

Individuals with migration background have a different profile of cardiovascular risk factors compared to German residents – results from the STAAB cohort study

Felizitas A Eichner^{1,2}, Theresa Tiffe^{1,2}, Caroline Morbach^{1,3}, Götz Gelbrich^{1,3}, Vladimir Cejka¹, Renate Mattern¹, Sabine Căsar¹, Martin Wagner^{1,3}, Peter U Heuschmann^{1,3,4}, Stefan Störk^{1,2}
¹ Comprehensive Heart Failure Center, University of Würzburg, Germany, ² Institute for Clinical Epidemiology and Biometry, University of Würzburg, Germany,
³ Dept. of Medicine I, University Hospital of Würzburg, Germany, ⁴ Clinical Trial Center, University Hospital Würzburg

BACKGROUND

- About 20% of the German population have a migration background
- Differences in traditions and religious habits might affect health behavior and could thus lead to different prevalences of preventable cardiovascular risk factors (CVRF) between these groups
- Little is known about CVRFs among the German population with and without migration background

METHODS

- Data derived from the Prospective *Characteristics and Course of Heart Failure Stages A-B and Determinants of Progression* (STAAB) cohort study
- Representative sample of residents of the City of Würzburg, Germany, aged 30 to 79 years and reporting no previously diagnosed HF
- Analysis based on planned interim analysis with N=2,459 subjects
- Categorization of HF was performed according to AHA/ACC guidelines
 - A: ≥ 1 risk factor for HF (hypertension, arteriosclerotic disease, diabetes mellitus, obesity, metabolic syndrome), but absence of structural heart disease (SHD);
 - B: asymptomatic, but SHD (reduced left ventricular (LV) ejection fraction, LV hypertrophy, LV dilation, stenosis or more than mild regurgitation of aortic or mitral valve, worse than mild diastolic dysfunction) or history of myocardial infarction;
 - C: SHD and signs and symptoms of HF (Framingham criteria)
- Migration background was defined as follows:
 - German as only native language or German + another language with the birthplace being in Germany
→ native German
 - Other native language or German + other native language with the birthplace being abroad
→ migration background

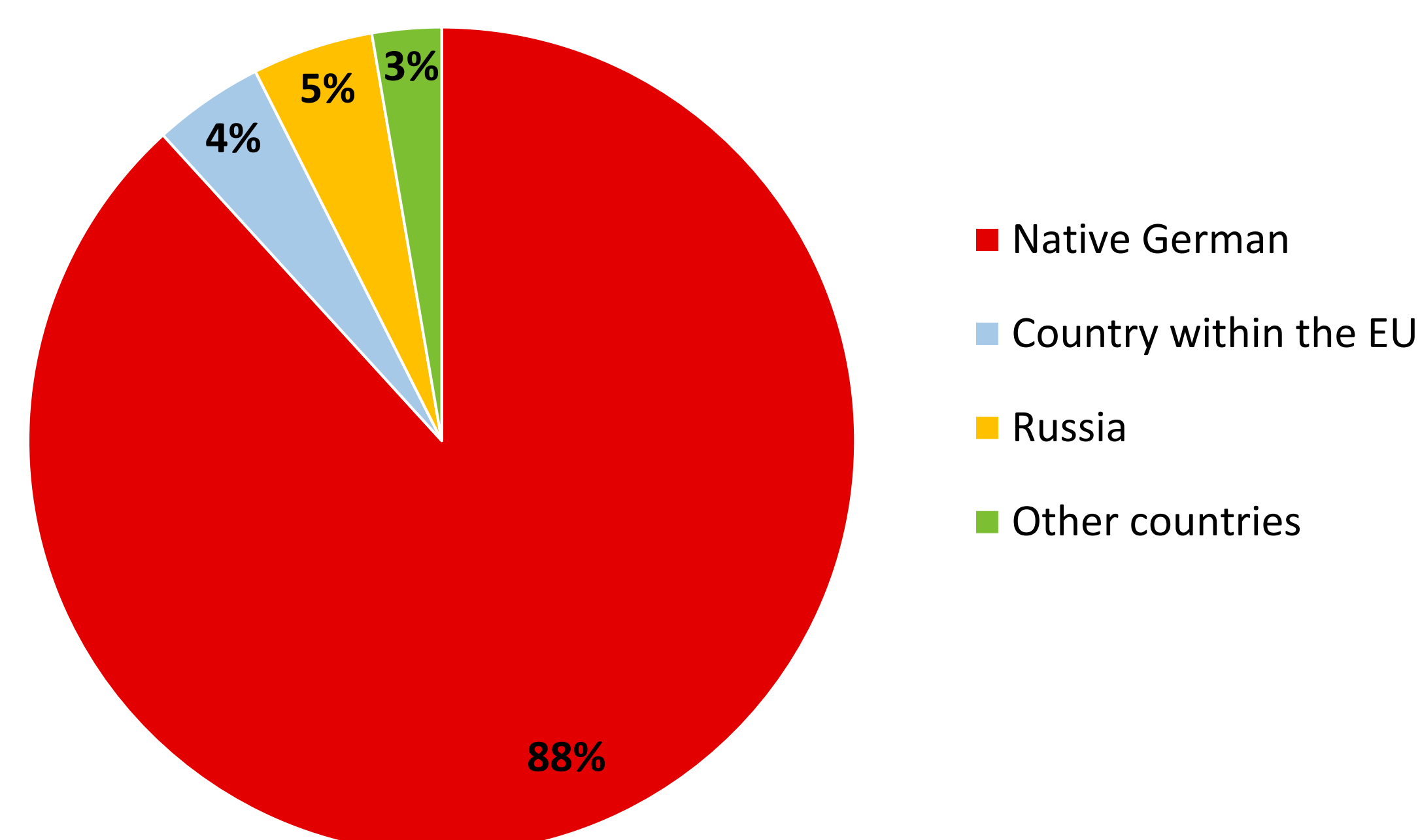


Figure 1: Distribution of migration status among 2,459 participants from the STAAB study
22 countries belonged to the category “country within the EU”, 29 countries belonged to the category “other countries”

	Native German N = 2,168	Migration background N = 291
Age, mean (SD)	55 (12)	51 (11)
Sex, n (%)	1,106 (51)	148 (51)
Monthly income [€], median (IQR)	3,050 (2,150-4,150)	2,150 (1,400-3,400)
Hypertension, n (%)	995 (46)	121 (42)
Atherosclerotic disease, n (%)	149 (7)	19 (7)
Obesity, n (%)	413 (19)	70 (24)
Metabolic Syndrome, n (%)	401 (18)	61 (21)
HDL cholesterol [mg/dL], mean (SD)	64 (19)	61 (18)
LDL cholesterol [mg/dL], mean (SD)	123 (34)	123 (38)
Triglycerides [mg/dL], mean (SD)	112 (82)	112 (73)
HbA1c [%], mean (SD)	5.5. (0.6)	5.6 (0.6)
CRP [mg/dL], median (IQR)	0.9 (0.5-2.0)	1.0 (0.4-2.6)
eGFR [mL/min/1.73 m ²], mean (SD)	86 (15)	91 (15)
NT-pro BNP [pg/ml], median (IQR)	56 (27-102)	39 (19-84)

Table 1: Sociodemographics and laboratory parameters among STAAB patients stratified for migration background

RESULTS

- N = 291 (12%) reported a migration background
- Stage A heart failure was present in 41% of migrants and 42% of residents with hypertension being the most frequent risk factor (78% / 83%)
- Stage B heart failure was found in 18% of migrants and 17% of residents
- The most unfavorable CVRF profile was found in participants from Russian origin

	Overall effect	EU	Russia	Other
Obesity	1.5 (1.1-2.1)	1.6	2.2*	0.6
Metabolic Syndrome	1.5 (1.1-2.0)	1.2	1.7*	1.5
HDL [mg/dL]	-3 (-5..-1)	-1	-4*	-3
HbA1c [%]	+0.1 (+0.0..+0.2)	-0.0	+0.1*	+0.1
CRP	x1.16 (1.01-1.32)*	x1.1*	x0.9	x0.8*
eGFR [mL/min/1.73 m ²]	+3 (+1..+4)	+3*	+2	+3*
NT-pro BNP	x0.88 (0.78-0.99)	x0.95	x0.86	x0.81

Table 2: Significant differences in cardiovascular syndromes and molecular markers between people with and without migration background in the STAAB cohort study

Calculations adjusted for sex and age; effects are OR for frequencies and mean difference for continuous variables; significances in subgroups marked with asterisk (*) based on the 95% CI

CONCLUSION

- Our data suggests that there are differences in CVRFs between people with and without migration background in the German population
- Causes for these differences need to be identified to facilitate personalization of prevention strategies