

A peer-reviewed version of this preprint was published in PeerJ on 11 November 2014.

[View the peer-reviewed version](https://peerj.com/articles/670) (peerj.com/articles/670), which is the preferred citable publication unless you specifically need to cite this preprint.

Aziz IA, Hutchinson CV, Maltby J. 2014. Quality of life of Syrian refugees living in camps in the Kurdistan Region of Iraq. PeerJ 2:e670
<https://doi.org/10.7717/peerj.670>

Quality of life of Syrian refugees living in camps in the Kurdistan Region of Iraq

The current study explores the perceived quality of life of Syrian refugees who have entered the Kurdistan Region of Iraq. Two hundred and seventy participants residing in refugee camps in the Erbil region in Kurdistan completed the WHOQOL-BREF, which measures quality of life (QoL) within four domains; physical, psychological, social relationships and environment. Syrian refugees in Kurdistan scored significantly lower for general population norms on physical health, psychological and environment QoL, and score significantly lower for physical health and psychological QoL for refugees in the Gaza strip. However, respondents in the current sample scored significantly higher on environment QoL to refugees in the Gaza strip, and significantly higher on all the QoL domains than those reported for refugees in West Africa. Finally, Syrian refugees in Kurdistan scored significantly higher than general population norms for environment-related QoL. The current findings provide the first report of QoL domain scores among Syrian refugees, and position the QoL scores among this sample, for the most part, within the range mean scores for QoL domains of other samples, and may, for environment-related QoL, be higher than for other refugee samples.

3 Quality of life of Syrian refugees living in camps in the Kurdistan Region of Iraq.

4 Aziz, A. Izaddin

5 University of Leicester, Leicester, United Kingdom.

6 Claire V. Hutchinson

7 University of Leicester, Leicester, United Kingdom.

8 and

9 John Maltby

10 University of Leicester, Leicester, United Kingdom.

11 Acknowledgements: The research was supported by study leave provided by the
12 University of Leicester to John Maltby and Claire Hutchinson.

13 Correspondence concerning this article should be addressed to John Maltby, College of
14 Medicine, Biological Sciences and Psychology, University of Leicester, UK, LE1 9HN. Email,
15 jm148@le.ac.uk.

16

Abstract

17 The current study explores the perceived quality of life of Syrian refugees who have entered the
18 Kurdistan Region of Iraq. Two hundred and seventy participants residing in refugee camps in the
19 Erbil region in Kurdistan completed the WHOQOL-BREF, which measures quality of life (QoL)
20 within four domains; physical, psychological, social relationships and environment. Syrian
21 refugees in Kurdistan scored significantly lower for general population norms on physical health,
22 psychological and environment QoL, and score significantly lower for physical health and
23 psychological QOL for refugees in the Gaza strip. However, respondents in the current sample
24 scored significantly higher on environment QoL to refugees in the Gaza strip, and significantly
25 higher on all the QoL domains than those reported for refugees in West Africa. Finally, Syrian
26 refugees in Kurdistan scored significantly higher than general population norms for environment-
27 related QoL. The current findings provide the first report of QoL domain scores among Syrian
28 refugees, and position the QoL scores among this sample, for the most part, within the range
29 mean scores for QoL domains of other samples, and may, for environment-related QoL, be higher
30 than for other refugee samples.

31 KEY WORDS: Quality of Life, Refugees, Psychological, Physical, Environment, Social

32

Introduction

33 The war in Syria has led to the worst humanitarian crisis of the 21st century. According to United
34 Nations Refugee Agency figures, over 2.5 million people have fled the Syrian conflict, entering
35 as refugees neighboring countries of Turkey, Egypt, Lebanon, Jordan and Iraq. The United
36 Nations Refugee Agency (UNHCR) recorded that by the end of July 2012, 9,503 Syrians had
37 registered as refugees in Iraq who have left Syria for a number of political, economic and social
38 reasons. By the end of February 2013, this number had increased over 10-fold to 102,447
39 (UNHCR, 2013). By February 2014, the figure stood at 225,548 (UNHCR, 2014a) and continues
40 to increase. As of 5th March 2014, 226,934 people had registered as refugees in Iraq. The
41 majority (around 97 %) are registered in the Kurdistan Region in Northern Iraq, in and around the
42 cities of Duhok, Erbil and Suleimaniyah where there are 109,979, 84,881 and 25,134 registered
43 refugees, respectively (UNHCR, 2014b). Around 60 % of Syrian refugees are hosted within
44 communities across Kurdistan and the remaining 40% live in refugee camps (UNHCR, 2014a).
45 When Syrian refugees first began arriving in 2012, most registered in the Directorate of Duhok,
46 near the Peshkhabour border with Syria. This led to the opening of the Domiz camp on 01 April
47 2012. It remains the largest permanent camp with a population of 58,500, as of 28 February 2014.
48 In 2013, as the number of refugees seeking asylum increased, a further four permanent camps
49 were opened in the Directorate of Erbil: Kawergosk (15 August 2013), Qushtapa (19 August
50 2013), Basirma (26 August 2013) and Darashakran (29 Sept 2013), with a combined population
51 of 28,208, as of 28th February 2014 (United Nations Refugee Agency Information Management
52 Unit, 2014).

53 International Aid Agencies are working in collaboration with The Kurdistan Regional
54 Government (KRG) to provide shelter, food, water, healthcare, education and employment for
55 Syrian refugees (UNHCR, 2014c). However, given the sheer numbers of people in need, it is an
56 extremely, and increasingly, difficult situation to manage. Attending, for example, to the complex

57 healthcare needs of such a large population represents a major challenge. The UN Refugee
58 Agency records information from refugees about their physical health complaints and clinical
59 mental health problems at the point of registration but this is almost impossible to monitor on a
60 follow-up basis, given the many challenges and constraints posed by the current crisis. As a
61 result, many psychological issues facing those who live in refugee camps are very unlikely to be
62 addressed or detected.

63 Despite the profound effect of war and forced migration on people's living conditions,
64 surprisingly little attention has been given to the psychological impact of being a refugee. Studies
65 that have investigated this issue have found that the prevalence of psychological illness is
66 relatively high in refugee groups (Gerritsen, et al., 2006). Research suggests that poor perceived
67 *present* quality of life (QoL) may be the most significant factor in psychological illness in refugee
68 populations (Akinyemi, Owoaje, Ige, & Popoola, 2012; Carlsson, Olsen, & Mortensen, 2006;
69 Fazel, Wheeler, & Danesh, 2005; Matanov, et al., 2013; Tang & Fox, 2001). These findings
70 support the World Health Organization's position concerning the importance of subjective quality
71 of life as a measure of how an individual perceives "their position in life in the context of the
72 culture and value systems in which they live and in relation to their goals, expectations, standards
73 and concerns" (p.1, World Health Organization, 1997).

74 At present, there is, at least to our knowledge, no data concerning the known perceived
75 QoL of Syrian refugees who have entered the Kurdistan Region of Iraq. These are important
76 issues that, given the sheer scale of the Syrian refugee crisis, have fundamental implications for
77 the future health and well-being of a large number of people. In the present study, we report on
78 the World Health Organization Quality of Life Assessment (WHOQOL-Bref) scores among
79 Syrian refugees living in refugee camps in The Directorate of Erbil, Iraqi-Kurdistan. To provide
80 context to our findings we compare WHOQOL-Bref scores among the current sample to other
81 reports of WHOQOL-Bref scores among other refugee reports.

82

Method

83 *Sample*

84 Two hundred and seventy refugees (135 males, 135 females), aged 18 to 60 ($M = 29.26$ years, SD
85 $= 9.7$) from Syria, residing in refugee camps located in Kurdistan took part in the study. The
86 sample used in this study was residing in the Erbil Governorate camps located on four sites:
87 Qushtpa, Kawrgosk, Basirma and Darashakran in January 2014. Thirty forms were distributed in
88 each camp, with equal numbers of respondents sought from each gender. Of these respondents,
89 the most dominant demographic statistics were that 42.6% reported having completed secondary
90 education (with the next highest frequency being that 31.5% had achieved a tertiary level of
91 education) and that 58.1% reported being married.

92 *Measures*

93 The WHOQOL-BREF is the short 26-item form of the larger WHOQOL-100 assessment (The
94 WHOQOL Group, 1995) that yields four QoL domains: physical health (7 items; e.g. "How much
95 do you need medical treatment to function in your daily life?"), psychological QoL (6 items; e.g.
96 "To what extent do you feel life to be meaningful?"), social QoL (3 items; e.g. "How satisfied are
97 you with your personal relationships?"), and environmental QoL (8 items; e.g. "How safe do you
98 feel in your daily life?"). Responses are scored via five-point response scales with various anchor
99 statements (e.g. from 1 [*Very dissatisfied*] or [*Very poor*] to 5 [*Very satisfied*] or [*Very good*]).
100 The WHOQOL-BREF can be scored in three ways; through raw scores and two transformation
101 methods; the first that creates domain scores within the range of 4-20, and the second that creates
102 domain scores within the range of 0-100.

103 The WHOQOL-BREF's psychometric properties have been analyzed using cross-
104 sectional data from 11,830 adults from 23 countries (Sevington, Lofty, & O'Connell, 2004) and is
105 a valid assessment across cultures and socioeconomic status (Hawthorne, Herrman, & Murphy,
106 2006; Sevington, et al., 2004). Syrian refugees tend to speak the Kurdish language, but have

107 different dialects from the Iraqi Kurdish. However, they are also able to speak the Arabic
108 language. Therefore they were given the Arabic version of the *World Health Organization*
109 *Quality of Life Scale - Brief* (WHOQOL-BREF) (Sevington, et al., 2004; WHOQOL group,
110 1998). The reliability and validity of Arabic versions of the WHOQOL-BREF have been
111 demonstrated among large Arabic-speaking samples (Ohaeri & Awadalla, 2009). On this
112 occasion, we removed one of the social relationships QoL items ("How satisfied are you with
113 your sex life?") due to concerns over the respondents' potential sensitivity to the question.
114 According to the WHOQOL-BREF manual the transformational methods for scoring of the scale
115 allows for missing items.

116 *Ethics*

117 The study received ethical approval from the University's School Ethics Board whose ethical
118 procedures conform to those of the British Psychological Society
119 (http://www.bps.org.uk/sites/default/files/documents/code_of_human_research_ethics.pdf). The
120 Ethics Reference for the Ethics Board was jm148-851fa. All participants were 18 years of age or
121 over and provided free and informed consent to take part in the study. Formal procedures and
122 permission to visit the camps were given by the General Director of Academic Missions and
123 Cultural Relations and the Democracy and Human Rights Research Institute.

124 **Results**

125 We found three reported non-clinical based samples that provided enough information to allow
126 statistical mean score comparisons between the current sample and these samples. The first
127 sample was the overall norm data from 11,830 adults from 23 countries (Sevington,et al., 2004).
128 The other two samples comprised samples from refugee populations residing in West Africa
129 (Akinyemi, et al., 2012) and the Gaza Strip (Eljed, Mikolajczyk, Kramer, & Laaser, 2006).

130 - Insert Table 1 about here -

131 Table 1 shows a set of mean comparisons between Syrian refugees in Kurdistan and
132 overall norm data for the WHOQOL-BREF. This comparison uses transformed domain scores
133 within a range 4–20. As our sample data has a missing item, we recomputed the mean/SD score
134 for social relationships QOL for the general population norm data using the frequency responses
135 that have been provided for these two social relationship items (Sevington, et al., 2004). In this
136 table, we also provide effect sizes for the comparisons computed for unequal sample sizes, for
137 which $d \geq .8$ represents a large effect size, $.5 \leq d < .8$ represents a moderate effect size, and $.2 \leq$
138 $d < .5$ represents a small effect size (Cohen, 1988). In terms of the comparison with the norm
139 data, the refugees residing in Kurdistan scored significantly lower on physical health, psychology
140 and environment QoL, but significantly higher on social relationships QoL. In terms of effect size
141 the differences, the differences for physical health and psychological QOL are of a large effect
142 size, the differences for the environment QoL are of a moderate effect size, but the difference
143 reported for social relationships QOL does not even meet the criteria of a small effect size.

144 - Insert Table 2 about here -

145 Table 2 shows the comparison with the first of the two refugee samples, refugees resident
146 in West Africa (Akinyemi, et al., 2012). For this sample, mean scores were presented as raw
147 scores. Therefore, we have presented mean scores for the Syrian refugees in accordance with this.
148 Across all domains of the QoL scale, the refugees residing in Kurdistan scored significantly
149 higher than those reported in West Africa, with these differences ranging from a moderate effect
150 size (social relationships QoL) to a large effect size (physical health, psychological and
151 environment QoL).

152 - Insert Table 3 about here -

153 Table 3 shows a comparison with a second refugee sample, resident in the Gaza Strip
154 (Eljed, et al. 2006). For this study, mean scores were presented as transformed domain scores
155 with a range 0–100. Therefore, we have presented the mean scores for the Syrian refugees in

156 accordance with this. For the physical and psychological domains, the refugees residing in
157 Kurdistan scored significantly lower than for those refugees in the Gaza Strip, with these
158 differences being of a large effect size. For the environment QoL domain refugees residing in
159 Kurdistan scored higher than for those refugees in the Gaza Strip with this different being of a
160 moderate effect size. No significant difference was found between Syrian refugees in Kurdistan
161 and refugees residing in the Gaza strip for social relationships QoL.

162 **Discussion**

163 The current findings outline the QoL among Syrian refugees in Kurdistan. For the physical,
164 psychological and environment domains of QoL, Syrian refugees score significantly lower (to a
165 large effect size) that population norms for these domains. This is, for the most part, what would
166 be expected, with the exception being that Syrian refugees in Kurdistan score significantly higher
167 than population norms for the social relationships domain. However, the effect size of this finding
168 is negligible as its magnitude is less than small ($d = .2$) and therefore any statistical significant
169 difference can be attributed to sample size. There may be some concern about the omission of
170 one of the items from the scale, but given that the WHOQOL-BREF allows for the omission of
171 items, and we have made a comparable alteration to the population mean scores, the current
172 findings suggest that social relationships QoL compare favorably to reported population means.
173 In terms of other refugee samples, the current findings principally locate the means within the
174 mean scores located for other refugee samples. Syrian refugees scoring significantly lower (to a
175 large effect size) for two of four domains (physical and psychological) than refugees in the Gaza
176 strip, significantly higher (to a moderate effect size) for the environment domain than refugees in
177 the Gaza strip and significantly higher (from a moderate to large effect size) on all the QoL
178 domains than those reported for refugees in West Africa.

179 Seeking any exacting social or policy analysis in these comparisons is mostly redundant
180 to the immeasurable variance in the nations, context and time periods considered. However, the

181 study contributes new knowledge by reassuring us that the positioning of the means for Syrian
182 refugees, given the nature and scale of conflict, the scores among the other sample largely falls
183 within, if not above in terms of environmental QoL, those QoL scores reported for other refugee
184 samples. Moreover, there is some equivalence in terms of social relationships QoL against
185 general populations, though this comes with the caveat that this may be a function of the number
186 of questions asked, and therefore needs careful consideration before extrapolating from this
187 finding. Notwithstanding, our current data suggests that for a large number of Syrian refugees in
188 Kurdistan QoL, though below that of general population of norms, QoL does not largely fall
189 outside the levels of QoL reported for other refugee samples, and may, for environment-related
190 QoL, be higher than reported in other refugee samples.

191

References

- 192 Akinyemi, O.O., Owoaje, E.T., Ige, O.K., & Popoola, O.A. (2012) Comparative study of mental
193 health and quality of life in long term refugees and host populations in Oru-ljebu,
194 Southwest Nigeria. *BMC Research Notes*, 5, 394. doi: 10.1186/1756-0500-5-394.
- 195 Carlsson, J.M., Olsen, D.R., & Mortensen, E.L. (2006) Mental health and health-related quality
196 of life: A 10-year follow-up of tortured refugees. *The Journal of Nervous and Mental
197 Disease*, 194(10), 725-731. doi: 10.1097/01.nmd.0000243079.52138.b7.
- 198 Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ:
199 Erlbaum.
- 200 Eljed, A., Mikolajczyk, R. T., Kramer, A. & Laaser, U. (2006). Health-related quality of life in
201 diabetic patients and controls without diabetes in refugee camps in the Gaza strip: a cross-
202 sectional study. *BMC Public Health*, 6, 268 doi:10.1186/1471-2458-6-268.
- 203 Fazel, M., Wheeler, J., & Danesh, J. (2005). Prevalence of serious mental disorder in 7000
204 refugees resettled in western countries: a systematic review. *Lancet*, 365(9467), 1309-
205 1314. doi: 10.1016/S0140-6736(05)61027-6.
- 206 Gerritsen, A.A.M., Bramsen, I., Deville, W. et al. (2006). Physical and mental health of Afghan,
207 Iranian, Somali asylum seekers and refugees living the Netherlands. *Social Psychiatry
208 and Psychiatric Epidemiology*, 41(1), 18-26. doi: 10.1007/s00127-005-0003-5.
- 209 Hawthorne, G., Herrman, H., & Murphy, B. (2006). Interpreting the WHOQOL-Bref: Preliminary
210 population norms and effect sizes. *Social Indicators Research*, 77(1), 37-59. doi:
211 10.1007/s11205-005-5552-1.
- 212 Matanov, A., Giacco, D., Bogic, M. et al. (2013). Subjective quality of life in war-afected
213 populations. *BMC Public Health*, 13, 624. doi:10.1186/1471-2458-13-624.

- 214 Ohaeri, J.U. & Awadalla, A. W. (2009). The reliability and validity of the short version of the
215 WHO Quality of Life Instrument in an Arab general population. *Annals of Saudi*
216 *Medicine*, 29(2), 98-104.
- 217 Sevington, S.M., Lofty, M., & O'Connell, K.A. (2004). The World Health Organization's
218 WHOQOL-BREF quality of life assessment. Psychometric properties and results of the
219 international field trials A Report of the WHOQOL Group. *Quality of Life Research*,
220 13(2), 299-310. doi: 10.1023/B:QURE.0000018486.91360.00.
- 221 Tang, S.S. & Fox, S.H. (2001). Traumatic experiences and mental health of Sengalese refugees.
222 *The Journal of Nervous and Mental Disease*, 189(8), 507-512. doi: 10.1097/00005053-
223 200108000-00003.
- 224 The WHOQOL Group (1995). The World Health Organization Quality of Life Assessment
225 (WHOQOL): Position paper from the World Health Organization. *Social Science and*
226 *Medicine*, 41(10), 1403-1409.
- 227 United Nations Refugee Agency (2013). UNHCR Registration Trends for Syrians (02 April).
228 Resource document. United Nations Refugee Agency.
229 <http://data.unhcr.org/syrianrefugees/country.php?id=103>. Accessed 10 March 2013.
- 230 United Nations Refugee Agency (2014). UNHCR Registration Trends for Syrians (28 February).
231 Resource document. United Nations Refugee Agency.
232 <http://data.unhcr.org/syrianrefugees/country.php?id=103>. Accessed 1 March 2014.
- 233 United Nations Refugee Agency (2014). UNHCR Registration Trends for Syrians (05 March).
234 Resource document. United Nations Refugee Agency.
235 <http://data.unhcr.org/syrianrefugees/country.php?id=103>. Accessed 10 March 2014.
- 236 United Nations Refugee Agency (2014c). Syria Regional Response Plan Iraq. Resource
237 document. United Nations Refugee Agency <http://www.unhcr.org/syriarrp6/docs/syria-rrp6-iraq-response-plan.pdf#A>. Accessed 10th March 2014.

239 United Nations Refugee Agency Information Management Unit (2014). UNHCR Monthly
240 Information Kit (March, 2014). Resource document. United Nations Refugee Agency.
241 <http://data.unhcr.org>. Accessed 10th March 2014.

242 WHOQOL group (1998). The World Health Organization Quality of Life Assessment
243 (WHOQOL): development and general psychometric properties. *Social Science and*
244 *Medicine*, 46(12), 1569-1585.

245 World Health Organization (1997). WHOQOL: Measuring Quality of Life. Resource document.
246 World Health Organization. http://www.who.int/mental_health/media/68.pdf. Accessed 31
247 March 2014.

Table 1 (on next page)

Tables reporting mean scores

Tables

Table 1

Mean (SD) score comparisons for WHOQOL-BREF domain scores (range 4–20) between Kurdistan refugees and adults across 23 countries (n = 11,830) from Skevington et al. (2004).

	Syrian Refugees in Kurdistan (n = 270)		Adults across 23 countries (n = 11,830)			
	Transformed Scores (4-20)					
	Mean	SD	Mean	SD	t	d
Physical Health	13.26	2.45	16.2	2.9	-19.41***	1.20
Psychological	12.62	2.45	15.0	2.8	-15.73***	0.97
Social Relationships	15.23	2.82	14.7 (14.3) ^a	3.7 (3.2)	2.99**	0.18
Environment	11.66	2.39	13.5	2.6	-12.48***	0.77

* p < .05; ** p < .01; *** p < .001

^a Original mean (SD) scores provided by Skevington et al. (2004) in brackets.

Table 2

Mean (SD) score comparisons for WHOQOL-BREF raw scores between Syrian refugees residing in Kurdistan and Refugees residing in West Africa.

	Refugees in Kurdistan (n =270)		Refugees in West Africa Akinyemi <i>et al.</i> (2012) (n= 444)		<i>t</i>	<i>d</i>
	Mean	SD	Raw Scores Mean	SD		
Physical Health	23.21	4.29	19.45	4.18	11.47***	0.89
Psychological	20.30	3.62	16.86	4.04	11.78***	0.91
Social Relationships	10.10 ^a	2.25	8.66	2.59	7.83***	0.60
Environment	22.85	4.62	18.88	5.03	10.76***	0.83

* p < .05; ** p < .01; *** p < .001

^a Raw score for 2 items is weighted for comparison against a 3 item score.

Table 3

Mean (SD) score comparisons for WHOQOL-BREF transformed Scores (0-100) between Syrian refugees residing in Kurdistan and Refugees residing in the Gaza strip

	Refugees in Kurdistan (n =270)		Refugees in the Gaza strip Eljedi et al. (2006) (n=197)		<i>t</i>	<i>d</i>
	Mean	SD	Mean	SD		
Physical Health	58.12	15.45	75.9	20.92	- 9.31***	0.87
Psychological	53.82	15.35	70.0	21.65	- 9.02***	0.85
Social Relationships	70.41	17.61	71.4	19.48	- 0.57	0.05
Environment	46.58	15.15	36.2	20.20	6.11***	0.57

* p < .05; ** p < .01; *** p < .001