

Supplementary File

Disparities in health and access to health care between asylum seekers and residents in Germany: a population-based cross-sectional feasibility study

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Supplementary notes to methods

i) Development of the questionnaire

The concern of this study was to use a questionnaire which is based on the European Health Core Indicators and includes items on health status and access to health care services whilst being in a simple and concise form to be self-completed by asylum seekers. According to a literature review, common measures to assess health status or health care provision are either not tested for validity in refugee populations or are not designed as a self-completion questionnaire [1].

The questionnaire applied in this study comprised questions of European and German health surveys (EU-SILC 2012, German Health Interview and Examination Survey for Adults (DEGS1)[2]) and basic socio-demographic information. Permission to use the items in the questionnaire was obtained. A draft version of the questionnaire was reviewed and modified by professionals who are working with refugees.

ii) Translation process

After obtaining information on the principal languages of our study population from the local Welfare Agencies, a German version of the questionnaire was translated into six languages: English, Arabic, French, Persian, Serbian, and Russian.

We used established versions of translated items where such existed. Items which had not yet been translated to the respective languages were translated by two independent certified translators for each language. Discrepancies in translations were resolved by consensus between the two translators.

Supplementary results

Table S.1: Additional sociodemographic data of the asylum-seeker population (N=156)

		Male	Female	Gender not specified	Total	Missings per item
		Freq. (col%)				Freq. (% of N)
Sociodemographic data						
Marital status	Single	61 (61.6)	12 (35.3)	0 (0)	73 (53.7)	
	Married	30 (30.3)	16 (47.1)	3 (100)	49 (36)	
	Divorced	6 (6.1)	2 (5.9)	0 (0)	8 (5.9)	
	Widowed	0 (0)	4 (11.8)	0 (0)	4 (2.9)	
	Other	2 (2)	0 (0)	0 (0)	2 (1.5)	
	N (%)	99 (100)	34 (100)	3 (100)	136 (100)	20 (12.8)

Freq.: Absolute frequencies. col%.: Column percent

Table S.2: Self-reported frequencies of health care utilization

		Male	Female	Gender not specified	Total	Missings per item
		Freq. (col%)				Freq. (% of N)
Number of visits to health services						
Physicians (in- and outpatient)	Mean (SD)	8.3 (25.8)	11.3 (20.5)	9 (11)	9.1 (23.5)	
	N	79	29	11	119	0 (0.0)
General practitioner	Mean (SD)	3.7 (3.6)	5.3 (5.7)	3.2 (1.8)	4.1 (4.2)	
	N	45	19	6	70	28 (17.9)
Specialist	Mean (SD)	2.1 (1.3)	4.8 (6.4)	11 (12.7)	3.8 (5.2)	
	N	14	9	2	25	10 (6.4)
Psychotherapist	Mean (SD)	7.9 (10.5)	16 (23.3)	4 (-)	9.5 (13.7)	
	N	13	4	1	18	6 (3.8)
Hospital	Mean (SD)	16.1 (37.9)	10.9 (17.2)	9 (13.4)	13.6 (30.1)	
	N	22	11	6	39	0 (0.0)

Freq.: Absolute frequency. col%: column percent. SD: standard deviation.

Table S.3: Cross-tabulation of self-reported health status between asylum seekers and the resident population in Germany by age and sex

		Self-reported general health status: "Very good" or "good"		Self-reported general health status: "Fair", "bad", "very bad"		Self-reported chronic disease		Limitations		
		Yes	No	Yes	No	Yes	No	Yes	No	
Total	German ^a	45340	23951	23951	45340	24647	42146	22515	42382	
	AS	78	71	71	78	57	86	70	67	
Gender	Male	German ^a	22671	11166	11166	22671	11939	20770	10551	21913
		AS	49	49	49	49	35	57	44	46
	Female	German ^a	22646	12739	12739	22646	12713	21371	11984	21774
		AS	20	14	14	20	17	15	15	18
Age	18-24	German ^a	5438	511	511	5438	703	5109	553	5206
		AS	18	9	9	18	12	14	9	16
	25-49	German ^a	21598	5978	5978	21598	6288	20245	5387	21019
		AS	35	43	43	35	28	44	37	36
	50-64	German ^a	9842	7411	7411	9842	7389	9183	6820	9693
		AS	1	0	0	1	2	3	4	2

Figures are absolute frequencies. AS: asylum seekers.^a General population in Germany as a reference group. Source of data for the general population in Germany: Eurostat, EU Statistics on Income and Living Conditions 2012

Table S.4: Cross-tabulation of self- reported utilization of health services between asylum seekers and the resident population in Germany by age and sex

			Consulted a physician (in- or outpatient)		Consulted a general practitioner		Consulted psychotherapist		Admitted to hospital		
			Yes	No	Yes	No	Yes	No	Yes	No	
Total	German		7543	241	6179	1603	335	7447	998	6741	
	AS		119	37	98	58	24	131	39	115	
Gender	Male	German	3515	177	2830	860	118	3572	455	3218	
		AS	79	29	65	36	16	85	22	78	
	Female	German	4031	61	3355	737	217	3875	541	3525	
		AS	29	6	24	11	6	29	11	23	
Age in years	18-29	German	1005	40	816	229	42	1003	105	934	
		AS	44	18	35	27	14	48	18	43	
	30-39	German	953	35	752	236	60	928	93	889	
		AS	25	3	22	6	3	25	6	22	
	40-49	German	1442	58	1175	324	70	1429	134	1357	
		AS	17	0	13	4	3	14	4	12	
	50-59	German	1494	57	1228	323	76	1475	207	1335	
		AS	5	0	4	1	0	5	0	5	
	60-69	German	1471	27	1243	254	46	1451	292	1197	
		AS	3	0	3	0	0	3	1	2	
	Self-reported health status	Good	German	5993	211	4757	1445	186	6016	567	5601
			AS	52	26	43	35	6	71	15	61
Bad		German	1547	33	1379	201	130	1450	377	1194	
		AS	62	9	51	20	16	55	22	49	

Figures are absolute frequencies. All data provided in this table relate to the previous 12 months in Germany. AS: Asylum seekers

^a General population in Germany as a reference group. Source of data for the general population in Germany: German Health Interview and Examination Survey for Adults (DEGS1)

^b Source of data for the general population in Germany: Eurostat, EU Statistics on Income and Living Conditions 2012

Table S.5: Description of participation and non-response by county

	County 1	County 2	County 3
	Freq. (col%) of AS		
Registered (Total)	350 (100)	358 (100)	309 (100)
Direct refusal of participation ^a	41 (11.7)	33 (9.2)	78 (25.2)
Non-response ^b	79 (22.6)	146 (40.8)	81 (26.2)
Participation in survey	61 (17.4)	41 (11.5)	54 (17.5)
Not encountered	169 (48.3)	138 (38.5)	96 (31.1)

Figures are absolute frequencies and column percents of asylum seekers. ^a Reasons for refusal are listed in table S.6. ^b Asylum seekers who never sent back the questionnaire without specifying reasons.

Table S.6: Reasons for Non-response

Reason of Non-Response	Freq. (col%)
Language barriers	68 (44.4)
No interest	35 (22.9)
Other reason	23 (15)
Reason not specified	16 (10.5)
No time	11 (7.2)
Total	153 (100)

Table S.7: Comparison of participating asylum seekers and non-responders

		Responder	Non-Responder	Chi2	p-Value	
		Freq. (col%)				
Gender	Male	101 (64.7)	108 (70.6)	0.37	0.542	
	Female	35 (22.4)	44 (28.8)			
	Not specified	20 (12.8)	0 (0)			
Place of residence	County 1	61 (39.1)	42 (27.5)	8.705	0.0128	
	County 2	41 (26.3)	33 (21.6)			
	County 3	54 (34.6)	78 (51)			
	N (%)	156 (100)	153 (100)			
Language	Arabic	15 (9.6)	5 (3.3)	18.903	0.004	
	German	33 (21.2)	28 (18.3)			
	English	48 (30.8)	9 (5.9)			
	French	5 (3.2)	0 (0)			
	Persian	24 (15.4)	5 (3.3)			
	Russian	8 (5.1)	2 (1.3)			
	Serbian	23 (14.7)	13 (8.5)			
	Other	0 (0)	91 (59.5)			
	N (%)	156 (100)	153 (100)			

Table S.8: Self- reported health status and health care utilization of asylum- seekers by county

		County 1	County 2	County 3
Socio-demographic data		Freq. (col%)		
Gender	Male	31 (63.3)	29 (76.3)	41 (83.7)
	Female	18 (36.7)	9 (23.7)	8 (16.3)
	N (%)	49 (100.0)	38 (100.0)	49 (100.0)
Self-reported health status				
General state of health	Very bad	2 (3.4)	1 (2.5)	1 (2.0)
	Bad	10 (17.2)	12 (30.0)	7 (13.7)
	Fair	15 (25.9)	8 (20.0)	15 (29.4)
	Good	17 (29.3)	10 (25.0)	19 (37.3)
	Very good	14 (24.1)	9 (22.5)	9 (22.5)
	N (%)	58 (100)	40 (100)	51 (100.0)
Chronic morbidity	Yes	29 (51.8)	15 (40.5)	15 (30.0)
	N (%)	56 (100.0)	37 (100.0)	50 (100.0)
Long-term activity limitations	Not limited	22 (44.0)	18 (48.6)	27 (54.0)
	Limited	13 (26.0)	16 (43.2)	15 (30.0)
	Strongly limited	15 (30.0)	3 (8.1)	8 (16.0)
	N (%)	50 (100.0)	37 (100.0)	50 (100.0)
Self-reported use of health care services				
At least one visit to a physician (outpatient or inpatient) during the past 12 months	Yes	44 (72.1)	27 (65.9)	38 (70.4)
	N (%)	61 (100.0)	41 (100.0)	54 (100.0)
At least one visit to a general practitioner during the past 12 months	Yes	33 (54.1)	27 (65.9)	38 (70.4)
	N (%)	61 (100.0)	41 (100.0)	54 (100.0)
At least one visit to a psychotherapist during the past 12 months	Yes	8 (42076)	2 (42251)	14 (42272)
	N (%)	60 (100.0)	41 (100.0)	54 (100.0)
At least one admission to a hospital during the past 12 months	Yes	11 (18.6)	11 (26.8)	17 (31.5)
	N (%)	59 (100.0)	41 (100.0)	54 (100.0)
Experienced unmet medical need during the past 12 month	Yes	26 (47.3)	17 (45.9)	20 (37.7)
	N (%)	55 (100.0)	37 (100.0)	53 (100.0)

1. Hollifield, M.M.D., et al., *Measuring Trauma and Health Status in Refugees: A Critical Review*. JAMA, 2002. **288**(5): p. 611-621.
2. Rattay, P., et al., *[Utilization of outpatient and inpatient health services in Germany: results of the German Health Interview and Examination Survey for Adults (DEGS1)]*. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz, 2013. **56**(5-6): p. 832-44.