ORIGINAL RESERCH

50. Healthcare Access Dimensions among ESRD Patients on Dialysis in Northern Sudan during Wartime 2024

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Background: Patients with end-stage renal disease (ESRD) undergoing hemodialysis are among the most vulnerable groups in low-income and conflict-affected settings. Adequate access to healthcare is crucial for maintaining treatment continuity, preventing complications, and supporting nutritional health in this population. This study assesses healthcare access and its determinants among end-stage renal disease (ESRD) patients on hemodialysis in Northern Sudan and examines the relationship between access and malnutrition.

Methods: This cross-sectional study involved secondary data analysis from 137 ESRD patients in four dialysis centers in Northern Sudan using cluster sampling. Healthcare access was measured using a structured questionnaire based on the modified Penchansky and Thomas model. Nutritional status was assessed using the Subjective Global Assessment (SGA). Descriptive statistics, bivariate analysis, and logistic regression were used to identify determinants and predictors of healthcare access using the Statistical Package for Social Science (SPSS) v21. Statistical significance was set at p-value < 0.05.

Results: Overall, all patients showed moderate to high levels of healthcare access (mean index: 3.87 ± 0.51). Affordability scored the lowest among access dimensions. Higher income and age were significant predictors of better access (AOR=9.99 and AOR=3.87, respectively; p<0.05), while gender, displacement, and health insurance showed no significant contribution. Malnourished patients showed significantly lower scores on the affordability and awareness domains (p-value < 0.05).

Conclusion: While patients in Northern Sudan had moderate to high access to healthcare, affordability was the most prominent barrier, being more prominent in malnourished patients, besides the low awareness. We recommend socioeconomic support, facilitating healthcare access for vulnerable patients, and nutritional educational programs.

Table 1. Baseline characteristics and healthcare access and use of the ESRD on Haemodialysis in Northern Sudan. N=141

Sociodemographic and clinical characteristics of the Patients		N (%)
Treating Centre	Karima Teaching Hospital	54 (38.3)
	Algolid Dialysis Centre	44 (31.2)
	Argo Dialysis Centre	24 (17.0)
	Wadi Halfa Dialysis Centre	19 (13.5)
Age	< 45	44 (31.2)
	45-65	66 (46.8)
	>= 65	31 (22.0)
	M(Sd)	52 (14.5)
Gender	Male	96 (68.1)
	Female	45 (31.9)
Marital Status	Single	22 (15.6)
	Married	105 (74.5)
	Divorced or widowed	13 (9.2)
	Missing	1 (0.7)
Education	Illiterate	12 (8.5)
	Primary	49 (34.8)
	Secondary	48 (34.0)
	University or higher	31 (22.0)
	Missing	1 (0.7)
Occupation	Retired or non-working	111 (78.7)
	Free worker	19 (13.5)
	Formal Employee	10 (7.1)
	Missing	1 (0.7)
Income/ Month in SDG	Less than 150K	80 (56.7)
	150-300	41 (29.1)
	Above 300K	18 (12.8)
	Missing	2 (1.4)
Displacements	Yes	70 (50.0)
	No	70 (50.0)
	Missing	1 (0.7)
Household	Own house	48 (34.0)
	Rented house	11 (7.8)
	Relative/extended family	78 (55.3)
	IDP camp	3 (2.1)
	Missing	1 (0.7)
Residence	Rural	89 (63.1)
	Urban	47 (33.3)
	Missing	5 (3.5)
	No	12 (8.5)
	Missing	1 (0.7)
Haemodialysis Duration	Less than 2 years	39 (27.7)
	2-5 years	44 (31.2)
	More than 5 years	58 (41.1)
	Mean (SD)	4.6 (4.7)
Health care access	Low Level	0 (0)
	Moderate Level	54 (38.3)
	High Level	83 (58.9)
	Missing	4 (2.8)
	Mean Access Index (SD)	3.9 (0.5)
Health Insurance	SHI	99 (70.2)
	Private	6 (4.3)
	Non	34 (24.1)
	Missing	1 (0.7)
Outpatient Healthcare service contacts (6-months)	Non	73 (51.8)
	1-2	39 (27.7)
	3 or more	15 (10.6)
	Missing	4 (2.8)
Where do you head when you feel sick?	PHC centres	12 (8.5)
	Traditional healer	12 (8.5)
	ER /GP in a 2ndary facility	89 (63.1)
	Specialized care	23 (16.3)
Travel time to facility	Less than 30 mins	73 (51.8)
	30 mins – 1 hr	49 (34.7)
	More than 1 hr	19 (13.5)