

# Non-utilization of medical rehabilitation before the occurrence of early retirement among foreign nationals residing in Germany

Weyermann M.  
Niederrhein University of Applied Sciences | Krefeld | Germany

Hochschule Niederrhein  
University of Applied Sciences

Gesundheitswesen  
Faculty of Health Care

## Introduction

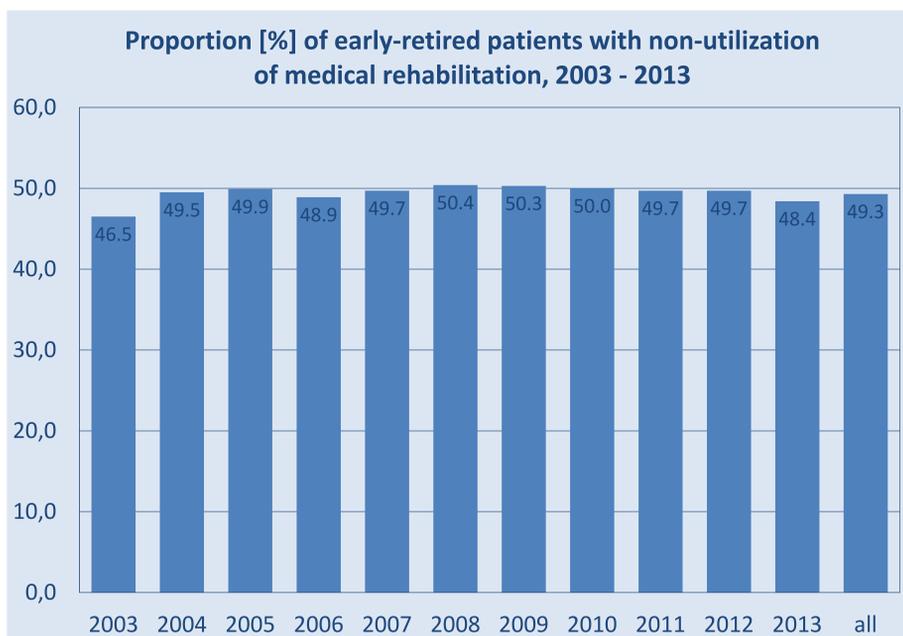
- In Germany the statutory pension insurance fund covers the cost of rehabilitation treatment for employees whose working capacity is endangered due to health problems.
- The underlying principle called “rehabilitation over retirement” is the concept to avoid early retirement due to health problems by rehabilitation.
- In 2013 about 6.8 million people residing in Germany (8.5% of the total population) have a foreign nationality.

## Purpose

- The aim of the study is to describe the utilization of medical rehabilitation before the occurrence of early retirement among foreign nationals residing in Germany from 2003 to 2013.

## Results

- Among all early-retired patients 49.3% (152057 out of 308168) did not utilize medical rehabilitation during five years before the occurrence of early retirement (range: 46.5% (2003) - 50.4% (2008)). In 2013 proportion was 48.4% (14017 out of 28966).



- Compared to persons with German citizenship foreign nationals had an increased risk for non-utilization (17384 out of 29783; 58.4%; crude OR: 1.50; 95% CI: 1.46 – 1.53). After adjustment for further risk factors risk decreased to 1.29 (95% CI: 1.26 – 1.33).
- Further risk factors for non-utilization were to be unmarried or widowed (vs. married, adjusted OR: 1.30; 95% CI: 1.28 – 1.32), unknown or low educational level (vs. median educational level, 1.53 [1.50 – 1.56]), as well as low annual income (1<sup>st</sup> quartile vs. 4<sup>th</sup> quartile; 3.69 [3.61-3.78]) (see table 1).

## Methods

- Analysis based on 20% random samples of administrative pension records from the Research Data Centre of the German Federal Pension Insurance, which include of all new cases of early retirement.
- We used logistic regression models to investigate the risk for non-utilization of medical rehabilitation during five years before the occurrence of early retirement.
- In addition to non-German citizenship age, sex, marital status, school and vocational education, professional career, annual income and diagnoses were considered as potential risk factors.
- Analyses were run with SAS software for statistical analyses (version 9.4).

Table 1: Risk for non-utilization of medical rehabilitation during five years before the occurrence of early retirement according to sociodemographic factors, logistic regression

factor	N	n	%	no medical rehabilitation during five years before the occurrence of early retirement	
				crude OR [95% CI]	adjusted* OR [95% CI]
<b>all</b>	308168	152057	49.3		
<b>citizenship</b>	<b>German</b>	<b>278385</b>	<b>134673</b>	<b>48.4</b>	<b>reference</b>
	<b>non-German</b>	<b>29783</b>	<b>17384</b>	<b>58.4</b>	<b>1.50 [1.46-1.53]</b>
<b>age</b>	≤ 44 years	62822	37835	60.2	reference
	45 - 59 years	206388	94298	45.7	0.56 [0.55-0.57]
	60 - 64 years	38958	19924	51.1	0.69 [0.67-0.71]
<b>sex</b>	female	150175	70035	46.6	reference
	male	157993	82022	51.9	1.10 [1.02-1.18]
<b>family status</b>	married	171462	74926	43.7	reference
	unmarried / widowed	136706	77131	56.4	1.67 [1.64-1.69]
<b>educational level</b>	no answer / low	87613	52244	59.6	2.43 [2.39-2.48]
	median	130966	49482	37.8	reference
	high	16832	11454	68.1	3.51 [3.39-3.63]
	unknown	72757	38876	53.4	1.89 [1.86-1.92]
<b>annual income during the last two years before occurrence of early retirement</b>					
	1 <sup>st</sup> quartile	85188	57916	68.0	3.57 [3.50-3.64]
	2 <sup>nd</sup> quartile	71666	38179	53.3	1.92 [1.88-1.96]
	3 <sup>rd</sup> quartile	67342	24653	36.6	0.97 [0.95-0.99]
	4 <sup>th</sup> quartile	83972	31309	37.3	reference
<b>C-statistic</b>					0.71

\*: further adjusted for calendar year, employment prospects, diagnoses

## Conclusions

- Despite the extraordinary importance of medical rehabilitation more than 49% of early-retired patients obtained no medical rehabilitation during five years before the occurrence of permanent work disability. Worst affected are deprived persons.
- Utilization of medical rehabilitation is lower in foreign nationals as compared to German nationals. This difference can only in part be explained by socio-economic differences.

contact: Maria Weyermann, maria.weyermann@hsnr.de  
Hochschule Niederrhein | Fachbereich Gesundheitswesen  
Reinarzstr. 49 | D – 47805 Krefeld

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