



# Subjective social status mobility and mental health of asylum seekers and refugees: Population-based, cross-sectional study in a German federal state



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## ABSTRACT

**Background:** Asylum seekers and refugees (ASR) experience substantial changes in subjective social status (SSS), pre and post migration, which may affect their mental health. However, the effect of SSS mobility on mental health among ASR has been underexplored so far.

**Methods:** Population-based cross-sectional study among a random sample of 560 adult ASR living in 64 collective accommodation centres in Baden-Württemberg, Germany. SSS in the country of origin before emigration and in Germany was assessed with a multi-lingual, adapted version of the MacArthur social ladder. Health-related quality of life (HRQoL), anxiety and depressive symptoms were measured as mental health outcomes. Generalized linear regression models were fitted to estimate associations between changes in SSS and each outcome.

**Results:** A perceived loss of three or more steps in SSS from origin to Germany (compared to no change) was associated with poorer scores in HRQoL (B, standardized coefficient = -2.679, standard error, se = 1.351,  $p = 0.047$ ), with more depressive symptoms (B = 1.156, se = 0.389,  $p = 0.003$ ) and anxiety (B = 0.971, se = 0.432,  $p = 0.025$ ), in models adjusted for SSS in country of origin. The strength and direction of associations remained after adjusting for sex, age, education and time since arrival (HRQoL: B = -2.494, se = 1.351,  $p = 0.066$ ; depression: B = 1.048, se = 0.393,  $p = 0.008$ ; anxiety: B = 1.006, se = 0.438,  $p = 0.022$ ).

**Conclusion:** ASR experiencing downward SSS mobility present poorer mental health compared to those experiencing no change in SSS. Early integration efforts and intersectoral measures to counter social downward mobility could prevent poor mental health among ASR.

## Introduction

In 2018, the United Nations High Commissioner for Refugees estimated a total of 70.8 million forcibly displaced people worldwide, of which 25.9 million were refugees and 3.5 million were asylum seekers (UNHCR, 2018). Asylum seekers and refugees (ASR) face multiple disruptive situations and are often exposed to several risk factors for poor physical and mental health, occurring at their place of origin, during travel and upon arrival (Porter and Haslam, 2005). For example, among ASR that entered Europe in the past decade, a poorer quality of life and increased symptoms (and clinical diagnosis) of anxiety and depression were found associated with pre-, peri- and post-migration factors (Bogic et al., 2015; Walther et al., 2020).

Underlying socioeconomic inequalities in the mental health of ASR have also been described and contribute to the perpetuation of poor mental health status, in particular with regard to years after resettlement (Li et al., 2016; Hynie, 2018). A higher socioeconomic position

in the country of origin might be a protective factor for poor mental health in the host country, for example by enabling individuals to maintain a better health status through access to more and better resources (including social support) (Bauer et al., 2020). However, downward social mobility, compared to upward social mobility or stagnation in the same socioeconomic position, may represent a risk factor for poor health among ASR, since such experience may be associated with perceived social devaluation in the host country compared to the pre-migration socioeconomic position. This, in turn, may elicit feelings of loss of control in different areas of life which are linked to anxiety and depressive symptoms (Alcántara et al., 2014). Ethnographic research among Ghanaian migrants in Germany has shown, for example, that well-educated migrants experience a personal devaluation when their qualifications are not accepted and they take on comparatively low-value occupations (Nieswand, 2012). Other studies have found high frequencies of such education–occupation mismatches across Europe between immigrants and the native-born (Aleksynska and Tritah, 2013). Furthermore, there may be an “averaging” effect in perceived socioeconomic position among ASR, imposed by the conditions of travel, arrival, and resettlement (Bauer et al., 2020). In Europe, for example, several countries receive ASR in dedicated collective accommodations and have equal pro-

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cessing requirements for issuing documentation, provide the same basic monthly monetary stipend, provide the same information about basic rights, including access to healthcare, and relocation schemes according to pre-established rules (Bozorgmehr and Razum, 2015). ASR with different socioeconomic positions in their country of origin might be expected to receive, comprehend and act differently throughout the different steps of their immediate resettlement processing, and this may directly impact their mental health.

To study the impact of migration-induced changes in socioeconomic position on the health of ASR requires the use of subjective indicators. Besides potential difficulties in getting qualifications recognized in the host country, the use of objective indicators of socioeconomic status may not constitute a sensible measure of the way individuals place themselves in the social structure of their new communities. This is influenced by several other culturally related and nuanced factors, which are not captured in common measures of their educational level, income or occupation differentiation (Nielsen et al., 2013, Bozorgmehr et al., 2015). The use of subjective social status (SSS) may provide a clearer picture over the consequences of change in social status as a result of the migration process, since SSS refers to the individual perception of one's place on a hypothetical societal hierarchy (visualised by a ladder), taking into consideration their economic resources, education and occupation or job prestige (Euteneuer, 2014).

Acknowledging that migration-induced social mobility may be a relevant and independent determinant of one's mental health condition in the post-migration phase, we aimed to analyse the potential independent effect of a change in SSS on different mental health outcomes (health-related quality of life, depression and anxiety symptoms) among ASR living in Germany, while adjusting for relevant socio-demographic factors and educational level.

## Methods

### Participants and recruitment

This study uses health monitoring data gathered in the scope of the RESPOND project, a cross-sectional, population-based assessment, conducted among asylum seekers and refugees living in reception centres and regional accommodation centres in Germany's third largest federal state (Baden-Württemberg) from March to August 2018 (Biddle et al., 2019). As has been described previously (Biddle et al., 2019), the sampling procedure in regional accommodation centres comprised of a balanced random sampling approach, selecting 58 of 1938 facilities in the state. Additionally, a purposive sample of six state reception centres was selected, with random sampling of rooms within each reception centre. Within each randomly selected centre (regional accommodation) or room (reception facility), all eligible residents were invited to participate. Eligibility was assessed based on age (18 years or older) and language proficiency (English, German, Albanian, Arabic, Farsi, French, Russian, Serbian, Turkish) (Biddle et al., 2019). A total of 411 adults from accommodation centres and 149 individuals in reception centres took part in the study (overall response rate of 39.2%, Flowchart describing participants enrolment is provided as Supplementary material, Figure 1S).

Asylum seekers and refugees residing in these centres have been quasi-randomly transferred based on an administrative quota from state reception centres into districts (NUTS-3) and they stay in these accommodation centres until the asylum claim is processed. They can move to independent housing after 15 months (at time of data collection, now 18 months) or if attributed the refugee status. However, depending on their success in finding independent housing, their stay at the collective accommodation centre can be prolonged.

In each accommodation centre, trained multi-lingual researchers invited ASR individually for participation, explaining the study objectives, data protection measures and anonymity of results.

Participants were asked to complete a standardized paper questionnaire and return it by post (using a prepaid envelope) or complete the questionnaire online (using a person-specific QR-code linked to an online version of the questionnaire). A total of 560 adults answered the questionnaire.

### Questionnaire

The questionnaires covered socio-demographic characteristics (age, gender, highest education and professional education attainment), information about the asylum process (time since arrival), participants' health status and healthcare utilization (Biddle et al., 2019).

Subjective social status was assessed with an adapted and pre-tested (Hadler et al., 2017) version of the MacArthur social ladder (10-rungs) (Adler et al., 2000), which was asked in reference to the participants' position in the country of origin before their emigration and in reference to the position in Germany.

The Patient Health Questionnaire 2-item version (PHQ2) (Kroenke et al., 2003) was used to measure depressive symptoms, and the Generalized Anxiety Disorder 2-item version (GAD2) (Kroenke et al., 2009) was used to measure anxiety symptoms. Health-related quality of life (HRQoL) was measured through the EUROHIS-QOL (Schmidt et al., 2006). These three measures were considered as mental health outcomes.

### Ethical considerations

Written informed consent was obtained from all participants and the study protocol was approved by the ethics committee of the Medical Faculty Heidelberg (reference: S-516/2017).

### Data handling

Age was categorized in five groups (18 to 25 years old, 26 to 30, 31 to 35, 36 to 40 and 41 years or older). Responses to the two questions about highest educational attainment and highest professional education were combined and categorized in a six-level variable of educational score, from lowest to highest educational level (previously described elsewhere (Biddle et al., 2019)).

The difference in scores obtained in the MacArthur social ladder or SSS following migration (i.e., score obtained in Germany *minus* score in country of origin), was categorized in five levels, as follows: stable (no change in score); three or more steps down; one or two steps down (downward mobility); one or two steps up; and 3 or more steps up (upward mobility). Reported country of origin was categorized in the following regions according to the UN Geoscheme: Eastern Europe, Southern Europe, Western Asia, Southern Asia, Western Africa, Central Africa, Northern Africa and Other. The declared time since arrival was categorized as less or more than a year. Scores obtained in the PHQ2, GAD2 and EUROHIS-QOL were treated as continuous variables, with higher scores in these instruments corresponding to, respectively, more frequent symptoms of depression, anxiety, and better health-related quality of life.

### Statistical analysis

Mean scores (standard deviations) were computed for the PHQ2, GAD2 and EUROHIS-QOL scales, and were compared across the above-mentioned categories of change in SSS from country of origin to Germany, according to the SSS in country of origin, age, gender, educa-

tional score, region of origin and time since arrival. T-tests or Analyses of Variance (ANOVA) were used as appropriate.

Generalized linear regression models (GLM) were fitted to measure associations between the categories of change in SSS and each of the three mental health outcomes (PHQ2, GAD2, EUROHIS-QOL). A step-wise approach was taken for variable inclusion in the models:

- a) First, models were fitted for each outcome and each predictor considered individually (Model 0 – presented as supplementary material);
- b) Second, SSS in the country of origin was added to adjust for the starting position (Model 1);
- c) Finally, sex, age, educational level, and time since arrival were added, adjusting the models for these potential confounders, particularly in the case of education, previously considered a strong predictor of adult health (Kawachi et al., 2010) (Model 2).

Additionally, models adjusted for all variables except educational level (Model 3), were fitted and are presented as supplementary material. For these latter models, estimates of magnitude confounding were computed (percentage change for the coefficients between model 2 and model 3 for each outcome).

Models used observations with valid values for all variables considered. Associations were expressed as standardized Beta coefficients (with standard errors). Statistical significance was determined at the  $p = 0.05$  level.

Estimated mean scores for each outcome obtained through the fully adjusted GLMs were plotted according to the categories of change in SSS from country of origin to Germany.

## Results

### Sample Characteristics and Subjective Social Status Mobility

A total of 30.9% of participants referred to their SSS in the country of origin as being between the first and the fourth step of the MacArthur social ladder, 18.6% referred the fifth or sixth step and 22.3% between the seventh and the tenth step (higher steps represent higher SSS). Regarding SSS in Germany, these proportions were: 49.5% in the first four steps, 12.5% in steps five and six and 8% between the seventh and tenth step.

Sixty-two percent of participants were male and 29.3% were aged between 18–25 years old (Table 1). Overall, 17.7% of participants scored in the lowest educational level and 6.4% scored in the highest level. A total of 45.7% of participants arrived in Germany more than a year ago.

A total of 19.8% of participants did not change their SSS score from country of origin to Germany, while 23.9% reported moving three or more steps down in their SSS score, 12.1% reported one or two steps down, 5.2% reported one or two steps up and 6.1% reported three or more steps up (Table 1).

Individuals with higher pre-migration SSS on average experience stronger downward SSS mobility, while those with lower pre-migration SSS experience on average a positive change in SSS (upward mobility) between the perceived position in the country of origin and the position in Germany (Fig. 1).

### Mental Health Outcomes according to Socio-demographic characteristics and Subjective Social Status Mobility

Mean scores in the EUROHIS-QOL were lower, representing poorer HRQoL, for those who did not change (mean, standard deviation = 22.48, 7.18) or moved three or more steps down (23.89, 6.54) in their SSS and it was higher among those who moved up one or two (26.48, 6.47), three or more steps up (25.23, 6.98;  $p = 0.006$ ). Significant differences in the EUROHIS-QOL mean scores were also observed according to the SSS score in the country of origin (lowest mean score for participants from Southern Europe: 17.93, 6.38), but no other significant difference was found in the EUROHIS-QOL mean scores according

to the remaining characteristics explored (age, sex, educational level and time since arrival, Table 1).

Also, there was no significant difference in the PHQ2 and the GAD2 mean scores across the categories of change established for SSS mobility, nor the remaining factors considered.

### Generalized linear models

In the univariate models, a significant association was observed for categories “1 or 2 steps down” and “1 or 2 steps up”, compared with category “Stable (no change)”, and the EUROHIS-QOL scores (Supplementary material, Table 1S). No other significant association was noted in the univariate models. In the models fitted to measure the associations between the categories of SSS mobility and the EUROHIS-QOL scores adjusted for SSS in the country of origin (Table 2), a significant negative association was observed for category “3 or more steps down” ( $B = -2.679$ ,  $p = 0.047$ ) compared with the “Stable (no change)” category. This coefficient remained negative in the model adjusted for SSS in the country of origin, sex, age, educational level and time since arrival, although non-significant ( $B = -2.494$ ,  $p = 0.066$ ).

For the PHQ2 scores, a significant association in the models adjusted for SSS in the country of origin was observed between the category of mobility “3 or more steps down” ( $B = 1.156$ ,  $p = 0.003$ ), suggesting more frequent depressive symptoms among ASR classified in this mobility group when compared to those declaring that SSS was “Stable (no change)” from country of origin to Germany (Table 2). This result remained significant in the fully adjusted model ( $B = 1.048$ ,  $p = 0.008$ ). No other category of SSS mobility showed a significant association with the PHQ2 scores in the models fitted.

The same trend was observed for the association between the SSS mobility categories and the GAD2 score (Table 2), with the adjusted models suggesting that a change of “3 or more steps down” is related to more frequent anxiety symptoms, compared to no change in SSS from country of origin to Germany ( $B = 1.006$ ,  $p = 0.022$ ).

Fig. 2 presents the estimated means obtained in the fully adjusted generalized linear models fitted for the EUROHIS-QOL, PHQ2 and GAD2 scores according to the SSS mobility categories considered.

## Discussion

This study analysed effects of changes in SSS from country of origin to host country on health-related quality of life, depressive and anxiety symptoms of ASR living in Germany. The results of this study suggest that the perception of a downward change in SSS, i.e. the difference in the McArthur SSS ladder between the perceived pre-migration and the post-migration SSS of three or more steps, is associated with worse mental health outcomes, independently of several potential confounders (namely age, sex, SSS in the country of origin, educational level and time since arrival to the host country). The results suggest that the stronger the perceived move downward, the poorer were the mental health outcomes.

Our findings are in line two previous analysis conducted with the cross-sectional National Latino and Asian American Study (2002–2003), where Latino immigrants who perceived downward social mobility had higher odds of presenting with a major depressive episode during the previous year, compared to immigrants who did not change their SSS from country of origin to the US (Alcántara et al., 2014, Nicklett and Burgard, 2009).

The present results are also congruent with a recent analysis conducted to the 2016 refugee survey, which was part of the German Socioeconomic Panel (SOEP), showing how the socioeconomic gradient in health satisfaction among Syrian refugees before migration to Germany was attenuated after migration, thus supporting a negative impact of downward SSS mobility (Bauer et al., 2020). A slight difference exists, however, in the SOEP derived question assessing SSS among Syrian refugees, which asked “How would you estimate your financial situation

**Table 1**  
Sample characteristics by EUROHIS-QOL, PHQ2 and GAD2 scores

	n (%)	EUROHIS-QoL		PHQ2		GAD2	
		n	mean (sd)	n	mean (sd)	n	mean (sd)
<b>Subjective Social Status Social mobility</b>							
Stable (no change)	111 (19.8)	89	22.48 (7.18)	95	2.55 (0.85)	97	2.92 (2.23)
3 or more steps down	134 (23.9)	125	23.89 (6.54)	126	2.98 (1.93)	128	2.95 (2.03)
1 or 2 steps down	68 (12.1)	66	25.97 (5.49)	62	2.27 (1.50)	62	2.65 (1.83)
1 or 2 steps up	29 (5.2)	25	26.48 (6.47)	25	2.48 (1.94)	28	2.50 (1.75)
3 or more steps up	34 (6.1)	31	25.23 (6.98)	32	2.88 (1.74)	32	3.00 (2.11)
Missings/p-value	184		$p = 0.006$		$p = 0.102$		$p = 0.735$
<b>Subjective social status (SSS) in country of origin</b>							
1	85 (15.2)	70	21.21 (7.08)	70	2.80 (1.84)	72	3.19 (2.17)
2	27 (4.8)	23	26.57 (6.16)	24	2.75 (1.89)	25	2.72 (2.17)
3	33 (5.9)	29	25.97 (5.47)	29	2.90 (1.61)	30	3.00 (1.76)
4	28 (5.0)	26	26.46 (6.46)	24	2.21 (1.53)	24	2.04 (1.97)
5	69 (12.3)	62	23.92 (5.84)	65	2.68 (1.61)	64	3.19 (1.92)
6	35 (6.3)	33	25.03 (7.20)	32	2.38 (2.14)	33	2.27 (2.31)
7	39 (7.0)	37	25.95 (5.66)	38	2.34 (2.07)	38	2.34 (1.89)
8	44 (7.9)	41	25.46 (6.32)	42	2.57 (1.89)	44	2.52 (1.56)
9	13 (2.3)	12	25.33 (5.58)	13	2.31 (2.06)	13	2.38 (2.06)
10	29 (5.2)	24	22.33 (7.46)	27	2.78 (1.87)	27	3.30 (2.40)
Missings/p-value	158		$p < 0.001$		$p = 0.855$		$p = 0.070$
<b>Sex</b>							
Male	347 (62.0)	284	25.33 (6.46)	296	2.46 (1.79)	299	2.65 (2.00)
Female	158 (28.2)	138	24.04 (7.31)	135	2.72 (1.88)	134	2.85 (2.12)
Missings/p-value	55		$p = 0.067$		$p = 0.165$		$p = 0.341$
<b>Age</b>							
18–25	164 (29.3)	136	24.94 (6.92)	139	2.60 (1.80)	141	2.92 (2.09)
26–30	89 (15.9)	78	26.06 (6.17)	77	2.23 (1.75)	77	2.13 (1.96)
31–35	87 (15.5)	67	24.84 (5.97)	69	2.39 (1.80)	69	2.83 (2.00)
36–40	66 (11.8)	55	23.84 (6.87)	58	2.74 (1.81)	55	2.95 (1.93)
41+	86 (15.4)	71	24.82 (6.97)	74	2.68 (1.98)	75	2.68 (2.07)
Missings/p-value	68		$p = 0.436$		$p = 0.427$		$p = 0.067$
<b>Educational level (Lowest) 1</b>							
2	99 (17.7)	83	24.10 (7.29)	83	2.35 (1.79)	86	2.77 (2.23)
3	30 (5.4)	25	26.20 (4.51)	26	2.12 (1.68)	24	2.54 (1.93)
4	70 (12.5)	58	23.81 (6.58)	61	2.84 (1.68)	61	2.98 (1.88)
5	103 (18.4)	92	24.83 (6.94)	93	2.65 (1.77)	91	2.78 (1.99)
6	56 (10.0)	47	25.06 (6.31)	50	2.94 (1.98)	50	2.74 (2.03)
(Highest) 6	36 (6.4)	35	24.54 (6.85)	33	2.30 (1.91)	34	2.32 (1.93)
Missings/p-value	166		$p = 0.699$		$p = 0.207$		$p = 0.764$
<b>Region of Origin</b>							
Eastern Europe	12 (2.1)	9	28.56 (4.04)	11	1.73 (1.74)	11	1.91 (1.92)
Southern Europe	18 (3.2)	15	17.93 (6.38)	14	2.57 (1.45)	13	2.77 (2.01)
Western Asia	134 (23.9)	121	26.04 (7.22)	124	2.45 (1.78)	125	2.54 (1.88)
Southern Asia	128 (22.9)	114	25.81 (6.43)	113	2.68 (1.80)	116	2.99 (2.05)
Western Africa	120 (21.4)	96	23.90 (6.20)	94	2.72 (1.95)	93	2.68 (2.23)
Central Africa	14 (2.5)	11	21.64 (4.74)	11	2.73 (1.74)	11	2.73 (1.68)
Northern Africa	3 (0.5)	3	23.00 (2.65)	3	1.33 (2.31)	3	3.00 (2.65)
other	73 (13.0)	50	24.84 (6.43)	55	2.24 (1.86)	53	2.43 (1.99)
Missings/p-value	58		$p < 0.001$		$p = 0.427$		$p = 0.566$
<b>Time since arrival</b>							
less than 1 year	203 (36.3)	180	24.41 (6.77)	171	2.61 (1.92)	173	2.68 (2.03)
more than 1 year	256 (45.7)	210	25.30 (6.68)	222	2.56 (1.81)	223	2.76 (2.09)
Missings/p-value	101		$p = 0.191$		$p = 0.769$		$p = 0.701$

EUROHIS – QOL – EUROHIS Quality of Life Questionnaire; PHQ2 – Patient Health Questionnaire 2-item version; GAD2 – General Anxiety Disorder 2-item version;  $p$  –  $p$ -values from ANOVAs (Subjective Social Status mobility, SSS in country of origin, age, educational level and region of origin) or T-test (sex and time since arrival).

at that time with the income of other people in your country?” and had a 5-level Likert style response option (Bauer et al., 2020). This differs from the classic 10-rung McArthur SSS ladder that asks about participants perceived position in society not only in relation to income/financial situation but also regarding education and employment/job prestige, thus being considered as reflective of the cognitive averaging of standard markers of socioeconomic situation (Singh-Manoux et al., 2003). This difference may have influenced the response from Syrian refugees in the SOEP study, to give more weight to income in their judgments. Nevertheless, both SOEP and our results corroborate the link between lower SSS and mental health disorders observed worldwide (Scott et al.,

2014) and the importance of exploring SSS as a determinant, besides objective socioeconomic indicators.

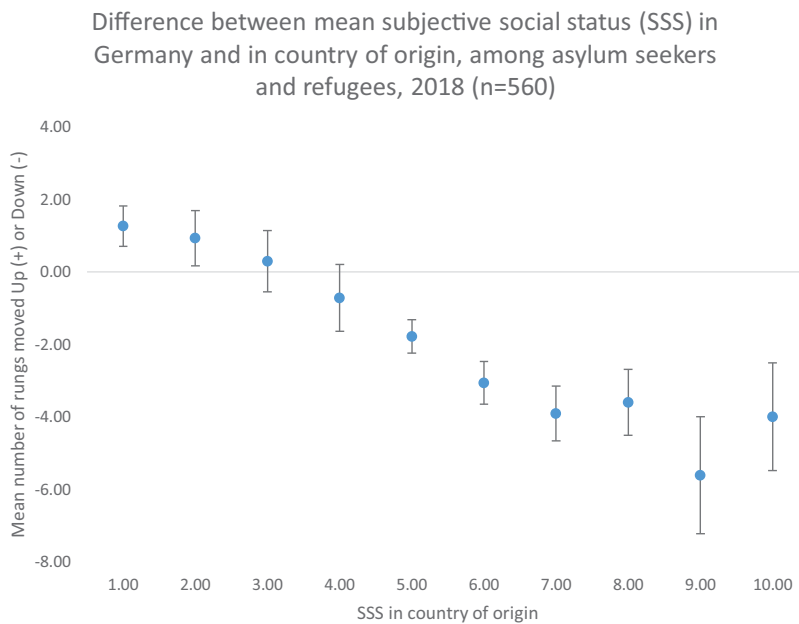
In another analysis conducted within the German national SOEP study, the (poorer) conditions of living of ASR shortly after arrival to Germany showed a negative impact on their subjective well-being (single-item question) and psychological distress (Walther et al., 2020). By showing that a perceived downward SSS mobility is associated with symptoms of anxiety and depression and with (poorer) health-related quality of life as measured through the EUROHIS, our results corroborate this previous analysis and expand it, because the previous analysis was restricted to ASR from selected regions (Syrian, Afghan, Iraqi, Eritrean, Other), while we took a population-wide analysis.

**Table 2**  
Generalized Linear Models for EUROHIS-QOL, PHQ2 and GAD2 scores and Subjective Social Status (SSS) mobility categories.

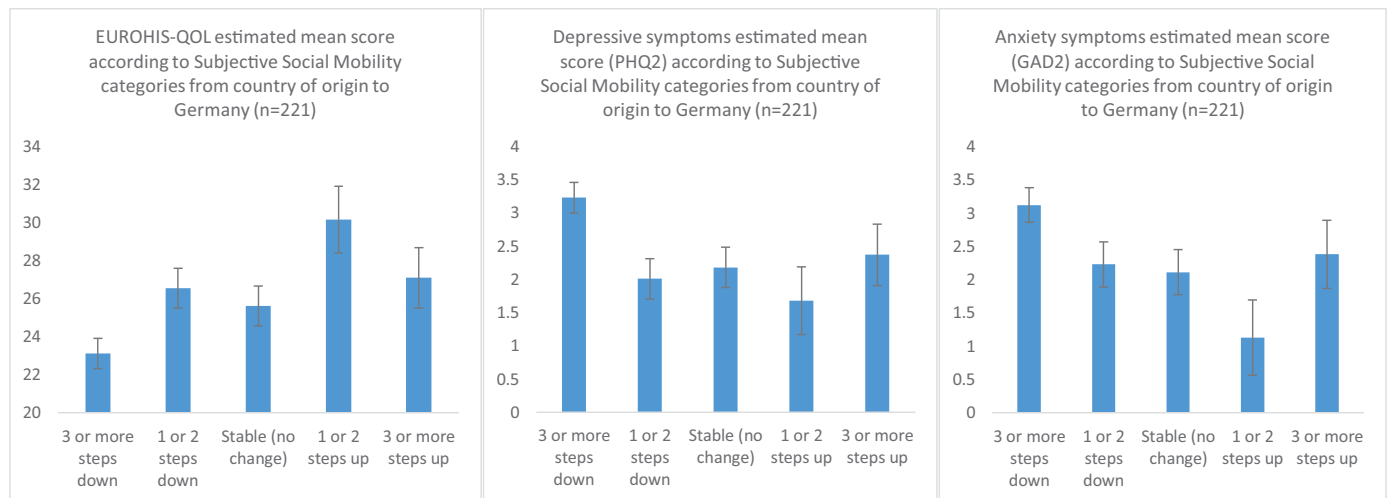
	n	EUROHIS-QOL		PHQ2		GAD2							
		Model 1 B (sd error)	p	Model 2 B (sd error)	p	Model 1 B (sd error)	p	Model 2 B (sd error)	p				
Subjective Social Status mobility													
Stable (no change)	58	Reference		Reference		Reference		Reference		Reference		Reference	
3 or more steps down	88	-2.679 (1.3514)	0.047	-2.494 (1.3553)	0.066	1.156 (0.3893)	0.003	1.048 (0.3932)	0.008	0.971 (0.4319)	0.025	1.006 (0.438)	0.022
1 or 2 steps down	44	0.780 (1.4161)	0.582	0.941 (1.4397)	0.513	-0.047 (0.4079)	0.908	-0.176 (0.4177)	0.673	0.159 (0.4526)	0.725	0.114 (0.4652)	0.807
1 or 2 steps up	13	4.358 (1.9205)	0.023	4.556 (1.8951)	0.016	-0.354 (0.5533)	0.522	-0.499 (0.5498)	0.364	-0.805 (0.6138)	0.190	-0.985 (0.6124)	0.108
3 or more steps up	18	1.644 (1.6892)	0.330	1.484 (1.7368)	0.393	0.285 (0.4866)	0.558	0.19 (0.5039)	0.706	0.262 (0.5399)	0.627	0.269 (0.5613)	0.631
Subjective social status (SSS) in country of origin													
1	37	Reference		Reference		Reference		Reference		Reference		Reference	
2	15	5.909 (1.9081)	0.002	6.404 (1.9713)	0.001	-0.186 (0.5497)	0.735	-0.123 (0.5719)	0.829	-0.553 (0.6098)	0.365	-0.613 (0.6371)	0.336
3	17	6.514 (1.943)	0.001	6.557 (1.9386)	0.001	0.143 (0.5597)	0.799	0.217 (0.5625)	0.699	-0.102 (0.621)	0.869	-0.095 (0.6265)	0.880
4	16	6.593 (1.9871)	0.001	6.086 (2.0122)	0.002	-0.501 (0.5724)	0.381	-0.505 (0.5838)	0.387	-1.402 (0.6351)	0.027	-1.336 (0.6503)	0.040
5	38	4.285 (1.6069)	0.008	4.297 (1.6431)	0.009	-0.385 (0.4629)	0.406	-0.397 (0.4767)	0.405	-0.508 (0.5136)	0.323	-0.578 (0.531)	0.276
6	20	8.383 (1.9183)	<0.001	8.571 (1.9714)	<0.001	-1.101 (0.5526)	0.046	-1.131 (0.573)	0.048	-1.8 (0.6131)	0.003	-1.845 (0.6371)	0.004
7	25	9.667 (1.9065)	<0.001	9.352 (1.9095)	<0.001	-1.546 (0.5492)	0.005	-1.563 (0.554)	0.004	-1.764 (0.6093)	0.004	-1.762 (0.6171)	0.004
8	26	7.686 (1.8752)	<0.001	7.372 (1.8742)	<0.001	-1.066 (0.5402)	0.049	-0.956 (0.5438)	0.079	-1.472 (0.5993)	0.014	-1.478 (0.6057)	0.015
9	11	9.569 (2.4295)	<0.001	9.170 (2.5672)	<0.001	-1.74 (0.6999)	0.013	-1.536 (0.7448)	0.039	-2.407 (0.7765)	0.002	-2.272 (0.8296)	0.006
10	16	4.417 (1.9547)	0.024	4.401 (1.9202)	0.022	-0.817 (0.5631)	0.147	-0.844 (0.5571)	0.130	-0.714 (0.6247)	0.253	-0.816 (0.6205)	0.188
Sex													
Male	148			Reference				Reference				Reference	
Female	73			-1.417 (0.8699)	0.103			0.242 (0.2524)	0.338			-0.069 (0.2811)	0.807
Age (years)													
18–25	77			Reference				Reference				Reference	
26–30	43			1.103 (1.1518)	0.338			-0.142 (0.3342)	0.670			-0.682 (0.3722)	0.067
31–35	30			0.711 (1.3412)	0.596			-0.128 (0.3891)	0.743			-0.263 (0.4334)	0.544
36–40	34			-0.609 (1.3306)	0.647			-0.333 (0.386)	0.388			-0.335 (0.4300)	0.437
41+	37			0.891 (1.2195)	0.465			-0.384 (0.3538)	0.278			-0.37 (0.3941)	0.348
Educational score													
(Lowest) 1	48			Reference				Reference				Reference	
2	13			2.734 (1.9525)	0.161			-0.309 (0.5665)	0.585			-0.798 (0.631)	0.206
3	36			-0.629 (1.3931)	0.651			0.473 (0.4042)	0.242			-0.023 (0.4502)	0.959
4	63			-0.272 (1.2722)	0.831			0.167 (0.3691)	0.651			0.091 (0.4111)	0.826
5	36			-0.198 (1.4436)	0.891			0.75 (0.4188)	0.073			0.105 (0.4665)	0.821
(Highest) 6	25			0.656 (1.7374)	0.706			-0.202 (0.5041)	0.688			-0.352 (0.5614)	0.531
Time since arrival													
less than 1 year	103			Reference				Reference				Reference	
more than 1 year	118			1.420 (0.8336)	0.089			-0.081 (0.2418)	0.739			-0.08 (0.2694)	0.766

EUROHIS – QOL – EUROHIS Quality of Life Questionnaire; PHQ2 – Patient Health Questionnaire 2-item version; GAD2 – General Anxiety Disorder 2-item version; B - standardized coefficient; sd – standard error; p – p-value.





**Fig. 1.** Difference between the scores obtained from participants with reference to their SSS in Germany and in country of origin.



**Fig. 2.** EUROHIS-Quality of Life, Patient Health Questionnaire 2-item version (PHQ2) and Generalized Anxiety Disorder 2-item version (GAD2) estimated means according to Subjective Social Status Mobility categories. Error bars represent standard error of the mean. Estimated means from models adjusted to Subjective Social Status in country of origin, sex, age, educational level and time since arrival (higher scores=better HRQoL or more frequent symptoms).

The results from a recent systematic review of factors associated with the quality of life of ASR in high-income countries showed that better quality of life was chiefly associated with integration in social networks and worse quality of life was mainly linked with the presence of mental disorders (van der Boor et al., 2020). Several of the included studies explored the influence of socioeconomic characteristics to quality of life (e.g. education, socioeconomic living conditions, unemployment). However, the results were mixed with some showing significant associations with quality of life (Carlsson et al., 2006, Correa-Velez et al., 2020, Laban et al., 2008), and others showing non-significant ones (Hengst et al., 2018, Teodorescu et al., 2012). Our results suggest that such mixed results could be reconciled by considering the change in subjective socioeconomic position. The situation measured in the host country might not be sufficient to show the (negative) effect to quality of life of the underlying socioeconomic disadvantage faced by ASR at arrival, since traditional indicators may present a more homogenous picture of socioeconomic position than is subjectively experienced. For example, individuals may struggle to have their qualifications (educa-

tional and/or professional) promptly recognized, experiencing a fall in their subjective perception of social status, despite their objective high qualifications. These are factors that may hinder the influence of their living conditions, which can be overcome by looking at the change in SSS. Either shortly after arrival or following a period of adaptation, ASR may feel a loss of control in different levels of their life, including a loss in their social status, which comes, plausibly, accompanied by stress and anger or sadness and helplessness (i.e., anxiety and depressive symptoms) (Alcántara et al., 2014). Furthermore, the perception of SSS mobility may be a proxy for divergence in life expectations between pre- and post-migration periods, with negative psychological consequences (such as shame or loss of self-efficacy) (Alcántara et al., 2014).

The relationship between social status and mental health explored in this analysis could be explained by the severe difficulties ASR often face in their social integration in host societies, aggravated by the difficulties in finding employment, which depends on their legal status. This, in turn, is particularly aggravated by way of existent deterrence or restrictive entry policies in place (Silove et al., 2000, Juárez et al.,

2019), which force ASR to stay for long periods in collective reception centres, facing further barriers in access also to education, housing, welfare and healthcare. However, more research is needed to clearly disentangle the influence of a disadvantaged socioeconomic position, or of a perceived downward social trajectory change in such position, to the mental health and quality of life of ASR. Of particular interest is the question whether there are contexts that contribute more to downward social mobility, and what physical, social, and legal attributes related to relevant policies and determinants characterise these contexts, such as housing, labour market integration initiatives or support services availability, for example.

The presented results allow us to draw important policy recommendations. First, focussing on those who perceived a “loss” in their social status may help, in light of resource constraints, to identify those at highest risk for poor mental health and in need of supportive interventions. Policies exclusively targeting ASR with objectively measured low social status may miss such high-risk group. Second, contexts that may facilitate experiences of social devaluation, and result in long-lasting poor mental health conditions and lower quality of life, should be identified and mitigated. This may mean that social and psychological assessments of ASR at arrival or after establishment, need to explore individual meanings of social status and ensure that individuals who perceived a downward social mobility do not experience an extreme socioeconomic decline to the point of not seeking (mental) healthcare, since poverty is an important risk factor for poor mental health and access to care (Rousseau and Frounfelker, 2019).

Finally, intersectoral measures for integration, that can prevent further deterioration of social, economic and mental health functionality, must be followed, specifically because of the enduring economic crisis that impacted Europe in the last decade, inevitably hitting hard on this vulnerable group of the population, and because of the Covid-19 pandemic, also accompanied by widening socioeconomic inequalities, of which ASR are not immune.

### Strengths and limitations

In this study, we used self-reported measures for both exposures and outcomes, which can be considered a limitation, particularly in the case of depression and anxiety symptoms, for which a diagnosis, performed by a trained physician, might have added clinical relevance. Nonetheless, the associations found give insights to the relationships between socioeconomic factors and health in a context which is normally under-evaluated due to limited human and technical resources.

Despite the population-based and random sampling approach taken, the response rate was of 39%, thus we cannot rule out the potential effect of a non-response bias. However, since less educated (and socioeconomically more disadvantaged) participants are less likely to participate in this type of study, we could only expect an underestimation of the associations measured. Nevertheless, the sample has previously been found comparable to the population of asylum applicants in Baden Württemberg with regard to the distribution of age, sex and nationality (Biddle et al., 2019).

A strength of this study lies in the congruency of the results, which resemble a dose-response relationship between exposure and outcome, with higher or lower QOL and more frequent depressive and anxiety symptoms according to greater (downward) changes in the SSS scale. The use of SSS is an advantage when compared to traditional and more objective socioeconomic indicators (e.g. education, occupation, income), by predicting health outcomes “above and beyond” these objective measures (Euteneuer, 2014). This is true especially in the context of ASR, where these indicators are void.

We did not explicitly explore the link between the traditional objective indicators of socioeconomic status (i.e., education, income or occupation differentiation) and SSS of participants in Germany, since our focus was on the effect of a change in SSS and mental health. We chose, however, to adjust our analysis for participant educational level (as sin-

gle and commonly unchanged measure of objective socioeconomic position following migration), reducing this way the potential for residual confounding due to the unmeasured effect of objective socioeconomic indicators or their change. As shown in the Supplementary material (Table 2S), small percentual magnitude confounding was observed in most coefficients for the associations between SSS mobility categories and mental health outcomes, when comparing models (not) adjusted for educational level of participants.

This study did not explore the exposure to violence and traumatic events (particularly in the country of origin), as factors associated with poor mental health outcomes, even though these are considered major determinants of mental disorders among ASR (Li et al., 2016). Further explorations of the impact of SSS mobility to mental health should also consider the influence of previous (traumatic) exposures as potential confounders.

### Conclusion

This study shows that a perceived change of the ASR’s place in a (tacit) social hierarchy resulting from the migration movement can affect mental health and quality of life. This suggests that interventions focusing in intersectoral measures to counter social downward mobility could help prevent poor mental health symptoms among ASR and improve quality of life.

### Declaration of Competing Interest

The authors declare that they have no conflict of interest.

### Data statement

Data are available from the authors upon reasonable request.

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### Authors Contributions

DC – conceptualization, data curation, data analysis, writing (original draft); LB – methodology, project administration, analysis, writing (review & editing); CM – analysis, writing (review & editing); KB – funding acquisition, methodology, analysis, supervision, writing (review & editing). All authors read and approved the final submitted manuscript.

### Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jmh.2020.100020.

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