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Chapter 4

Health-Related Quality of Life (HRQoL) among Elderly Turkish and Polish Migrants and German Natives: The Role of Age, Gender, Income, Discrimination and Social Support

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Additional information is available at the end of the chapter

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Abstract

Background: Migration can negatively and positively influence health-related quality of life (HRQoL). Yet, little is known about the HRQoL of Turkish and Polish migrants and German natives.

In this study, the following hypotheses were formulated: (1) Elderly Turkish as well as Polish migrants show lower HRQoL than elderly German natives. (2) Age and gender significantly influence HRQoL; low income level and perceived discrimination decrease HRQoL; social support increases HRQoL.

Methods: A questionnaire (Short form-36 (Sf-36) and other questions) was distributed among 203 migrants and 101 natives. Univariate analysis was performed for the group analysis of the Sf-36 sum scores. Multiple linear regression was used to analyse the influence of the selected predictors on Sf-36 scores.

Results: (1) Scores of the Turkish migrants were significantly lower for Role Emotional (RE) and Mental Health (MH) compared to the natives. Scores of the Polish migrants were significantly higher for Physical Functioning (PF) and Vitality (VT) compared to the natives. (2) Age had an effect in both migrant and native groups, but only on PF and RE. Gender was a predictor of HRQoL among the migrants in PF, VT and MH. Migrants with a low income level reported their General Health (GH) and MH as poor. Discrimination had an influence on MH in the migrant groups. Social support was found to predict MH and GH in the German group.

Conclusion: Conclusion: Being a migrant does not necessarily entail poor HRQoL. Future research should investigate the health of migrants as well as focus on their health resources.

Keywords: , Turkish migrants, Polish migrants, German natives, health-related quality of life, quality of life, Sf-36

1. Introduction

According to figures of the German Federal Statistical Office [1], almost one of every five people in Germany has a migration background. Moreover, 15 million people out of 80.3 million people living in Germany have been granted migrant status. About 3.7 million (25.1%) are aged 50 years or older. In the same age bracket (28.9 million), elderly people of a migration background represent 13.0% of the total elderly population [1]. According to this source, it is expected that the number of elderly migrants will grow as young migrants also grow older.

Turkish migrants make up the largest share of the migrant population in Germany. The second largest group of migrants in Germany is Polish [2]. Hence, both Turkish and Polish migrants, aged 60 and above, form an important research group. Consequently, German social and health services are confronted by challenges in satisfying the needs of these people.

HRQoL is the perceived quality of an individual's health and daily life and therefore an important target of health promotion and disease prevention in older life. As a consequence, information regarding health and HRQoL of elderly migrants can serve to meet their needs in a socially and politically expedient way, develop strategies on health care issues and adapt or change policies.

Recent research regarding health of migrants often uses a problem-oriented perspective. The most important determinants which negatively influence the health of elderly migrants can be summarised as low socio-economic status (SES) due to bad working and living conditions [3] and situations which cause suffering post-migration—e.g. discrimination experiences [4].

Apart from this pathogenic approach, some researchers do not just focus on the disadvantages of migration, but also consider the benefits and opportunities it affords. In this regard, families and ethnic communities (seen as a support system) are often mentioned as being important for success in life [5].

Surprisingly, however, research on health and in more detail on HRQoL of elderly migrants, such as the elderly Turkish and Polish population in Germany, is still scarce and insufficient data have been generated, with only a few studies being published [6–8]. Moreover, findings often do not compare the results of different, especially elderly, migrant groups with each other. In view of the paucity of studies, the aim of this study was to obtain information on the HRQoL of elderly Turkish and Polish migrants as well as on elderly native Germans.

2. Migrants in Germany

The German Federal Statistical Office reported that almost every fifth person in Germany has a migration background, i.e. 18.9% of the total population in Germany of 80.3 million [1]. People with a migration background in Germany come predominantly from Turkey (17.9%), followed by Poland (13.1%). First generation migrants are an ageing population in Germany. In fact, according to the Statistical Office [9], about 1.4 million migrants are aged 65 and above.

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In addition, there are about 2.4 million migrants aged between 50 and 64. Compared with native people in the same age group (15.1 million aged 65 and above; 13.9 million aged 50–64), this number of people represents a substantial part of the total population. As a whole, the numbers of elderly migrants in both categories will increase further in future since the influx of Turkish and Polish migrants is decreasing.

Most Turkish migrants came to Germany between 1955 and 1973 [10]. In order to regulate this migration, the Federal Republic of Germany and Turkey signed the 'agreement for the recruitment of Turkish workers for the German labour market' in 1961. Most Turkish workers were actively hired by the German Federal Labour Office to work in German factories and in the service sector [11]. These the so-called guest workers served as means to relieve the German economy from the labour shortage during the 'economic miracle' [12]. Contrary to initial plans, most of these guest workers and families decided not to return to their home countries but took advantage of better living conditions in the host country, e.g. advantages of the health or educational system [13].

The second major group of migrants came from Poland and other Eastern European Countries as well as from the former Soviet Union. A major part of them—more than 3.9 million people—came to Germany after 1945 as 'resettlers', or after 1992 as 'late repatriates'. Most of these migrated after the fall of the 'Iron Curtain' [14], during a time when these regions were governed by Germany. After the Second World War, many of these ethnic Germans and their children endured forced resettlement and suffered ethnic discrimination in Eastern Europe or in the former Soviet Union [14]. Others faced economic hardship. Having a German background, they were allowed to remigrate to Germany and to receive German citizenship [15]. In consequence, many moved to Germany in order to improve their overall prospects and intended to stay in Germany on a long-term basis. Most of them have since been naturalised or hold 'dual citizenship' [16].

3. The health situation of migrants

Since migrants' health is often seen from a problem-oriented perspective [5, 17], various determinants are considered, which might have a negative impact on health. It seems inappropriate to see migrants' health only in relation to problems and conflicts. In this regard, Eichler [5] recommends combining a pathogenic approach with a salutogenic approach [18], that is, to relate 'trouble-spot' components with social determinants, which might positively affect the health of migrant populations. Consequently, the benefits of migration should be considered when investigating the health and quality of life of elderly migrants. There are determinants that have a positive influence on migrants' health such as strong family and ethnic networking [19].

The most reported determinants of the health of elderly migrants can be categorised as socioeconomic status (SES; e.g. income), psychological aspects (e.g. discrimination) and social networking (e.g. social support). These are described for Turkish and Polish migrants in the following.

3.1. Socio-economic status as a determinant of health and HRQoL

A key socio-economic factor influencing elderly migrants' health negatively is that of low income and the concomitant risk of poverty [20]. The link between a low SES and illness and HRQoL has been found in numerous studies [21].

Compared with native Germans, Turkish migrants rarely have adequate education or access to further education and therefore often work in places that are physically and psychologically detrimental to health. They often experience unemployment [22]. Data from the Statistical Office [20] confirm these findings. It shows that elderly Turkish people generally have a much lower monthly net-income and fewer assets than comparable elderly people without a migrant background. Studies have found that older people with a Turkish background do not have generally poorer health than native Germans, but they often suffer from ill health if they have experienced low SES and poor working conditions during their working life [23].

Wiking et al. [24] showed in a cross-sectional study of migrants from Poland ($n = 840$) that the risk of poor self-reported health could be explained by educational status and economic resources. Compared with Turkish migrants, who were mostly expected to stay in the host country only temporarily but decided to remain, most Polish migrants who come to Germany are regarded as ethnic Germans and are allowed to stay permanently [25]. Often they have received German citizenship and have a higher educational level relative to the low educational level of most Turkish migrants—which incurs a positive effect on their health. Polish migrants can face limited job opportunities because their educational qualifications are often not accepted.

3.2. Discrimination as a determinant of health and HRQoL

Studies exploring the relationship between discrimination and the health of migrants are rare or they are focused on migrants aged below 60 [26]. Psychological stress and mental health problems were reported for migrants relating to the process of acculturation and experiences of discrimination [23].

Turkish migrants in Germany may be more vulnerable to depression. Mohammadzadeh and Tempel [27] reported stressful situations, like trouble with agencies, intercultural conflicts and generational conflicts of older (aged 60 and above) Turkish migrants in their everyday life. The feeling of emptiness and its relation to poor psychological health was shown among first-generation (born in Turkey and migrated to Germany) and second-generation (born in Germany to migrant parents) Turkish migrants [28].

Psychological problems have been reported to play a major role in the health of Polish migrants. It has been shown, for example, that migrants (Polish as well as Turkish) experience stress as a consequence of the migration process and circumstances faced as part of their residence in Germany. These include deprivations and discrimination [29] during the adaptation process. This can have negative physical and psychological effects [30] and consequently decreases HRQoL. A study by Merbach et al. [31] shows that Polish migrants experience more depression and anxiety symptoms than the German host population. In this regard, the intention to assimilate socially and the perception of discrimination along with

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this intention have a significant influence on health, while adequate German language skills and success of assimilation in Germany contrast this negative picture. In particular, Polish migrants suffer from discrimination in their workplace and in the media, which report judgemental stereotypes [29].

3.3. Social networking as a determinant of health and HRQoL

Social networks act in health-promoting ways [19, 30], and social participation has a positive effect on the health behaviour of older people as it can improve compensating and coping strategies, help to establish self-esteem and decrease social isolation and depression [30].

The Federal Ministry for Family, Seniors, Women and Youth (Bundesministerium für Familie, Senioren, Frauen und Jugend, 2006) [32] particularly mentioned the potential of social networks of elderly Turkish migrants as a model for the elder generation. Social networking might not only be limited to social areas in the host country but also be extended to social spheres in the home country. Elderly Turkish and Polish migrants live 'transnational' [33, 34], which provides for them social contacts with different people, communities and organisations across national boundaries. In this respect, Krumme [34] differentiated between different categories of resources. These include resources like (grand-) children and friends as well as experiences of familiarity in both countries.

4. HRQoL of Turkish and Polish migrants and German natives – the study

Health is an important domain of quality of life (QoL). QoL consists of health domains such as the social, psychological and physical, in addition to the individual's objective health status [35].

The aim of this study was to examine and analyse comparatively the multidimensional and subjective health-related quality of life (HRQoL) of elderly Turkish and Polish migrants and German natives. This raised the question of whether differences between these groups are observable when it comes to HRQoL, and whether the determinants of age, gender, income, discrimination and social support do influence HRQoL.

The HRQoL model proposed by the Sf-36 [36] was of primary interest in this study. This model includes eight dimensions, i.e. physical functioning (PF), role physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role emotional (RE) and mental health (MH)) which are related to a physical (PC) and a mental (MC) health component (see **Figure 1**).

Two research questions and hypotheses were formulated for this study:

1. The first research question considered whether there are **differences in the HRQoL** of elderly Turkish migrants, Polish migrants and German natives. This was tested by checking for significant differences between the eight Sf-36 sum scores (calculation of sum scores for each of the eight dimensions, followed by statistical analyses (ANOVA and Bonferroni post hoc test). The hypothesis assumed that elderly Turkish as well as elderly Polish migrants show poorer HRQoL than elderly German natives.

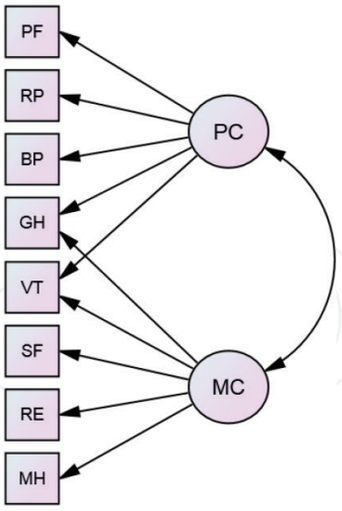

Figure 1. The Sf-36 model of health-related quality of life (HRQoL). Source: Ware et al. [36].

2. The second question and hypothesis focused on possible **predictors influencing the HRQoL** dimensions. The second research question was whether age, gender, income, discrimination and social support significantly influence the HRQoL (with respect to the Sf-36 dimensions) of elderly Turkish and Polish migrants and German natives and if so, what kind of impact they have (positive or negative). This was tested using multiple regression analysis, where the Sf-36 dimensions were the dependent and the five predictors were the independent variables. The hypotheses were as follows: (1) age and gender significantly influence HRQoL; (2) a low income level decreases HRQoL (the lower the income level, the poorer the HRQoL); (3) perceived discrimination decreases HRQoL (the greater the perceived discrimination, the poorer the HRQoL); and (4) social support increases HRQoL (the more social support received, the better the HRQoL).

5. Materials and methods

Approval for the study was granted by the University of Applied Sciences Hamburg (HAW) and by the ethics committee of the University of the West of Scotland (UWS).

5.1. Study participants

A cross-sectional study design, which included interviews with 304 persons (100 with Turkish, 103 with Polish and 101 with German participants) was used to answer the research questions. The interviews were conducted in the appropriate native languages (interviewers with German and Polish or Turkish language skills) in the period from February 2011 to August 2011 (Turkish participants) and in the period from October 2011 to June 2012 (Polish and German participants).

The participants in this study had to meet certain criteria for inclusion: two of the three groups (Turkish and Polish) had to have first-hand migration experience. The participants had to be

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at least 60-year old. The participants had to live in selected districts of Hamburg (named Wilhelmsburg, Billstedt, Altona-Nord, Altona-Altstadt and Harburg), because the proportion of migrants is particularly high in these districts. In the case of German participants, the surveys also took place in these districts to ensure greater comparability. The participants did not live in nursing or senior homes and did not require professional nursing care, because having professional support in daily life may result in a different health status and therefore a different HRQoL.

5.2. Recruitment of participants

The recruitment of participants included promotion in a brochure and on a website, but these proved ineffective. The most effective recruitment method was to request participation directly, face-to-face. Turkish participants were located in Turkish facilities, in mosques, in Turkish cafés and on the street, where they spend their leisure time. Polish migrants were recruited in two Catholic churches, in cultural facilities, in cafés, in Polish grocery stores and on the street. German participants were found in cafés, in grocery stores and on the street. In addition, participants were recruited using the snowball method (family members or friends of the interviewers and family members or friends of the participants). **Table 1** gives an overview of the recruitment process for Turkish migrants, Polish migrants and German natives.

	Group		
Recruitment place	**Turkish migrants** *n* **= 100**	**Polish migrants** *n* **= 103**	**German natives** *n* **= 101**
Relatives, acquaintances	49	21	5
On the street	24	0	63
Facilities:			
Intercultural institution, meeting place	7	10	10
Store, bakery, Café, market	2	4	17
Mosque	14	0	0
Religious community	4	0	0
Church	0	68	6

Absolute numbers of participants.

Table 1. Overview of recruitment process for each group.

5.3. Data collection

The Turkish study interviews were undertaken in different locations, at a friend's house or in the participants' homes. The Polish interviews mostly took place in the parish hall, in cultural facilities or at the participants' houses. The German participants were mostly interviewed on the street or in various public locations (e.g. bakery, café). To ensure that migrants with poor

	Group		
Interview venue	**Turkish migrants n = 100**	**Polish migrants n = 103**	**German natives n = 101**
Home	52	78	13
On the street	5	0	15
Facilities:	0	0	0
Intercultural institution, meeting place	5	9	11
Store, bakery, Café, market	26	5	62
Mosque	12	0	0
Religious community	0	0	0
Church	0	11	0

Absolute numbers of participants.

Table 2. Overview of interview venues for each group.

German language skills could adequately reply to the questions, all participants were given the opportunity to answer in their native language (Turkish, Polish or German). **Table 2** gives an overview of the locations where the interviews were carried out.

5.4. Study instruments

This study was carried out with a questionnaire composed of the Sf-36 [37], which measures the HRQoL, and questions concerning the interviewee's income, experience of discrimination and social support. In addition, sociodemographic and socio-economic data were reported.

The Sf-36 is a generic instrument with 36 items and eight dimensions, which are converted to values between 0 and 100 (sum scores), with 100 representing the highest and 0 the lowest level of HRQoL. The Sf-36 v.2 instrument, its components, dimensions and items are shown in **Table 3**.

Personal income was determined according to the self-reported income per capita. The following question was asked: 'What is your monthly net income (after taxes and health and social contributions)?' Income was reduced from an original eleven categories to five categories for better clarity (not specified/unknown, income <500, income 500–1500, income 1501–2500 and income 2501–4500).

Discrimination experiences were assessed by asking the question: 'Did you feel treated differently because of your origin in your neighbourhood or at work or when looking for employment?' and could answer with: <yes, several times>, <yes, once>, <never>, <not at all>.

The questionnaire on social support—short form (German: 'Fragebogen zur sozialen Unterstützung—Kurzform' (F-SozU K-14) is an instrument for measuring general, perceived

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Component	Dimension	No. of items	Items
Physical	Physical functioning (PF)	10	Vigorous and moderate activities, lift, carry groceries, climb several flights, climb one flight, Bend, kneel, walk mile, walk several blocks, walk one block, bath, dress
	Role physical (RP)	4	Cut down, accomplished less, limited in kind, had difficulty
	Bodily pain (BP)	2	Pain—magnitude, pain—interfere
	General health (GH)	5	Sick easier, as healthy, health to get worse, health excellent
Psychological	Vitality (VT)	4	Pep/life, energy, worn out, tired
	Social functioning (SF)	2	Social—extent, social—time
	Role emotional (RE)	3	Cut down time, accomplishes less, not careful
	Mental health (MH)	5	Nervous, down in dumps, peaceful, blue/sad, happy

Table 3. The Sf-36 instrument.

social support [38]. It includes 14 items asking about the social support experienced by the respondents. The content addresses emotional support (e.g. being liked by someone, to share feelings with others), practical support (e.g. having someone who takes care of the apartment, to borrow things from) and social integration (e.g. having friends, having similar interests to others). The results of the F-SozU K-14 are represented by scale values (total of items divided by the numbers of items). The higher these values are, the higher the interviewees perceive their level of social support.

5.5. Statistical analysis

All data were entered and analysed using SPSS version 21. Descriptive statistics were reported as means and standard deviations (means + SD), absolute frequencies and percentages. Statistical significance was set at an alpha level of $p < 0.05$.

The analysis of the Sf-36 data was based on sum scores for each of the eight dimensions. All dimensions were converted to values between 0 and 100 to permit easier comparisons. The scale scores can range from 0 to 100, with 100 representing the highest and 0 the lowest level of HRQoL. All eight dimensions were checked with quantile-quantile plots for normal distribution. As the assumption of normal distribution was confirmed, ANOVA was used to examine whether there were differences between the groups. The Bonferroni post hoc test was used to determine differences between Turkish migrants, Polish migrants and German natives.

The impact of age, gender, discrimination and social support on selected dimensions of the Sf-36 was calculated using multiple regression analysis.

6. Results

6.1. Participants' characteristics

The demographic characteristics of the sample are shown in **Table 4**. A total of 304 participants responded to the questionnaire (100 Turkish migrants, 103 Polish migrants, 101 German natives). The mean age of the study group was 68.3 + 6.9 (range 60–89). Thirteen Turkish participants did not provide their age. More than half (58.2%) of the sample was female and 41.8% was male. All Turkish participants stated Turkish as their native language. Polish participants named two options: first, language Polish and German, which means that they indicated Polish as their first native language and German as their second native language. Second, language German and Polish, which means that they indicated German as their first and Polish as their second native language.

	Turkish *n* **= 100**	**Polish** *n* **= 103**	**German** *n* **= 101**
Age (years)	*n* = 87		
M[1]	65.6	68.9	69.9
SD	4.7	7.3	7.4
Max	79	83	89
Citizenship (% (abs.))			
Yes	31.0% (31)	83.5% (86)	100% (101)
No	68.0% (68)	16.5% (17)	–
Not specified	1.0% (1)	–	–
Native language (% (abs.))			
1. Turkish	100 % (100)	–	–
2. Polish	–	67.0% (69)	–
3. Polish and German		13.6% (14)	–
4. German and Polish	–	2.9% (3)	–
5. German	–	16.5% (17)	100% (101)

Notes: M, mean; SD, standard deviation.

Table 4. Background demographics of study sample.

Table 5 shows socio-economic data of participants. 11.0% of the Turkish women and men stated that they never went to school. In contrast, all other participants had at least some school education. Polish participants attended school for more than 12 years (45.6%). More Turkish than Polish or German participants reported not having a formal professional education. Only Polish and German groups stated having a monthly personal income >2.501€, however, only 2 and 3 men reported this income.

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	Turkish *n* **= 100**	**Polish** *n* **= 103**	**German** *n* **= 101**
Education (% (abs.))			
Not at all/none	11.0% (11)	–	–
1–5 years	55.0% (55)	–	1.0% (1)
6–8 years	19.0% (19)	26.2% (27)	47.5% (48)
9–11 years	12.0% (12)	28.2% (29)	38.6% (39)
>12 years	3.0% (3)	45.6% (47)	10.9% (11)
Not specified	–	–	2.0% (2)
Professional education (% (abs.))			
Yes	19% (19)	–	78.2% (79)
No	64.0% (64)		21.8% (22)
Not specified	17% (17)		-
Personal income (% (abs.))			
<500€	13.0% (13)	21.4% (22)	21.8% (22)
500–1.500€	67.0% (67)	55.3% (57)	50.5% (51)
1.501—2.500€	6.0% (6)	14.6% (15)	17.8% (18)
>2.501€	–	1.9% (2)	3.0% (3)
Not specified/unknown	14.0% (14)	6.8% (7)	6.9% (7)

Table 5. Socio-economic data of study sample.

6.2. Assessment of the Sf-36 sum scores

The values were calculated for each national group and each health dimension [physical functioning (PF), role physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role emotional (RE) and mental health (MH)]. ANOVA results indicate significant differences in five of the eight dimensions. The mean scores of the Sf-36 dimensions for participants are presented in **Table 6**.

For PF Polish migrants scored significantly higher than German natives, for GH Polish migrants had higher scores than Turkish migrants, and vitality of the Polish group was higher than that of both other groups. In addition, RE as well as MH were higher in the German group than in the Turkish group but did not differ significantly from the Polish group.

6.3. Predictors of the Sf-36 dimensions

When the above-mentioned five predictors were included in the regression analysis for the migrant and native groups, the results for the dimensions were as follows:

Values	National group	Physical functioning (PF)	Role physical (RP)	Bodily pain (BP)	General health (GH)	Vitality (VT)	Social functioning (SF)	Role emotional (RE)	Mental health (MH)
Valid (*n*)/ missing (*n*)	Turkish	99/1	100/0	99/1	99/1	99/1	100/0	100/0	99/1
	Polish	103/0	103/0	103/0	103/0	103/0	103/0	103/0	103/0
	German	101/0	101/0	101/0	101/0	100/1	101/0	93/8	100/1
Mean (SD)	Turkish	66.44 (26.67)^{ab}	62.15 (31.52)	38.99 (27.99)	49.31 (20.14)^{a}	49.12 (20.26)^{b}	50.13 (9.65)	64.33 (32.91)^{a}	59.56 (19.97)^{a}
	Polish	73.64 (20.81)^{a}	67.66 (25.45)	35.63 (28.95)	56.06 (17.11)^{b}	60.19 (21.35)^{a}	48.91 (12.76)	72.65 (25.47)^{ab}	66.02 (19.06)^{ab}
	German	63.27 (23.41)^{b}	63.12 (26.32)	32.49 (27.40)	53.22 (20.24)^{ab}	44.06 (20.15)^{b}	47.40 (7.14)	78.49 (22.77)^{b}	67.40 (19.44)^{b}
ANOVA	F-value	5.131	1.137	1.337	3.135	16.324	1.823	6.503	4.595
	(Sign.[1])	*	n.s.	n.s.	*	***	n.s.	**	*

Summary of contents of SF-36 health scales.

Physical dimension: PF = ability to perform daily physical activities, e. g. walking, running, lifting, and other moderate physical efforts; RP = extent to which physical health limits work or daily activities. The higher the sum scores, the lower the extent to which physical health limits work/daily activities; BP = intensity of pain and its interference with normal activities. The higher the sum score, the lower the intensity of pain and its interference with activities (the absence of pain); GH = personal evaluation of general health status, presently and in the future.

Mental dimension: VT = personal evaluation of energy, etc.; SF = extent to which physical health or emotional problems interfere with normal social activities. The higher the sum score, the lower the extent to which physical health or emotional problems interfere with normal social activities; RE = extent to which emotional problems limit work or daily activities. The higher the sum score, the lower the extent to which emotional problems limit work or daily activities; MH = personal evaluation of mental health.

Significance; $p < 0.05$*, $p < 0.01$**, $p < 0.001$***, n.s. = not significant. ^{a,b} : same superscripts indicate that the means are not significantly different between the corresponding national groups; groups that do not share the same superscript are significantly different (Bonferroni, $p < 0.05$.

Table 6. Comparison of Sf-36 scores of (a) Turkish elderly, (b) Polish elderly, and (c) German elderly, including mean with SD and possible significant differences.

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Dimension	Group	Independent variable	Standard. coefficient (Beta)	T	Sig.
Physical functioning	Migrants ($n = 166$)	Age	-0.270	-3.517	0.001
		Gender	-0.169	-2.237	0.027
	Natives ($n = 93$)	Age	-0.279	-2.913	0.009
General health	Migrants ($n = 166$)	Income	-0.204	-2.552	0.012
	Natives ($n = 93$)	Social support	0.258	2.202	0.030
Vitality	Migrants ($n = 166$)	Gender	-0.180	-2.302	0.023
	Natives ($n = 92$)	Income	-0.358	-3.197	0.002
Role emotional	Migrants ($n = 167$)	Age	-0.160	--2.022	0.045
	Natives ($n = 85$)	Age	0.270	2.385	0.019
Mental health	Migrants ($n = 166$)	Gender	-0.159	-2.055	0.041
		Income	-0.164	-2.083	0.039
		Discrimination	0.165	2.055	0.041
	Natives ($n = 92$)	Income	-0.225	-2.195	0.031
		Discrimination	0.094	1.009	0.316
		Social support	0.383	3.664	0.000

Table 7. Multiple linear regression: significant variables predicting Sf-36 dimensions in migrants and German natives.

Age and gender were found to be significant predictors of physical functioning (PF) in elderly Turkish and Polish migrants: PF decreased with increasing age (the higher the age, the lower the PF scores). In addition, males showed better HRQoL compared to females. Income, perceived discrimination and social support did not significantly predict PF. In the German group, only age turned out to be a significant predictor of decreased HRQoL: PF decreased with an increase in age (the older the participants, the more their PF decreased).

Significant differences in general health (GH) were revealed between migrants and natives. This could be due to the fact that the significant (influencing) variables were different for the two groups. The analysis revealed a significant relationship between income and GH (the lower the income level, the poorer the GH status). In addition, the analysis only showed a significant relationship between social support and GH for the German natives only. In this case, GH increased in relation to an increase in social support in daily life.

With the elderly migrants gender played a role in vitality (VT): VT was found to be poorer in females than in males. Within the group of German natives, VT was found to be poorer in participants who reported having a low income level, which was in contrast to the migrant groups.

When the predictors were included in the regression analysis, a reduction in the emotional aspect (role emotional—RE) of HRQoL was associated with age (the higher the age, the lower the RE scores) in the migrant group. The responses related to age (age significantly influences

RE) was different in all groups, this is because age was positively associated with their RE (the older the person, the better the RE) in the German natives group.

Differences in mental health (MH) were found between German natives and migrants in terms of gender (**Table 7**). In this dimension, gender played a significant role in the migrant groups, with women showing poorer MH than men. Discrimination was found to predict MH in the group of migrants (the higher the perceived discrimination, the better their MH). Social support was found to improve the MH of German natives (the higher the level of social support, the better their MH). However, income was found to predict MH in both groups (the lower the level of income, the poorer the MH of the individuals).

7. Discussion

To the best of our knowledge, this was the first study assessing HRQoL among elderly Turkish and Polish migrants and German natives [39]. The hypothesis was that being a migrant is associated with disadvantages that lead to a poorer HRQoL, expressed by Sf-36 sum scores, compared to natives. However, the Sf-36 consists of eight dimensions and the hypothesis was confirmed in only two of the eight dimensions (elderly Turkish migrants show lower sum scores in RE and MH compared to German natives).

The findings that some dimensions of HRQoL of migrants are poorer than that of natives confirmed the findings from previous studies showing that the HRQoL of Turkish and Polish migrants was lower than that of native Germans in Physical Functioning [40]. The authors of this study suggested that this was related to limitations in daily activities that corresponded to increasing age. However, the authors also mentioned that elderly migrants face several health disadvantages related to working and housing situations and physical health problems due to their living situation relating to migration. Another study explained the moderate quality of life (QoL) of Turkish migrants compared to a Turkish population living in Turkey as the result of differences in age, marital status and education [6]. Berdes and Zych [8] showed better QoL of Polish American elderly compared with Polish elderly migrants. They explained this as being the result of 'vital aging' in an 'American social construct' (page 393), which implies better access to material goods and health care, and adherence to healthier life styles.

The current study showed lower average scores for the dimensions of role emotional and mental health within migrant groups. These dimensions cover mental health aspects. It was not possible to find the literature that discussed differences in these dimensions among migrants and native Germans and how to explain these. But it is assumed that differences are explained at least in part by culture. Differences can also be explained by the fact that different predictors are relevant for each of the national groups. Therefore, variables, such as the socio-economic status, may influence this multidimensional health construct.

The predictors age, gender, income, discrimination and social support were found to be significantly different between the different national groups.

Age was found to predict RE and PF in both the migrant and German group. Generally speaking, age had a negative impact on these two dimensions, with one exception: increasing age

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was associated with higher RE in the German group. Elderly populations were often found to show poorer health and HRQoL than younger age groups. Therefore, the results are partly consistent with other results showing that HRQoL decreases with age. These findings support those of Wiking et al. [24], which showed that the risk of poor self-reported health was primarily associated with age in the group of old migrants from Turkey and Poland. Lamkaddem et al. [41] found that the age of Turkish migrants was a significant predictor of physical health. Bayram et al. [6] compared the QoL of Turkish migrants living in Sweden and in their home country and attributed the moderate QoL of the Turkish migrants to age. Age differences in PF, BP and MH were also reported by Knurowski et al. [7]. This explains the differences in self-rated health with respect to bodily pain, vision abilities and depressive symptoms. The findings from this study also support the assumption of Morawa and Erim [42] as well as Wiking et al. [24] in that differences in QoL are not necessarily between migrants and non-migrants but rather between age and gender groups. One possible explanation for poorer HRQoL with increasing age could be that physical and mental health problems usually arise as part of the natural ageing process.

This study has shown that a significant negative association existed between gender and HRQoL. Women with a migration background were shown to be disadvantaged in relation to the dimensions of PF, VT and MH.

The finding that women's HRQoL is poorer than that of men has been confirmed in various studies. Bayram et al. [6] found the QoL of male migrants to be higher than that of female migrants, however, reasons for this were not given. Golicki et al. [43] showed that the percentage of Polish female respondents reporting problems such as pain, discomfort, anxiety and depression was considerably higher compared to Polish men. In another study, Turkish women living in Germany indicated poorer HRQoL than Turkish men living in Germany [42]. Wiking et al. [24] showed that the risk of poor self-reported health was five times higher for Turkish and Polish women living in Sweden.

One possible explanation for these gender differences could be that an understanding of the impact of migration on women's health has been neglected in the past. In addition, it was usually men who migrated for economic reasons. The migration of Turkish women to Germany was mainly the result of changes to German government policy allowing family reunification [44]. Therefore, these women did not have the same social status as men and for the most part arrived independently of their families. Another explanation could be that migrant women are particularly affected by health inequalities and inequities [45].

The link between a low SES and HRQoL has rarely been investigated in previous studies [46]. But, the current trends suggest that the poorer health and HRQoL of migrants compared to Germans is because they are disadvantaged in terms of their SES. In this study, income was the only significant negative predictor of GH and MH in Turkish and Polish migrants.

This presents a challenge in the context of migration studies because a low socio-economic profile per se does not result in poor HRQoL. Rather, a low SES correlates with other determinants of migration, e.g. poor working conditions, and low educational level, which can influence HRQoL. This present study supports the hypothesis that the HRQoL of migrants

is poorer due to low income in only two of the eight dimensions. This indicates that income alone cannot be taken as a sole predictor of HRQoL.

It was shown that discrimination only had an influence on the MH of the Turkish and Polish migrants. Discrimination is often experienced by minority groups [47] and several studies have shown that it has a negative impact on the HRQoL of migrants. Morawa and Erim [42] as well as Wiking et al. [24] found this for both Turkish and Polish migrants. In addition, self-rated discrimination was associated with an increased number of unhealthy days, disability days, poor self-reported health and poor HRQoL among diverse groups (Whites, Blacks, Latinos) [48]. Wang et al. [49] recommended reducing discrimination in order to improve QoL of migrants.

In contrast, social support was reported to have a positive effect on the mental health and HRQoL of migrants because of the determinants influencing their health in a positive way, such as having strong family and ethnic networks. Past studies of Turkish populations have shown that social support can have a protective effect when it comes to affective disorders and stress and consequently to HRQoL [50].

The current study supported the positive influence on HRQoL for only the dimension of GH in the German group. This is in contrast to results from another study, which showed that social support was a significant predictor of HRQoL [51].

In summary, the results of this study were somewhat different from those of other previous studies. The assumptions were that low income and discrimination reduce HRQoL and social support improves HRQoL. Since the hypotheses could not be fully supported and considering the lack of explanatory research on this topic, this cannot be clarified in the context of this study. Instead, it must be assumed that the predictors influencing the HRQoL of Polish migrants, Turkish migrants and German natives either negatively or positively are different from the ones identified in this study.

This is the first study that offers relevant insights into the HRQoL of elderly Turkish and Polish migrants and German natives. The results have theoretical and practical implications for the health and HRQoL of migrants: the results reported should be investigated in other studies with larger study samples and other (minority) groups. In particular, the migration-specific differences in HRQoL constructs should be considered by policy makers, researchers and health practitioners. The differences in this study show that it is necessary to consider group-specific factors when developing prevention and health promotion strategies. The results have some implications for policy makers as health promoting initiatives should not only address the disadvantages of migrant groups, but should consider their resources. This approach could lead to a strengthening of migrant's health and HRQoL.

8. Limitations of the study

There are some limitations to this study, which should be considered when interpreting the results. Firstly, this study used a cross-sectional study design and this restricts the inter-

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pretation of the impact of migration on the HRQoL. A longitudinal approach would have offered more data relating to changes over time, but it was not possible to employ this type of design within the economic constraints of this study. Secondly, it should be borne in mind that this sample of Turkish and Polish migrants consists of elderly migrants living in specific areas of Hamburg/Germany and therefore the sample cannot be representative of all migrants in the whole city or even country. Therefore, the generalisation of the results is limited to these specific groups. Thirdly, it cannot be excluded that some of the Polish and Turkish migrants were reluctant to participate: the interviews were limited to the individuals found in public places and by friends or family members. This may have led to a selection or sampling bias. Fourthly, despite care being taken with the translation of the Sf-36 questionnaire there is the possibility that some items were interpreted differently by the three groups because of cultural interpretation of items. This potential limitation may have restricted the meaning of comparisons between the different cultural groups. Finally, the research team cannot discount the fact that, in spite that all the interviewers were native speakers of the relevant language, some questions may have been difficult to understand and led to misinterpretation.

9. Conclusion

This study suggests that being a migrant does not necessarily entail poor HRQoL, individual differences within the whole concept of HRQoL were evident. Turkish migrants' perceptions of their own HRQoL were only worse than those of German natives in RE and MH, but the perceptions of Polish migrants were superior in PF and VT. Migrants' health is often seen from a deficit or problem-based perspective. However, the superior HRQoL of the Polish group, in two of the HRQoL dimensions, would imply the search for existing personal and social protective resources. We recommend, therefore, that future studies should adopt both, a deficit or problem-based approach as well as a strengths or resources-based approach when considering the perspective of migrants' health and HRQoL. Studies should aim to identify the range and role of possible mediators of HRQoL that arise from migration status and identify the underlying social determinants of the different HRQoL dimensions.

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