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Original Research

Country-specific and individual determinants of dizziness in Europe: results from the Survey of Health Ageing and Retirement in Europe (SHARE)

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ARTICLE INFO

Article history:

Received 24 June 2016

Received in revised form

23 February 2017

Accepted 4 April 2017

Available online 11 May 2017

Keywords:

Dizziness

Vertigo

Prevalence

Aged

ABSTRACT

Objectives: Dizziness is one of the most common complaints amongst older persons and has relevant consequences for functioning. However, the epidemiological findings on dizziness are scarce and inconsistent and prevalence varies considerably among existing studies. Hence the objective of this study is to compare the prevalence of dizziness in persons aged 50 years or older across several European countries. The specific aim was to identify country- and person-specific determinants associated with a higher risk.

Study design: Cross-sectional study.

Methods: Data from the Survey of Health Ageing and Retirement in Europe project, covering 20 countries were analysed. Micro-data on more than 69,000 persons aged 50+ years and additional macro-data on economic inequality, climate and urbanisation were included. We applied multilevel models to examine the impact of country-50 years or older specific determinants as well as individual characteristics on prevalence of dizziness.

Results: We found a total of 12.4% of the participants in our sample were troubled by dizziness in the last 6 months. Prevalence ranged from 6.5% to 23.4%. In multilevel analysis several determinants on the country (higher proportion of urban population) and on the individual level (female gender, living alone, old age, poor education, presence of comorbidities, depressive symptoms, sensory problems, lack of physical activities) were identified.

Conclusions: In conclusion dizziness is a common complaint amongst older Europeans that needs more attention. Further studies should investigate the prevalence, determinants and management of defined vestibular and non-vestibular causes of dizziness across Europe.

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<http://dx.doi.org/10.1016/j.puhe.2017.04.002>

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Introduction

Vertigo, dizziness and imbalance are among the most common complaints of older persons¹ and a cause for substantially increased consultation rates at the primary care physician.² Unsurprisingly, dizziness limits mobility and restricts activities of daily life in aged populations.³ Dizziness increases postural instability and is therefore a major risk factor for falls, injuries^{1,4} and a subsequent need for nursing care. In summary, dizziness is one of the relevant risk factors for disability⁵ that has to be addressed if the challenges of demographic change are to be tackled.

To date a number of studies have looked into the prevalence and determinants of dizziness in older adults. However, comparability of population-based information across studies and countries is limited. Studies vary in terms of age range of the investigated populations, recall period, data collection methods and specification of dizziness. Regarding prevalence, reported 12-month estimates for aged populations range from 36% in Australia⁶ and 37% in Sweden⁷ to 40% in England⁴ and 45% in Brazil.⁸ Likewise, reasons for regional variations of determinants have not been investigated so far. Since there are no representative studies across countries that used a common set of indicators, variations of the determinants of dizziness that could give rise to variations of prevalence are still not well understood.

Increasing age and the female sex are the only consistently reported individual determinants of dizziness.^{1,6,9–13} Dizziness is attributed to distinct peripheral vestibular or central neurological deficits, but can also be part of a multifactorial problem due to comorbidities and the ageing of proprioceptive, somatosensory or vestibular systems.^{8,14,15} Poly-medication might be a contributing factor,^{15,16} as well as low educational achievement.^{17–19} The association between dizziness and low educational achievement is still incompletely understood. Some studies point out that older persons with a higher education tend to show health-risk behaviours (smoking, alcohol-consumption, lack of physical activity, unhealthy dietary patterns) less frequently,^{20,21} which might be an approach to the explanation.

A more comprehensive study of dizziness in Europe would include a large range of countries, standardise definitions of dizziness and standardised data collection procedures and include potentially relevant indicators on both individual and regional levels. The Survey of Health, Ageing and Retirement in Europe (SHARE) is an excellent opportunity to investigate prevalence and determinants of dizziness across countries. SHARE is a multidisciplinary, cross-national panel-study covering information on health conditions, socio-economic status and social and family networks of persons aged 50 years or older and their spouses in most European countries and Israel.²²

The objective of this analysis from the SHARE data was to compare the prevalence and determinants of dizziness in persons aged 50 years or older across several European countries. Specifically, we wanted to identify region-specific (country) and person-specific (individual) determinants associated with a high prevalence.

Methods

Sample and participants

Data were drawn from the SHARE-database, which was initially funded by the European Commission and can be downloaded free of charge by the scientific community. The SHARE is a multidisciplinary, cross-national panel-study covering information on health conditions, socio-economic status and social and family networks of persons aged 50 years or older and their spouses in 20 European countries (plus Israel). The SHARE was designed as a representative prospective panel-study with 10 waves of data collection until 2024. To date, five panel waves (waves one to five) are provided by the SHARE-project. All data were collected by trained interviewers using computer-assisted personal interviewing and a standardised questionnaire.²²

For this study, we wanted to analyse all 20 countries that participated in any wave of the SHARE. To this end we used the most recent available wave for each country. Fifteen countries had participated in wave five (Austria, Belgium, Czech Republic, Denmark, Estonia, France, Germany, Israel, Italy, Luxembourg, Netherlands, Sweden, Slovenia, Spain and Switzerland) with field-time in 2013. For five countries we used previous waves, i.e. wave two for Greece and Ireland (2007), and wave four for Hungary, Poland and Portugal (2011/12). The provided sampling weights were used for descriptive analyses to compensate for unequal selection probabilities. Hence our sample consists of 69,246 persons aged 50 years or older and is representative. All participants aged 50+ years were included, also those with chronic or long-term health problems or disability. Due to missingness in sampling weights, descriptive analyses were carried out on 69,225 participants.

In SHARE, household response rates are given separately for the baseline/refreshment part and for the longitudinal part of the respective country.²³ We therefore calculated mean response rates for each country and overall. The overall mean household response rate was 58.4% (minimum 32.5% for Luxembourg, maximum 86.4% for Estonia). For wave two, SHARE provided no household response rates and for wave four only for the baseline/refreshment sample.²⁴

Measures

Main outcome

All participants were asked the following question: 'For the past six months at least, have you been bothered by any of the health conditions on this card?—Dizziness, faints or black-outs'. Validity of questionnaires was tested extensively before and during field phases by SHARE.^{25,26}

Covariates—individual determinants

Individual determinants of dizziness were chosen mainly based on previous knowledge about dizziness risk factors. These factors included age (5 year brackets), sex, household size, level of educational attainment (levels of International Standard Classification of Educational Degrees:²⁷ low, comprising of preprimary and primary education; medium, comprising of low secondary and secondary education; high,

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