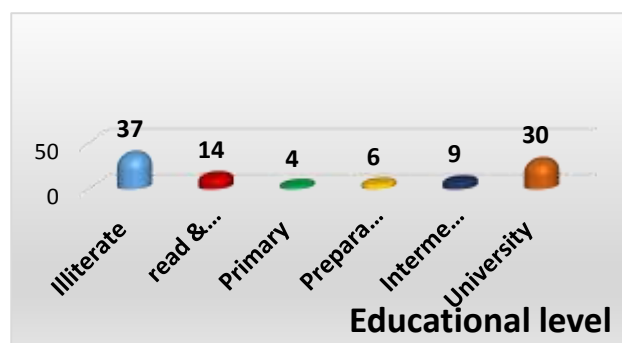


Figure (2): Educational level distribution among participants (n=100)

Table (2): Medical history of participants in the study sample (n=100)

Medical History	Frequency	Percent
Having any hemodialysis or peritoneal dialysis:		
Yes	67	67.0
No	33	33.0
Having any other chronic disease than kidney disease:		
Yes	98	98.0
No	2	2.0
Diseases:		
Diabetes	77	77.0
Hypertension	70	70.0
Heart	7	7.0
Liver	35	35.0
Chest	11	11.0
GIT	44	44.0
Osteoporosis	64	64.0
Anemia	31	31.0
No. of diseases: n=98		
1-3	53	53.0
4-7	45	45.0
Range		0-7
Mean±SD		3.39±1.57
Family history of CKD:		
Yes	32	32.0
No	68	68.0

Table (3): Medical history of participants in the study sample (n=100)

Medical history	frequency	percent
Creatinine ratio/mg		
1.0-3.5	82	82.0
3.6-7.00	18	18.0
Range		1-7
Mean ± SD	2.89 ± .80	2.89±.80

Table (4): Total level of health promotion lifestyle practices among studied participants (n=100)

Level of health promotion lifestyle practices	Frequency	Percent
Poor (scores 41 -71)	14	14.0
Moderate (scores 72 -102)	70	70.0
Good (scores 103 - 133)	16	16.0
Excellent (scores 134 -164)	0	0.0
Mean ± SD.	87.88 ±14.17	
Rang	59 - 123	

Table (5): Relation between participants' health promotion lifestyle practices and their demographic characteristics

Demographic characteristics	Total health promotion lifestyle practices						X ² test	p-value
	Poor (n=14)		Moderate (n=70)		Good (n=16)			
	No.	%	No.	%	No.	%		
Age:								
60-69	5	6.9	54	75.0	13	18.1		
70-79	9	32.1	16	57.1	3	10.7	10.74	.005*
Sex:								
Male	3	5.5	41	74.5	11	20.0	7.96	.019*
Female	11	24.4	29	64.4	5	11.1		
Residence:								
Rural	11	20.8	36	67.9	6	11.3	5.29	.071
Urban	3	6.4	34	72.3	10	21.3		
Marital status:								
Married	7	13.2	38	71.7	8	15.1	.155	.925
Un married	7	14.9	32	68.1	8	17.0		
Education:								
Illiterate	13	35.1	23	62.2	1	2.7		
Read/write	1	7.1	11	78.6	2	14.3		
Primary	0	0.0	4	100.0	0	0.0	38.43	.000*
Preparatory	0	0.0	6	100.0	0	0.0		
Intermediate	0	0.0	8	88.9	1	11.1		
University	0	0.0	18	60.0	12	40.0		
Current work:								
Working	0	0.0	18	75.0	6	25.0		
Not Working	14	18.4	52	68.4	10	13.2	6.13	.047*
With whom you live:								
With family	14	15.2	63	68.5	15	16.3	1.67	.435
Alone	0	0.0	7	87.5	1	12.5		
Income:								
Insufficient:	12	15.0	58	72.5	10	12.5	3.70	.157
Sufficient	2	10.0	12	60.0	6	30.0		

(*) Statistically significant at p<0.05

Table (6): Relation between participants' health promotion lifestyle practices and their medical history

Medical history	Total health promotion lifestyle practices						X ² test	p-value
	Poor (n=14)		Moderate (n=70)		Good (n=16)			
	No.	%	No.	%	No.	%		
History of kidney disease / diagnosis:								
< 1 year – 2 years	0	0.0	8	72.7	3	27.3		
3 years – 8 years	11	13.6	57	70.4	13	16.0	6.94	.139
9 years – 14 years	3	37.5	5	62.5	0	0.0		
Having any hemodialysis or peritoneal dialysis:								
Yes	9	13.4	52	77.6	6	9.0	8.03	.018*
No	5	15.2	18	54.5	10	30.3		
Creatinine ratio \ mg								
1.0-3.5	11	13.4	59	72.0	12	14.6	.890	.641
3.6-7.00	3	16.7	11	61.1	4	22.2		
Having any other chronic disease than kidney disease:								
Yes	14	14.3	69	70.4	15	15.3	1.88	.391
No	0	0.0	1	50.0	1	50.0		
No. of diseases: n=98								
1-3	1	1.9	39	73.6	13	24.5		
4-7	13	28.9	30	66.7	2	4.4	20.85	.000*
Family history of CKD:								
Yes	0	0.0	25	78.1	7	21.9	8.05	.018*
No	14	20.6	45	66.2	9	13.2		

(*) Statistically significant at $p < 0.05$

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