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Lessons from the Profile of Kidney Diseases Among Afghan Refugees

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Background: Due to a paucity of research on the profile of kidney diseases among refugee populations, specifically Afghan refugees in Iran, this study aimed to illustrate the pattern of kidney disease among Afghan refugees in Iran and create a database for evaluating the performance of future health services.





Material/Methods: This was a retrospective cross sectional study, in which we collected the demographics and profile of kidney diseases among Afghan refugees between 2005 and 2010 from referrals to the United Nations High Commissioner for Refugees (UNHCR) offices in Iran.

Results: The total number of referrals in this group of diseases was 3193 out of 23 152 with 41.5% female and 58.5% male. Regarding age distribution, 10.5% were 0–14 years of age, 78% were 15–59, and 11.5% were ≥60. The most common health referral for females and males (0–14) was end-stage renal disease (ESRD), accounting for 34.6%. This was also the main reason of referrals for females and males aged 15–59, accounting for 73.5% and 66.6%, respectively, and in both sexes in the ≥60 age range it was 63.1%.

Conclusions: The pattern of our renal clinic referrals may gradually change to ESRD, which is associated with a huge economic burden. The need to provide health insurance to everyone or reform the health care system to provide coverage for more of the population can be justified and would improve cost effectiveness.

MeSH Keywords: **Delivery of Health Care • Kidney Failure, Chronic • Medically Uninsured • Refugees**

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Background

Years of conflict have inflicted near fatal wounds upon the healthcare infrastructure throughout Afghanistan. According to the Ministry of Public Health (2009), the country has suffered a devastating decline during the past 3 decades, with human and socio-economic indicators hovering near the bottom of international indices [1]. For nearly 3 decades, the neighboring countries of Iran and Pakistan have hosted millions of Afghans. Afghans today in fact represent the largest group of refugees in the world [2]. According to the United Nations High Commissioner for Refugees (UNHCR), refugees are “persons who are outside their country and cannot return owing to a well-founded fear of persecution because of their race, religion, nationality, political opinion, or membership of a particular social group” [3]. The Afghan situation in Iran is characterized by: a) protracted exile, b) large numbers (1 019 700 Afghan refugees as of July 2011), c) residence in urban areas, d) the emergence of second and third generations, and e) a significant social support system provided by the host country [3–5]. These factors have dramatically shifted the healthcare system for this population.

There is a paucity of data on the profile of kidney diseases, specifically on the rate of end-stage renal diseases (ESRD), in Afghan refugees in exile. Major discrepancies in ESRD rates in different population subgroups within the same country make estimating the number of refugees with ESRD extremely difficult [6]. Some studies have reported low birth weight [7], low socioeconomic status [8], anemia [9], hyperlipidemia [9,10], high blood pressure [9,10], poorly controlled diabetes [9,11], poor access to health care, and poverty [12] as the risk factors for progressive chronic kidney disease. Not only is the prevalence of these risk factors, in conjunction with other non-studied factors like chemicals and environmental hazards, significantly higher among refugees, but many refugees are afflicted with several of these simultaneously. The cumulative effect of these risk factors has not been thoroughly studied. Meanwhile, poor screening and health facilities make early detection, control, and estimation of predisposing factors, like hypertension, hyperlipidemia, and diabetes mellitus, almost impossible.

Previous studies were limited in scope in regards to sampling, or in areas of coverage. One clinic for Afghan refugees in Pakistan reported that most referrals were for gastrointestinal tract disorders, followed by respiratory tract complaints [13]. One research project in northern Pakistan focused on the prevalence and etiology of visual loss and eye diseases in a resident Afghan refugee community [14]. A number of other studies have addressed tuberculosis (TB) and the mental health problems of Afghan refugees in Iran [15–22], Pakistan [23,24], the United States [25–28], and the Netherlands [29,30]. The scarcity of health data is also a challenge in Afghanistan.

According to the Afghan Ministry of Public Health (2011), minimal data exists on the current health status of the population and on resource allocations in the health care sector [31]. The World Health Organization (WHO) has stated that Afghanistan is a country where there is limited knowledge on most causes of mortality and morbidity [32]. Due to a paucity of research on the profile of kidney diseases among refugee populations, specifically Afghan refugees in Iran, this study aimed to illustrate patterns of kidney diseases among Afghan refugees in Iran, and to use these data as an index for evaluating the performance of future health services.

Material and Methods

This was a retrospective, cross-sectional study that utilized data from the UNHCR offices in Tehran and Mashhad. The data covers approximately 85% of Afghan refugees registered in Iran. Data extracted for this study (3193 referrals) are based on a sample of 23 167 registered Afghan refugees who referred to us during a 6-year period from 2005 to 2010. The data were collected by 2 teams (each team included at least 3 professional social workers and interviewers, 1 physician, and 1 general-purpose receptionist) based in the UNHCR offices with an extended area of responsibility to the central, northern, and eastern parts of Iran.

Individual patients approached UNHCR offices for assistance, or were referred by hospitals, welfare and charity societies, and by governmental and non-governmental organizations. Requests for assistance were screened and processed by the community and medical service teams through interviews in homes and hospitals, as well as through community visits. A report was recorded in the Community Integrated Social and Medical Assistance Program (CISAMAP) database by the interviewer with each patient having been previously consented. Records include all accepted and rejected cases for assistance and are based on a list of different kidney diseases as referral causes to ensure reliable data entry. Medical assessment was performed by the CISAMAP physician. SPSS (version 18) was used for data analysis initially; tables and graphs were prepared in Microsoft Word 2010.

Results

The total number of cases was 23 152 (52.5% females and 47.5% males). The third most frequent (11%) type of referral was for kidney diseases, with females constituting 41.5% of the cases and males 58.5%. Among this referral group, 10.5% were 0–14 years of age (55.8% males and 44.2% females), 78% were 15–59 (57.4% males and 42.6% females), and 11.5% were ≥60 (68.3% males and 31.7% females). The most common

cause of kidney disease in males and females within the 0–14 age group was ESRD (34.6%). Similarly, in the 15–59 year age group the most common cause of referrals for both females and males was ESRD at (73.5% and 66.6%, respectively), and for both females and males in the ≥ 60 age group the most common cause for referrals was ESRD (63.1%). The largest ethnic group of Afghan refugees in this referral group was Hazara (55.8%), followed by Tajik (14.4%), Fars (9.2%), Sadat (8.5%), Pashtun (2.3%), Uzbek (1.1%), and “other” (9.7%). ESRD was the major cause of referrals for Hazara, Tajik, Fars, and Sadat groups (68.1%, 66.4%, 38.8%, and 71.1%, respectively).

The reason for referrals among the different age groups (Table 1) included: ESRD (34.6%), nephrotic syndrome (21.6%), and calculus of kidney and ureter (9.6%), making up 63.6% of referrals for the 0–14 years age group. For the 15–59 years age group, ESRD, calculus of kidney and ureter, nephrotic syndrome, and acute renal failure (ARF) were the most common reason for referrals, accounting for a total of 92.4% (70.6%, 13.9%, 5.2%, and 2.7%, respectively). ESRD, calculus of kidney and ureter, and ARF constituted 81.4% of referrals for the age group ≥ 60 (0.8%, 12%, and 6.3%, respectively). The reason of referrals for kidney disease in males and females (Table 1) included: ESRD (68.4% and 62.5%, respectively), calculus of kidney and ureter (12.3% and 14.6%, respectively), nephrotic syndrome (5.5% and 6.4%, respectively), and acute renal failure (2.8% and 3.8%, respectively).

The reason of referrals for kidney disease among the different ethnicities (Table 2) included: the Hazara receiving the highest number of referrals (55.8%), followed by Tajik at 14.4%, Fars at 9.2%, Sadat at 8.5%, Pashtun at 2.3%, and Uzbek 1.1%. Chronic renal failure (CRF) was the major cause of referrals with Hazara, Tajik, Fars, and Sadat groups (68.1%, 66.4%, 38.8%, and 71.1%, respectively).

Discussion

The tremendous uncertainty that surrounds the health status of millions of refugees in exile underscores the need for health referral data for this population. There is, however, a paucity of data on the profile of kidney diseases, especially the rate of ESRD in Afghan refugees in exile. Major discrepancies in ESRD rates in different population subgroups in the same country make an estimate about the number of refugees with ESRD extremely difficult [6]. To our knowledge this is the first study that has observed the pattern of renal disease in this refugee population. ESRD was the most common cause of referrals and clinic visits. This is in contrast to the referral pattern for kidney diseases seen in developed countries, which have more stage 2 and 3 CKD referrals [33]. Several studies have demonstrated that early intervention can delay the progression of renal disease, be cost effective, and provide a better prognostic outcome [33,34].

The refugee populations are commonly uninsured, cannot afford the cost of medical visits or medications, and do not have access to regular medical checkups. A similar pattern occurs with uninsured U.S. citizens [35,36]. The results of this study can be used as a warning sign, because if the numbers of the uninsured people increase, the pattern of renal clinic referrals will gradually change to solely ESRD, which is associated with higher economic burden.

The prevalence of ESRD is measured as the number of patients per million population of that country (PMP), and this number for Iran and Afghanistan was 360 and 1441, respectively [37–39]. Although in every country there are many contributing factors to explain these discrepancies, the most common reasons may be the feasibility of access to health care system, health insurance coverage, and medical expenses/income ratio. In our study, only 10% of referrals were seen among the 0–14 age group, with ESRD as the most common cause of referrals. It seems that better health status along with greater access to health services in Iran can reduce the number of referrals for refugees in this age group compared to other age groups, or even in the similar population in Afghanistan. However, because medical costs are higher for refugees compared with citizens in Iran, limitations may eventually restrict access.

In our study, those 15–59 years of age had the most referrals, perhaps because this age group represents the bulk of the workforce in the diaspora, and the impact of these diseases (especially ESRD) is clear. Referrals in this group were higher for males. This can be attributed to the role of men as the head of the household, as well as to the documented reluctance of women to seek medical care due to the high cost [40]. Also, ESRD has a M: F overall ratio of 1.3: 1 in worldwide [41].

Chronic predisposing conditions such as hypertension, diabetes mellitus, and hyperlipidemia are risk factors for kidney diseases [9–11] and are more prevalent among elderly populations, including refugees [42,43], but the reduced number of elderly refugees, as well as chronic cases in our population, may be attributed to factors such as language barriers and incorrect interpretation and translations [44], cultural and structural barriers [45], and the lack of access to preventive care and treatment [46].

Although the largest ethnic group of Afghan refugees in this referral group with ESRD was Hazara, the number of referrals for smaller groups such as Pashtun and Baluch may not be truly representative because the overall distribution pattern of Afghan groups in neighboring countries is different.

With the communist takeover of 1978, Afghan migration has been heterogeneous in regards to race and religion. History, culture, and religious differences have had a significant impact

Table 1. Renal and urinary diagnoses by age and gender distribution.

Renal and urinary diagnoses		0-14			15-59			≥60			Total
		Male	Female	All	Male	Female	All	Male	Female	All	
Acute glomerulonephritis	n	8	11	19	17	29	46	5	2	7	72
	%	4.3	7.4	5.7	1.2	2.7	1.8	2.0	1.7	1.9	2.3
Acute renal failure	Count	9	4	13	31	36	67	13	10	23	103
	%	4.8	2.7	3.9	2.2	3.4	2.7	5.2	8.6	6.3	3.2
Calculus of kidney and ureter	n	16	16	32	191	156	347	23	21	44	423
	%	8.6	10.8	9.6	13.3	14.7	13.9	9.2	18.1	12.0	13.2
Calculus of lower urinary tract	n	5	4	9	19	14	33	8	3	11	53
	%	2.7	2.7	2.7	1.3	1.3	1.3	3.2	2.6	3.0	1.7
Chronic glomerulonephritis	n	2	4	6	5	11	16	158	73	231	22
	%	1.1	2.7	1.8	0.3	1.0	0.6	63.2	62.9	63.1	0.7
End stage renal disease	n	67	49	116	1053	706	1759	3	0	3	2106
	%	35.8	33.1	34.6	73.5	66.6	70.6	1.2	0	0.8	66.0
Cystitis	n	3	2	5	1	8	9	1	0	1	17
	%	1.6	1.4	1.5	0.1	0.8	0.4	0.4	0	0.3	0.5
Hydronephrosis	n	4	5	9	2	4	6	1	1	2	16
	%	2.1	3.4	2.7	0.1	0.4	0.2	0.4	0.9	0.5	0.5
Infections of kidney	n	2	8	10	3	5	8	2	1	3	20
	%	1.1	5.4	3.0	0.2	0.5	0.3	0.8	0.9	0.8	0.6
Nephritis and Nephropathy	n	9	5	14	14	9	23	10	1	11	40
	%	4.8	3.4	4.2	1.0	0.8	0.9	4.0	0.9	3.0	1.3
Nephrotic syndrome	n	33	32	65	61	68	129	2	0	2	205
	%	17.6	14.6	21.6	4.3	6.4	5.2	0.8	0	0.5	6.4
other diseases of urinary system	n	0	1	1	3	1	4	11	1	12	7
	%	0	0.7	0.3	0.2	0.1	0.2	4.4	0.9	3.3	0.2
Prostatectomy	n	0	0	0	7	0	7	8	0	8	20
	%	0	0	0	0.5	0	0.3	3.2	0	2.5	0.6
Urethral stricture	n	7	4	11	17	3	20	2	1	3	40
	%	3.7	2.7	3.3	1.2	.3	.8	.8	.9	.8	1.3
Urethritis	n	3	2	5	17	3	20	3	1	4	11
	%	1.6	1.4	1.5	1.2	0.3	.8	1.2	0.9	1.1	0.3
Urothoplasty	n	19	1	20	7	7	14	5	2	7	38
	%	10.2	0.7	6.0	0.5	0.7	.6	2.0	1.7	1.9	1.2
Total	n	187	148	335	1432	1060	2492	250	116	366	3193
	%	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100	100.0

Table 2. Renal and urinary diagnoses by ethnicity distribution.

Renal and urinary Dx by ethnicity distribution		Arab	Baloch	Fars	Hazara	Kurd	Others	Pashtun	Sadat	Tajik	Turkmen	Uzbek	Total
Acute glomerulonephritis	Count	1	0	16	35	0	5	1	2	12	0	0	72
	% within diagnoses	1.40	0.00	22.20	48.60	0.00	6.90	1.40	2.80	16.70	0.00	0.00	100.00
	% within ethnicity	3.20	0.00	5.40	2.00	0.00	2.20	1.40	0.70	2.60	0.00	0.00	2.30
Acute renal failure	Count	3	0	10	62	0	2	0	9	17	0	0	103
	% within diagnoses	2.90	0.00	9.70	60.20	0.00	1.90	0.00	8.70	16.50	0.00	0.00	100.00
	% within ethnicity	9.70	0.00	3.40	3.50	0.00	0.90	0.00	3.30	3.70	0.00	0.00	3.20
Calculus of kidney and ureter	Count	2	2	102	197	0	18	9	35	57	1	0	423
	% within diagnoses	0.50	0.50	24.10	46.60	0.00	4.30	2.10	8.30	13.50	0.20	0.00	100.00
	% within ethnicity	6.50	22.20	34.70	11.10	0.00	8.00	12.20	13.00	12.40	100.00	0.00	13.20
Calculus of lower urinary tract	Count	0	0	8	26	0	2	3	4	10	0	0	53
	% within diagnoses	0.00	0.00	15.10	49.10	0.00	3.80	5.70	7.50	18.90	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	2.70	1.50	0.00	0.90	4.10	1.50	2.20	0.00	0.00	1.70
Chronic glomerulonephritis	Count	0	0	4	12	0	1	0	2	3	0	0	22
	% within diagnoses	0.00	0.00	18.20	54.50	0.00	4.50	0.00	9.10	13.60	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	1.40	0.70	0.00	0.40	0.00	0.70	0.70	0.00	0.00	0.70
End stage renal disease (dialysis)	Count	22	6	114	1213	8	160	52	192	306	0	33	2106
	% within diagnoses	1.00	0.30	5.40	57.60	0.40	7.60	2.50	9.10	14.50	0.00	1.60	100.00
	% within ethnicity	71.00	66.70	38.80	68.10	80.00	70.80	70.30	71.10	66.40	0.00	94.30	66.00
Cystitis	Count	0	0	3	9	0	0	0	1	4	0	0	17
	% within diagnoses	0.00	0.00	17.60	52.90	0.00	0.00	0.00	5.90	23.50	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	1.00	0.50	0.00	0.00	0.00	0.40	0.90	0.00	0.00	0.50
Hydronephrosis	Count	0	0	3	8	0	1	0	0	4	0	0	16
	% within diagnoses	0.00	0.00	18.80	50.00	0.00	6.30	0.00	0.00	25.00	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	1.00	0.40	0.00	0.40	0.00	0.00	0.90	0.00	0.00	0.50
Infections of kidney	Count	1	1	2	14	0	1	1	0	0	0	0	20
	% within diagnoses	5.00	5.00	10.00	70.00	0.00	5.00	5.00	0.00	0.00	0.00	0.00	100.00
	% within ethnicity	3.20	11.10	0.70	0.80	0.00	0.40	1.40	0.00	0.00	0.00	0.00	0.60

Table 2 continued. Renal and urinary diagnoses by ethnicity distribution.

Renal and urinary Dx by ethnicity distribution		Arab	Baloch	Fars	Hazara	Kurd	Others	Pashtun	Sadat	Tajik	Turkmen	Uzbek	Total
Nephritis and Nephropathy	Count	0	0	3	22	0	7	1	3	4	0	0	40
	% within diagnoses	0.00	0.00	7.50	55.00	0.00	17.50	2.50	7.50	10.00	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	1.00	1.20	0.00	3.10	1.40	1.10	0.90	0.00	0.00	1.30
Nephrotic syndrome	Count	2	0	11	117	2	24	7	11	29	0	2	205
	% within diagnoses	1.00	0.00	5.40	57.10	1.00	11.70	3.40	5.40	14.10	0.00	1.00	100.00
	% within ethnicity	6.50	0.00	3.70	6.60	20.00	10.60	9.50	4.10	6.30	0.00	5.70	6.40
Other diseases of urinary system	Count	0	0	0	6	0	0	0	0	1	0	0	7
	% within diagnoses	0.00	0.00	0.00	85.70	0.00	0.00	0.00	0.00	14.30	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	0.00	0.30	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.20
Prostatectomy	Count	0	0	0	12	0	1	0	2	5	0	0	20
	% within diagnoses	0.00	0.00	0.00	60.00	0.00	5.00	0.00	10.00	25.00	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	0.00	0.70	0.00	0.40	0.00	0.70	1.10	0.00	0.00	0.60
Urethral stricture	Count	0	0	6	31	0	1	0	0	2	0	0	40
	% within diagnoses	0.00	0.00	15.00	77.50	0.00	2.50	0.00	0.00	5.00	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	2.00	1.70	0.00	0.40	0.00	0.00	0.40	0.00	0.00	1.30
Urethritis	Count	0	0	1	4	0	2	0	1	3	0	0	11
	% within diagnoses	0.00	0.00	9.10	36.40	0.00	18.20	0.00	9.10	27.30	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	0.30	0.20	0.00	0.90	0.00	0.40	0.70	0.00	0.00	0.30
Urothoplasty	Count	0	0	11	14	0	1	0	8	4	0	0	38
	% within diagnoses	0.00	0.00	28.90	36.80	0.00	2.60	0.00	21.10	10.50	0.00	0.00	100.00
	% within ethnicity	0.00	0.00	3.70	0.80	0.00	0.40	0.00	3.00	0.90	0.00	0.00	1.20
Total	Count	31	9	294	1782	10	226	74	270	461	1	35	3193
	% within diagnoses	1.00	0.30	9.20	55.80	0.30	7.10	2.30	8.50	14.40	0.00	1.10	100.00
	% within ethnicity	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

on where Afghans have settled. Pashtuns have more often migrated to Pakistan because of ethnic, linguistic, and religious similarities. Nearly 40 million Pakistanis in the region bordering

Afghanistan are of Pashtun origin, speak Pashtun, and are Sunni Muslims, similar to their Afghan refugee counterparts. Hazara are mostly Shiite, speak Farsi, and live mainly in the northern

and northeastern regions of Afghanistan. This religious and linguistic proximity draws them disproportionately to Iran (55% of all refugees are Pashtun and 40.47% are Hazara) [47]. This may explain their over-representation in this mostly Iranian-based sample. More studies are needed to better identify renal conditions and other conditions among the refugee population to better serve this vulnerable group of people.

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Conclusions

Although the data were collected based on observational and retrospective studies, it cannot be denied that patients in this situation need advanced medical attention due to the more complex stage of their disease. This can have a serious impact on the overall healthcare budget. The necessity of providing health insurance or healthcare reform to cover more of the population could be justified and more cost effective in the long-term.