

## GK SOCLIFE WORKING PAPERS SERIES

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5  
December 2010

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Exploring the subjective health status of first and second  
generation Turkish immigrants in Germany

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# **The influence of immigrant status on health**

## **Exploring the subjective health status of first and second generation Turkish immigrants in Germany**

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### **Abstract**

Using data from the Generations and Gender Survey (GGS), the health status of Turkish immigrants in Germany is observed in this paper. The GGS includes approximately 10,000 German natives (surveyed in 2005) and 4,000 Turkish immigrants (surveyed in 2006) living in Germany. Logistic regression models are estimated to compare the health of first and second generation Turkish immigrants to that of German natives. Differences in health are clear and, contrary to the expectations derived from existing literature, Turkish immigrants do not seem to be in worse health than the native German population when different variables are taken into account. Especially when socio-economic status and coping resources are considered, migrant status has no significant effect on the subjective health status. Furthermore, Turkish immigrants are, to some extent healthier than their German counterparts when variations between East and West Germany are taken into account. Additionally, separate models for Turkish immigrants and German natives are estimated, and it can be shown that Turkish immigrants who have lived in Germany for a shorter period of time (as it is the case in East Germany) have a health advantage.

*Keywords: Turkish immigrants, subjective health status, Germany, Generations and Gender Survey, morbidity*

Whereas the findings on immigrants' mortality are more distinct and some researchers could show that they die at more advanced ages (Abraido-Lanza et al., 1999; Uitenbroek and Verhoeff, 2002; Razum et al., 2000; Luy, 2007 among others), very little is known about the health status of immigrants in general, and Turkish immigrants in particular. It is assumed, and has been proven to some extent, that especially healthy and young people migrate from one country to another. Furthermore, migration is postponed or discarded in cases of (severe) illness. Due to this selection process, termed the *healthy migrant effect*, immigrants should have an especially good health status compared to the native population in the home and host country, especially shortly after migration. Additionally, the health status of immigrants may improve even more in the host country, assuming they can benefit from better access and more effective medical care. Certain diseases may, for example, be more easily and widely curable in the host country than in the home country. Similarly, degenerative diseases may manifest later in life because they are often related to a certain lifestyle (in the host country) and take time to become debilitating (see Razum and Twardella, 2002; Razum and Zeeb, 2004).

Besides the healthy migrant effect and the possible indications of a health advantage, a worsening health status of immigrants compared to the native population is also discussed in the existing literature (for a literature review, see Nielsen and Krasnik, 2010). With prolonged residence, the health advantage in the host country may be lost, since the health status of immigrants possibly converges to the level of the native population (McDonald and Kennedy, 2004). This is a consequence of adaptation in various health-related fields, such as eating habits. The speed of this adaptation process certainly varies for different people (Biddle et al., 2007). Beyond adaptation to the native population, the health status of immigrants could actually worsen due to lower socio-economic status, fewer coping resources, barriers to accessing medical care, or migration stress. For a short overview of the different factors that play a role in determining the health status of immigrants, see Schenk (2007).

In the existing literature on Germany, no strong evidence could be found for either of the theoretical considerations. However, some results indicate the presence of a healthy migrant effect. Ronellenfitsch and Razum (2004), for example, observed the health status of immigrants from Eastern Europe: while their socio-economic status improved over time, their satisfaction with health status simultaneously declined steeply. Using data from the German Socioeconomic Panel Study, Lechner and Mielck (1998) also found deteriorating health status with increased time of residence for immigrants. Thus far, very little is known about the health status of immigrants in general, and Turkish immigrants in particular; however, very different health outcomes may be discovered depending on the group of immigrants studied and their specific time of residence.

The first step would be to observe whether differences between German natives and Turkish immigrants with regard to the level of health actually exist. This seems to be a simple question, but, as indicated, it has not been clearly answered in previous research. In this respect, we want to evaluate whether there is an independent effect of migrant status on health. The second step is to examine whether the determinants influencing the health status vary for Germans and Turkish immigrants. First and second generation Turkish immigrants are analyzed separately throughout the paper. As a third step, closely related to the topic of the *healthy migrant effect*, first generation Turkish immigrants are observed in more detail, since only this group experienced the process of migration itself. Here especially, the time spent in Germany (permanent residence) will be a focal point since it may influence the health status of the Turkish immigrants (see Acevedo-Garcia et al., 2010; Kotwal, 2010).

## Methods

For these analyses, data from the German Generations and Gender Survey (GGS) is used. This survey was carried out by the German Federal Institute for Population Research. In 2005, approximately 10,000 German residents, aged 18 to 79, were interviewed face-to-face (computer assisted). In 2006, an additional sample of about 4,000 Turkish nationals who were permanently living in Germany was surveyed. Both samples were randomly drawn in multiple stages from official registers (foreigners' registration office for the Turkish immigrants) and the obtained cases were compared with official statistics with regard to the age and sex structure of the sample, as well as the regional distribution of the cases. Divergences from the official statistics were rather small (for more information on the sample structure, see Ruckdeschel et al., 2006; Ette et al., 2007). For Turkish immigrants a translated questionnaire was available if needed.

The GGS was not explicitly constructed to answer health-related research questions; therefore some potentially relevant information may be missing. Health-related behaviour like smoking, alcohol consumption, or physical activity, and information on the access to medical care was not obtained. Some results on the differences in health-related behaviour between immigrants and German natives can be found in Razum et al. (2008). Although differences in access to medical care for natives and immigrants exist (Fassaert et al., 2009; Razum et al. 2004), care is assured for everyone in Germany, at least on a legal basis. The high number of Turkish immigrants surveyed and the available information on subjective health status, socio-economic status, health burdens, and coping resources makes the GGS one of the best data sets available to answer the research questions dealt with here.

Both data sets (of 2005 and 2006) are combined, and the analyses are carried out only for respondents who were born in either Germany or Turkey. Individuals with a first generation Turkish migrant background in this respect are defined as those who were born in Turkey. Second generation immigrants are those whose parents (at least one) were born in Turkey but who themselves were born in Germany. In the data set, 8,615 Germans, 2,736 first generation Turkish immigrants, and 612 second generation Turkish immigrants remain for further analyses (see Table 1). Turkish immigrants are observed separately for the first and second generation, since both groups differ in various aspects. Only the first generation experienced the process of migration and living in two different societies. The second generation tends to be more connected to the host society, although research on the second generation of immigrants is relatively new and rare (see Crul and Vermeulen, 2003).

As stated earlier, the dependent variable is the subjective health status, which is originally measured on a five-point scale. Respondents declared whether their health status was very bad, bad, moderate, good, or very good. For our analyses, we recode these answers into a binary variable [1-(very) good; 0-moderate/(very) bad]. Putting aside some minor shortcomings of this indicator (see Huisman and Deeg, 2010), there are clearly some advantages of using it. Primarily its strength lies in its simplicity: it is easily understood. The subjective health status is also a good predictor of mortality (Mossey and Shapiro, 1982; Idler and Benyamini, 1997; Helmert, 2003; Maschewsky-Schneider, 2004) and it is closely related to the objective health status (Jylhä, 2009). Beyond this, there is also empirical evidence indicating that the subjective health status is comparable across different ethnic groups (Chandola and Jenkinson, 2000).

In reference to a model by Elkeles and Mielck (1997) and Mielck (2000) different dimensions of health inequality can be identified: socio-economic status, health burdens, coping resources, access to medical care, and health-related behaviour. The first three dimensions can be depicted using data from the GGS. Additionally, age, gender, and region (East/West Germany) are included in the analysis as control variables. Region is included to elaborate whether migrant status has a different effect on health in East and West Germany. Since migration to East Germany has been occurring for a shorter period of time, Turkish immigrants may have a better health status there, which would hint towards a healthy migrant effect. All relevant variables can be found in Table 1.

Socio-economic status is measured by educational attainment because it seems to be a stronger and more consistent predictor of health than income or occupational status (Winkleby et al., 1992). We will observe what effects, if any, low and high educational levels have on the health status of the respondents (in reference to a low educational level). A medium educational level is equivalent to the German *Mittlere Reife* (about 10 years of schooling); a high educational level indicates an *Abitur* or *Fachhochschulreife* (at least 12 years of schooling). Additionally, the unemployment status (yes or no) and the kind of employment contract the respondent has (unlimited: yes or no) are indicators of socio-economic status. Previous research suggests that unemployment has a negative effect on health (e.g. Grobe and Schwartz, 2003); additionally, the kind of employment contract can be used as an indicator for job strain, which is also an indicator of health (Karasek, 1979; Theorell, 2000). For additional results on the interrelation of subjective health status and physical and psychosocial working conditions, see Bauer et al. (2009).

Elkeles and Mielck (1997) differentiate between health burdens and coping resources, but those variables seem to fall into the same category. This means that if a certain coping resource is missing, it becomes a health burden, and vice versa. We will therefore classify the relevant variables as coping resources. They are represented by five different variables. Satisfaction with the house/flat is used as a proxy variable for the respondents housing conditions [measured on a scale from 0 (not satisfied at all) to 10 (very satisfied)] (on the interrelation of the general satisfaction with housing and more detailed housing variables, see Davis and Fine-Davis, 1981). Housing conditions affect health both directly and indirectly (Shaw, 2004; Lowry, 1991), and poor housing may also negatively influence psychological well-being (Fuller-Thomson et al., 2000). It is assumed that adequate housing conditions affect health positively and they are therefore considered a coping resource.

The regular attendance of religious services is also considered a coping resource because it tends to increase social support, results in healthier lifestyles, and lowers stress levels (George et al., 2002). It has also been found to decrease the mortality risk (Strawbridge et al., 1997). In this respect, we measure an indirect effect of religiosity on health. For a broader discussion of the association of religion/religious attendance and health, see Ellison and Levin (1998) or Williams and Sternthal (2007). As a third variable, social support is measured by asking respondents whether they have enough people around they can count on when they are having problems [0-does not apply; 1-applies more or less/does apply]. Social support and networks function in various ways to influence the health status of a person (see Berkman, 1984). Jungbauer-Gans (2006) suggests that with an increasing range of the social network comes better health.

Another indicator for coping resources is the perceived control over various aspects of life. Respondents were asked to what degree they feel that they are in control of finances, work, residence,

health, and family. They were asked to rate their feeling of control on a four-point scale: no, little, relatively strong, or very strong control. The mean of all five variables is used to measure a general perception of life control and a sense of coherence. It seems as though people who feel that they are in control of their lives have a better level of health than those that feel that they have little or no control (Geyer, 1997). Finally, for measuring trust, respondents were asked whether one can trust others (yes or no). Giordano and Lindstrom (2010) could identify a deteriorating subjective health status when the respondent felt unable to trust others.

The ability to speak German, based on self assessment [1 (not at all) to 5 (very well)], is included in the multivariate analysis for first and second generation Turkish immigrants. Previous research shows that not knowing the language of the host society increases the level of stress and has a negative effect on the health status of immigrants (Ding and Hargraves, 2009). The time of residence in Germany is added for first generation Turkish immigrants to analyse whether the immigrant population adapts to the native population over time. Because only cross-sectional data is available, the effect of residence time can only be tested by evaluating whether respondents living in Germany for a longer period of time are more similar to the native German population (i.e., no differences in health status) than those who have been living there for a shorter time. In this sense, the healthy migrant effect will be tested by observing whether the health status varies in East and West Germany and with respect to the time of residence.

As a first step, some descriptive analyses are performed to get a glimpse of the health status of Turkish immigrants and German natives. Later, logistic regression models are carried out. Two steps are taken here: first, a regression model for all respondents is estimated, including two variables that identify the migration background (first and second generation), in order to evaluate whether differences in the health status between Germans and Turkish immigrants can be found. A stepwise procedure is used to identify the variables that have an especially strong influence on health status. Second, separate models for all three groups (Germans, first generation Turkish immigrants, and second generation immigrants) are calculated to observe whether the factors determining the health status vary across the groups.

## **Results**

### *Descriptive Results*

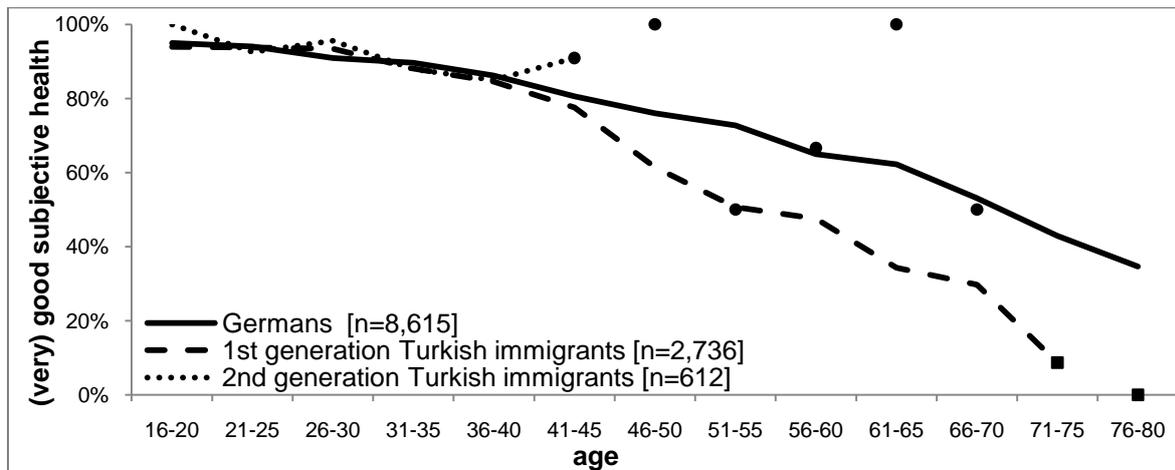
In Table 1, all mean values for the relevant metric variables and proportions for the binary variables are indicated. Whether observing the distribution of respondents across the original five-point scale or the generated binary variable, the subjective health status barely varies for the first generation of Turkish immigrants and German natives. 75% of the German natives and Turkish immigrants report a good or very good health status. However, since the Germans in the data set are, on average, six years older than the Turkish population and keeping in mind that individual health status worsens with age, it seems as though Germans in the same age group are healthier than the Turkish immigrants. Their rather young age (29 years on average) may also be the reason why the second generation immigrants indicate an extraordinarily good health status (92%). To take those age differences into account, Figure 1 represents the subjective health status of each group by age. Up to age 45, first generation immigrants and native Germans seem to have approximately the same level of health. Beyond that age, first generation Turkish immigrants are less healthy than Germans. Second generation Turkish immigrants seem to be at least as healthy as German natives.

**Table 1** Relevant variables for the analysis of the subjective health status of Germans and persons with Turkish migrant background in the GGS (mean values or distribution)

		Germans	Turkish Immigrants: First Generation	Turkish Immigrants: Second Generation	
<b>Dependent Variable</b>					
	(Very) good health status	74.7%	74.9%	92.2%	***
	[R: moderate/(very) bad]				
	East Germany	67.6%	88.0%	100.0%	
	West Germany	76.6%	74.4%	92.0%	
<b>Independent Variables</b>					
graphics	Age [in years]	46.8	40.6	28.6	***
	Female * [R: Male]	53.1%	47.3%	47.9%	*
socio-demographics	Living in West Germany *	79.1%	96.1%	98.4%	***
	[R: East Germany]				
socio-economic status	Ended school without a degree *	1.2%	24.4%	4.2%	***
	Low/other educational level *	37.2%	52.4%	46.4%	***
	Medium educational level *	34.7%	13.4%	28.3%	***
	High educational level *	26.9%	8.9%	20.8%	***
	Unemployed *	8.0%	15.3%	13.1%	***
	[R: employed, not on the labour market]				
	Unlimited employment contract *	38.2%	30.9%	36.3%	***
	[R: limited/no employment contract]				
coping resources	Satisfaction with the flat/house	8.1	7.1	7.0	***
	[0-not satisfied at all, 10-very satisfied]				
	Religious attendance	0.7	1.4	0.9	***
	[0-never/seldom, 3-frequently]				
	Social support *	91.9%	88.1%	92.0%	***
	Control over life	2.8	2.7	2.7	**
	[1-not at all, 4-very strong]				
	Trust towards other people	34.8%	27.1%	24.3%	***
	- one can trust most people*				
- cautious towards other people *	62.3%	70.9%	71.2%	**	
- no answer/don't know *	2.8%	2.0%	4.4%	**	
Ability to speak German [1-not at all, 5-very good]		3.5	4.6		
Time of residence [in years]		21.6			
* dichotomous variable [0 - no, 1 - yes]		n=	<b>8,615</b>	<b>2,736</b>	<b>612</b>
significantly different from native Germans: * p<0.05 ** p<0.01 *** p<0.001 two-tailed t-test,					
R: reference category					

Source: GGS 2005/2006, own calculations

**Fig. 1** Subjective health status for first, second generation Turkish immigrants and Germans, by age group



Source: GGS 2005/2006, own calculations (single dots: less than 5 cases)

When observing the descriptive results (Table 1) in more detail, statistically significant differences between Turkish immigrants and German natives can be found. Only 38% of the Germans have either low or no formal education, compared to 77% of first generation and 51% of second generation Turkish immigrants. The unemployment level is also higher for Turkish immigrants (15% first generation, 13% second generation) than for Germans (8%). Furthermore, Turkish immigrants seem to be less satisfied with their flat/house; they also feel that they have less control of their lives and are less trusting of other people than are German natives. Given that these risk factors influence the health status of German natives and Turkish immigrants alike, this higher prevalence of potential risk factors in Turkish immigrants suggests a higher tendency for them to rate their health status as moderate or bad. In the following multivariate models, we analyze whether this is the case and whether the chosen variables play a role in determining the health status of Turkish immigrants and Germans to the same extent.

It should also be noted that only 4% of first generation Turkish immigrants and 2% of second generation immigrants surveyed in the GGS live in East Germany (see Table 1). This underscores the fact that immigration has been occurring for different durations and is due to other causes in both parts of Germany. First generation Turkish immigrants in East Germany have been permanent residents of Germany for an average of 11 years, and 22 years in West Germany (results not shown). The descriptive results point to a need for further evaluation if the health status of Turkish immigrants varies between East and West Germany. On a descriptive level, the following results can be found (see Table 1): 88% of first generation Turkish immigrants who are currently living in East Germany report a (very) good health status. Comparatively, only 68% of East German natives report the same. In West Germany, differences between Turkish immigrants and German natives are rather small: 77% of the Germans and 74% of first generation Turkish immigrants state that their health status is (very) good. Because the number of second generation Turkish immigrants is rather small, especially in East Germany, they are not investigated in more detail.

### *Multivariate Results*

In order to evaluate whether differences in health status between Germans and Turkish immigrants exist, logistic regression models are carried out, they are estimated stepwise (Table 2). First, socio-demographic factors are inserted into the model, then proceeding variables indicating socio-economic status (Model 2), and coping resources (Model 3) are added. In the last model (4), an interaction effect of region and migration background is included since the descriptive results indicate that the health status varies for Turkish immigrants in East and West Germany. Taking only socio-demographic values into account (Model 1), first generation Turkish immigrants seem to report worse health than the native German population. In fact, the chance of having a good health status is 44.5% smaller for them as for the German natives. By adding variables that are related to socio-economic status and coping resources, the significance of the effect vanishes. When the interaction term (migrant background, first generation\*region) is added in the final model, a positive effect of first generation Turkish migrant background on subjective health status evolves. Because the interaction term and both main effects are significant, first generation Turkish immigrants in East Germany are significantly healthier than East German natives. As the descriptive results have already indicated, we also find that Turkish immigrants in West Germany vary marginally from West German natives. When separate models for East and West Germany are estimated (results available from the author upon request), the effect of first generation migrant status on health is positive throughout the models in East Germany. Hence, Turkish immigrants are especially healthy in East Germany – regardless of the group of variables that is controlled for. For West Germany the same pattern is detected as it is for the general population (East and West Germany combined). For the second generation, inserting an interaction term of region and migrant status is futile, since all respondents in East Germany indicate either a good or very good health status (see Table 1).

To further evaluate whether regional differences exist for first and second generation Turkish immigrants (and German natives), and in which respect the variables determining their health status vary, separate regression models are estimated for Germans and Turkish immigrants. In Table 3, three models are displayed, one for each group. For first and second generation Turkish immigrants, a variable indicating the ability to speak German is added to the model. Additionally, for the first generation, the time of residence is included to evaluate whether hints for a healthy migrant effect can be found.

**Table 2** Logistic regression model to explain the subjective health status, constructed stepwise

	Model 1		Model 2		Model 3		Model 4	
Nagelkerke R <sup>2</sup>	.224		.260		.298		.298	
<b>n= 11,963</b>	<b>Odds</b>	<b>CI</b>	<b>Odds</b>	<b>CI</b>	<b>Odds</b>	<b>CI</b>	<b>Odds</b>	<b>CI</b>
Turkish migrant background first generation <sup>1</sup>	.555***	.495-.622	.925	.810-1.057	.974	.847-1.120	2.113 *	1.123-3.999
second generation <sup>1</sup>	.959	.700-1.312	1.326	.964-1.825	1.461 *	1.057-2.020	1.456 *	1.053-2.012
Age	.938***	.935-.941	.945***	.942-.948	.940***	.936-.943	.940***	.936-.943
Female <sup>2</sup>	.880**	.803-.965	.932	.847-1.025	.930	.844-1.025	.936	.849-1.032
Living in West Germany <sup>3</sup>	1.489***	1.319-1.681	1.504***	1.326-1.707	1.402***	1.228-1.600	1.461***	1.276-1.674
No education <sup>4</sup>			.616***	.513-.741	.649***	.538-.783	.649***	.537-.783
Medium educational level <sup>4</sup>			1.702***	1.510-1.919	1.577***	1.396-1.782	1.583***	1.401-1.789
High educational level <sup>4</sup>			2.323***	2.024-2.666	1.981***	1.720-2.282	1.980***	1.719-2.282
Unemployed <sup>5</sup>			.642***	.549-.750	.745***	.635-.873	.751***	.640-.881
Unlimited employment contract <sup>6</sup>			1.406***	1.256-1.573	1.306***	1.165-1.464	1.313***	1.171-1.472
Satisfaction with the flat/house					1.092***	1.069-1.115	1.092***	1.069-1.115
Religious attendance					1.086***	1.034-1.140	1.087***	1.035-1.141
Social support <sup>7</sup>					1.502***	1.293-1.744	1.503***	1.294-1.745
Control over life					1.506***	1.414-1.604	1.503***	1.411-1.601
Trust towards other people – one can trust most people <sup>8</sup>					1.376***	1.235-1.534	1.376***	1.235-1.533
– no answer/don't know					.897	.667-1.205	.898	.668-1.207
Interaction effect region*migration background, first generation							.447 *	.236-.847

\* p<0.05 \*\* p<0.01 \*\*\* p<0.001  
dependent variable: subjective health status [1-(very) good, 0-moderate/(very) bad], CI: confidence interval

Reference categories: <sup>1</sup>German natives, <sup>2</sup>males, <sup>3</sup>living in East Germany, <sup>4</sup>low educational level, <sup>5</sup>employed/not on the labour market, <sup>6</sup>limited/no employment contract, <sup>7</sup>no support, <sup>8</sup>cautious towards other people

Source: GGS 2005/2006, own calculations

**Table 3** Logistic regression model to explain the subjective health status, separately for Germans and first/second generation Turkish immigrants

	Model 1 - Germans		Model 2 – Turkish Immigrants: First Generation		Model 3 – Turkish Immigrants: Second Generation	
Nagelkerke R <sup>2</sup>	.288		.358		.179	
	<b>Odds</b>	<b>CI</b>	<b>Odds</b>	<b>CI</b>	<b>Odds</b>	<b>CI</b>
Age	.945 ***	.941-.949	.927 ***	.916-.939	.935 **	.896-.975
Female <sup>2</sup>	1.024	.916-1.145	.698 **	.554-.880	.737	.362-1.501
Living in West Germany <sup>3</sup>	1.458 ***	1.271-1.673	1.060	.545-2.061	.000	.000
No education	.509 **	.321-.807	.888	.698-1.129	.760	.234-2.470
Medium educational level <sup>4</sup>	1.629 ***	1.426-1.860	1.411	.991-2.010	1.336	.613-2.910
Hi High educational level <sup>4</sup>	1.972 ***	1.696-2.293	1.940 **	1.185-3.174	1.892	.612-5.851
Unemployed <sup>5</sup>	.746 **	.607-.917	.791	.590-1.060	.852	.346-2.097
Unlimited employment contract <sup>6</sup>	1.310 ***	1.147-1.496	1.391 *	1.073-1.804	1.159	.537-2.501
Satisfaction with the flat/house	1.101 ***	1.072-1.131	1.068 ***	1.029-1.109	1.112	.999-1.239
Religious attendance	1.089 **	1.024-1.159	1.136 **	1.040-1.240	.811	.609-1.080
Social support <sup>7</sup>	1.470 ***	1.228-1.760	1.665 ***	1.239-2.236	2.571 *	1.104-5.985
Control over life	1.474 ***	1.370-1.585	1.528 ***	1.332-1.753	1.541	.991-2.395
Trust towards people <sup>8</sup>	1.464 ***	1.294-1.657	1.030	.811-1.308	2.883 *	1.043-7.967
– one can trust most people						
– no answer/don't know	.944	.677-1.317	.766	.371-1.583	1.719	.315-9.375
Ability to speak German			1.344 ***	1.188-1.521	1.135	.728-1.770
Time of permanent residence in Germany			.972 ***	.958-.986		
	<b>n=</b>	<b>8,615</b>	<b>2,736</b>		<b>612</b>	
* p<0.05 ** p<0.01 *** p<0.001						
dependent variable: subjective health status [1-(very) good, 0-moderate/(very) bad], CI: confidence interval						
Reference categories: <sup>2</sup> males, <sup>3</sup> living in East Germany, <sup>4</sup> low educational level, <sup>5</sup> employed/not on the labour market, <sup>6</sup> limited/no employment contract, <sup>7</sup> no support, <sup>8</sup> cautious towards other people						

Source: GGS 2005/2006, own calculations

Comparing the overall model (including all variables except the interaction term) in Table 2 (Model 3) and the individual models for German natives and immigrants in Table 3 leads to the conclusion that the factors determining the health status of the respondents in the overall model seem to be quite similar in the individual group models. Nevertheless, some disparities can be found: gender seems to be relevant for the health status of first generation Turkish immigrants only. Turkish women have a significantly worse health status than their male counterparts. Furthermore, the effect of unemployment diminishes when the groups are observed separately; this factor is only significant for German natives (Table 3, Model 1) and has a negative effect on health. The inexistence of a significant effect of region for first generation Turkish immigrants may simply be caused by the low number of cases in East Germany. As the interaction effect in Table 2 indicates, Turkish immigrants in East Germany are extraordinarily healthy, whereas German natives in East Germany are especially unhealthy. German natives and Turkish immigrants in West Germany are in between and have approximately the same level of health when all relevant variables are controlled for.

Concerning the variables that are specifically linked to the migration process, two strongly significant associations can be found. Being able to speak German has a positive effect on health: on a five-point scale [1 (not at all) to 5 (very good)] the chances of a good health status increases by 34.4% when the language proficiency improves by just one category. Also, the effect of residence time on health is significant, even while simultaneously controlling for age. With each additional year of residence in Germany, the chance of having a good health status decreases by 2.8%.

## **Discussion**

Similar to the findings in the literature, the descriptive results of our study are rather inconclusive. Observing the subjective health status, we find that up to the age of 45 first generation Turkish immigrants and Germans have about the same level of health, but beyond that age group, first generation Turkish immigrants are less healthy (see Figure 1). Evaluating the health-related determinants, there is a higher prevalence of potential risk factors in the group of Turkish immigrants (see Table 1), which suggests that immigrants rate their health status worse than does the native population.

The multivariate results are more explicit. When different factors that influence health are controlled for, Turkish immigrants are at least as healthy as their German counterparts. Socio-economic status plays an especially important role here because the previously negative effect of migrant status becomes insignificant when it is included in the analysis. When considering the individual coping resources, the effect of migrant status on health is reduced even further. Hence, one important finding of this study is that there is no effect of migrant status on health itself. This means that the differences between Turkish immigrants and German natives on a rather superficial descriptive level are simply a matter of differences in socio-economic status and the allocation of resources.

Another result of the current study is that the determinants of the subjective health status do not vary for Turkish immigrants and German natives. As the complex model by Elkeles and Mielck (1997) already indicates, a vast number of variables influence the health status of immigrants and Germans in the same way. When focusing on first generation Turkish immigrants a negative effect of residence time on health and an especially good health status of Turkish immigrants in East Germany is observed. Those results indicate a healthy migrant effect, which is in line with previous findings (Ronellenfisch and Razum, 2004). It seems as though Turkish immigrants living in Germany for shorter periods of time, as they have in East Germany, are particularly healthy, whereas Turkish immigrants who have resided in Germany (especially in West Germany) for a longer period of time are more similar to the German native population. This is an interesting finding that should be evaluated in more detail with data that includes more immigrant cases in East Germany and allows for observing variations in health status over time (longitudinal data). This kind of data is currently not available.

Also, as this study shows, Turkish immigrants who are currently living in Germany are still relatively young. Since a moderate/bad health status becomes more prevalent later in life, future research will be able to focus more on this aspect, and determine whether older Turkish immigrants after living in Germany for a longer period of time, are especially unhealthy; and if the effect is stable over time. At this point, we cannot conclude with certainty whether the detected effects are merely a question of different immigrant cohorts being observed or if the health status actually deteriorates. In this sense, the study at hand can be seen as a first step to learn about the health status of Turkish immigrants in Germany. Additional research is necessary to confirm and expand the results found here.

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