J Frailty Aging 2023;12(4)322-325
Published online October 23, 2023, http://dx.doi.org/10.14283/jfa.2023.40

Brief Communication

Are General Practitioners More Reluctant to Give Advice for Exercise to Older Women? A Cross-Sectional Survey of European Adults

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Abstract

Despite the importance of physical exercise for older people, only a fraction of them receive advice to do so by primary care physicians. This study aims to examine whether gender disparities exist in primary care regarding General Practitioners' (GPs') advice for exercise in older European adults. A total of N=21,703 participants from 14 countries were employed from the Survey of Health, Ageing, and Retirement in Europe and analysed with the use of multivariate ordered logistic regressions. Being female reduced the odds of receiving advice from a primary care physician (OR=0.83; 95% CI: 0.78–0.88) irrespective of health, behavioural, demographic, and socioeconomic factors. In conclusion, older European women may have reduced odds of receiving advice for exercise because of their gender, which in turn may affect their frailty.

Key words: Gender disparity, preventive medicine, physical activity, primary care, SHARE.

Introduction

Physical activity (PA) and exercise has been positively associated with a vast range of health outcomes (1). Despite this fact, doctors often feel reluctant to promote the idea of exercise—or in fact, any other lifestyle factor—to their patients, especially for preventive purposes. A UK study suggests that general practitioners (GPs) underestimate the exercise guidelines and hence tend to advise for less than 'optimal' levels of PA (2). The same study reveals that lack of time and resources are the self-reported reasons for not counseling patients regarding the benefits of exercise.

Some national and regional survey studies on the general population reported low percentages of exercise advice in primary care, namely, 16% in Sweden (3), 39.6% in Poland (4), and 33.3% in the US (5). Fortunately, research also shows that more medical advice for exercise is given now compared to the past (5), and that the advice for exercise is one of the most common among the lifestyle recommendations along with smoking cessation and weight loss (2, 3).

Gender disparities in healthcare have been well documented (6), but are there gender disparities in receiving exercise advice as well? Some studies show that males receive advice for exercise more often than women (3, 4, 7) but these national studies have limited sample size and/or residual confounding, especially regarding the health status of patients. Therefore they cannot make a strong case for gender bias. Additionally, they focus on adults in general and not older adults who are more susceptible to frailty.

To address this issues, the present study employs a large sample of older adults from the Survey of Health, Ageing, and Retirement in Europe (SHARE) so as to examine whether gender disparities exist in GPs' advice for exercise. The study controls for a variety of health indicators, as well as behavioural, demographic, and socioeconomic factors.

Methods

Survey & study participants

SHARE is an (approximately) biennial survey focusing on people older than 50 years from several European countries. It uses computer-assisted personal interviews (CAPI), probability sampling, and the participation rates (for Wave 1) ranged from 38–74%, depending on the country (8). It has been reviewed by an ethics committee and all participants have given informed consent. We refer the reader to Börsch-Supan et al. (9) for more details on SHARE.

The study uses data from Waves one (2004) and two (2007). The only exclusion criterion is missing values for the outcome (GP advice for exercise frequency). The final sample consists of N=21,703 participants from 14 European countries including: Austria (5.90%), Germany (9.93%), Sweden (6.47%), Netherlands (7.90%), Spain (7.14%), Italy (9.04%), France (7.98%), Denmark (6.28%), Greece (4.73%), Switzerland (5.98%), Belgium (11.11%), Czech Republic (7.36%), Poland (6.85%), and Ireland (3.33%).

Outcome measurement & covariates

The frequency of advice for exercise was measured with the following question: 'How often does your general practitioner tell you that you should get regular exercise?' (Never; At some visits; At every visit). This question appears only in Waves 1 and 2 in the form of a paper pencil drop-off questionnaire.

The covariates introduced aimed at adjusting for medical, demographic, behavioural, and socioeconomic factors that may influence the GP's decision to advise (3, 4, 5, 10). Medical covariates included: for physical health, 14 indicators of previous diagnoses, namely, heart attack (including myocardial infarction or coronary thrombosis or any other heart problem including congestive heart failure), high blood pressure or hypertension, high blood cholesterol, diabetes or high blood

Received June 25, 2023
Accepted for publication September 7, 2023

Table 1. Selected demographic, socioeconomic, behavioural and medical characteristics of the study participants by gender

Variables	Male n=9,545 (43.98%)	Female n=12,158 (56.02%)	Std. diff.
Age mean (SD)	63.73 (9.64)	63.05 (10.64)	0.079
Heart attack	15.77%	9.88%	0.177
High blood pressure or hypertension	33.87%	35.32%	0.030
High blood cholesterol	21.31%	21.05%	0.006
Diabetes or high blood sugar	11.16%	9.10%	0.068
Arthritis	14.54%	24.98%	0.264
Osteoporosis	1.97%	12.40%	0.412
Parkinson disease	0.64%	0.59%	0.006
Hip fracture or femoral fracture	1.91%	2.02%	0.008
Mobility limitations median (IQR)	0 (1–0)	1 (3–0)	0.362
Depression/EURO-D median (IQR)	1 (3–0)	2 (4–1)	0.421
BMI (kg/m^2)			0.289
<18.5	0.46%	2.02%	
18.5–24.9	32.26%	41.97%	
25–29.9	49.27%	36.82%	
≥30	18.01%	19.20%	
Smoking habits			0.658
currently smoke	22.93%	16.87%	
never smoked daily for >1 year	35.30%	65.32%	
have stopped	41.77%	17.81%	
Education level			0.200
≤primary	25.33%	31.55%	
lower secondary–post secondary	52.32%	53.08%	
tertiary	22.35%	15.37%	

Notes: SD=standard deviation, Std. diff.=standardised difference. IQR=interquartile range.

sugar, arthritis, osteoporosis, Parkinson disease, hip fracture or femoral fracture, stroke, chronic lung disease, asthma, cancer, stomach or duodenal ulcer, and cataracts; for mental health the EURO-D geriatric depression scale (11); for disability, the number of mobility limitations, arm function, and fine motor limitations. Lastly, the categorical Body Mass Index (BMI) was also included.

Demographic covariates (other than gender) included: age, country, employment status (retired, employed or self-employed, unemployed, permanently sick or disabled, homemaker, other), and marital status (married and living together with spouse, registered partnership, married living separated from spouse, never married, divorced, widowed). Behavioural covariates included: Smoking (yes, currently smoke; never smoked daily for at least one year; no, I have stopped) and alcohol consumption in the last six months (≤2 times a month, 1–4 days a week, ≥5 days a week). Socioeconomic covariates included: education (<=primary, <= upper secondary, tertiary) and financial distress (with great difficulty, with some difficulty, fairly easily, easily).

Statistical analysis

Characteristics between genders were analysed with standardised differences (std.diff.) using the R package '*stddiff*'. Ordered logistic regressions were used to obtain odds ratios (OR) and 95% compatibility intervals (CI). Additionally, since OR can be misleading regarding the effect on the probability scale, average marginal effects, that is, the average difference (between genders) in probability of belonging to an outcome category, were calculated.

Six modes were employed. Model 1 is the unadjusted model; Model 2 adjusts for the medical covariates; Model 3 additionally adjusts for behavioural risks (smoking, drinking); Model 4 additionally adjusts for the demographic factors (excluding country); Model 5 additionally controls for socioeconomic factors; and Model 6 additionally controls for country in order to provide the no-pooling estimate.

The few missing values (<2%), mainly on BMI, EURO-D, and financial distress, were imputed using SHARE's own imputations. Continuous variables (i.e., age, disability, depression) were modelled with a quadratic term. Cluster robust standard errors were used at the household level. The α=0.05 level was used for statistical significance.

Results

Between the two genders, very large distribution overlap (std.diff.<0.1) existed in age, high blood pressure or hypertension, diabetes or high blood sugar, stroke, Parkinson disease, hip or femoral fractures, chronic lung disease, asthma, cancer, and cataracts. Small differences (std.diff.≈0.2) were observed in heart attack, arthritis, education, and financial distress. Medium differences (std.diff.≈0.5) existed in osteoporosis, mobility limitations, depression, BMI, and marital status. Large differences (std.diff.≈0.7) were present in smoking, employment status, and alcohol consumption. A selection of these characteristics can be seen in Table 1.

All six models reveal that older females are less likely to belong in a higher category, that is, to frequently receive advice for physical exercise by their GPs. These results are statistically significant at the α=0.001 level even after adjustment for medical, behavioural, demographic, and socioeconomic variables. In fact, adjusting for all covariates other than country of residence reduces the odds of receiving advice (OR=0.78; 95% CI 0.73–0.83), compared to the unadjusted estimate (OR=0.82; 95% CI 0.78–0.86). Introducing country fixed effects (Model 6) marginally increases the odds (OR=0.83; 95% CI 0.78–0.88). Model estimates are shown in Table 2.

Table 2. Odds ratios and 95% compatibility intervals for females receiving advice from the GP

Model	Odds ratio	95% CI
1	0.82*	(0.78–0.86)
2	0.79*	(0.75–0.83)
3	0.77*	(0.73–0.82)
4	0.77*	(0.73–0.82)
5	0.78*	(0.73–0.83)
6	0.83*	(0.78–0.88)

Notes: Model 1 is unadjusted. Model 2 adjusts for factors in Model 1 + physical and mental health, disability, BMI. Model 3 adjusts for factors in Model 2 + smoking and drinking. Model 4 adjusts for factors in Model 3 + age, marital and employment status. Model 5 adjusts for factors in Model 4 + education and financial distress. Model 6 adjusts for factors in Model 5 + country of residence.* indicates statistical significance at the α=0.001 level.

The average difference in probability between females and males of never being told that they should get regular exercise was p=0.04 (0.53-0.49), of being told in some visits p=-0.02 (0.35-0.37), and of being told at every visit again p=-0.02 (0.12-0.14). These estimates are from Model 6.

Discussion

In this large sample of older European adults, females were less likely to receive advice for exercise from their GPs regardless of their health status, behavioural risks, demographic, and socioeconomic characteristics. This is contrary to previous research which nevertheless does not focus on older adults and has the aforementioned limitations. The study also reveals that half of the sample is never given advice about regularly exercising by their primary care physician.

It is not obvious why GPs would feel more reluctant to give advice for exercise to female patients. GPs' characteristics, and gender especially, may play a role (12). Disease presentation may also be a factor. Genders tend to present (or even hide) their symptoms differently (13), hence leading their GP into different recommendations. Moreover, GPs may believe that older women are less likely to heed their advice, thus creating gender disparities in a similar way as socioeconomic status does, that is, by reducing the odds of doctors talking about behavioural changes (10).

This study did not adjust for physical activity in order to avoid collider bias—although some studies point to the ineffectiveness of simple verbal GP interventions in changing and maintaining patients' lifestyle (14–16). On the other hand, there is also evidence that GP referrals for PA are effective in achieving participation and improving PA levels in frail older adults (17). Moreover, simple advice or counseling appear to have the same effect as exercise referral schemes in increasing PA (18). This fact is particularly important given the questionable cost-effectiveness of supervised exercise programmes (19).

An interesting collateral of group exercise is the formation of social networks and interpersonal relations which can yield additional health and psychosocial benefits (20–22). This in turn can lead to even greater life satisfaction in older adults (23). Nevertheless, reducing frailty in older people through these programmes remains a challenging task (24).

The study's limitations regarding internal validity is the inability to test for residual confounding by GPs' characteristics and the self-reported nature of the data that unavoidably contain some measurement error. Bias may also arise from a potentially different interpretation of the survey question, or differential recall bias, between genders. The transportability of the findings is limited by the countries represented and SHARE's limitations in representativeness. The study's strengths include the ability to pool a large sample of older adults and to adjust for a variety of potential confounders that may influence GPs' decision to advise their patients.

Conclusions

In conclusion, older European women were less likely to receive advice but the probability differences were small. This research points toward a gender bias in primary care for which gender sensitivity programmes may be necessary to alleviate (25). A more systematic and structural change might also be necessary to raise awareness in primary care physicians (26), given the scarcity of interventions to address gender disparities in primary care (27). Since exercise has so many health benefits in older women (28), gender (or other) disparities should not prevail.

Although additional research and more recent data are required to make statements about practice implications, medical practitioners and educators should consider the role gender has in decisions regarding exercise counseling and advice. Future research should focus on the GP characteristics that may induce this disparity so that appropriate interventions can be designed and implemented.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The SHARE data collection has been funded by the European Commission, DG RTD through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT- 2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982, DASISH: GA N°283646) and Horizon 2020 (SHARE-DEV3: GA N°676536, SHARE-COHESION: GA N° 870628, SERISS: GA N° 654221, SSHOC: GA N° 823782, SHARE-COVID19: GA N°101015924) and by DG Employment, Social Affairs & Inclusion through VS 2015/0195, VS 2016/0135, VS 2018/0285, VS 2019/0332, and VS 2020/0313. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01 AG09740-13S2, P01 AG005842, P01 AG08291, P30 AG12815, R21 AG025169, Y1-AG-4553-01, IAG BSR06-11, OGHA 04-064, HHSN271201300071C, RAG052527A) and from various national funding sources is gratefully acknowledged (see www.share-project.org). Open access funding provided by HEAL-Link Greece.

Declaration of interest: No conflicts of interest.

Data availability: The datasets used for this analysis are available from the SHARE website, http://www. share-project.org/home0.html.

Acknowledgements: The author would like to thank Evgenia Moustaferi for helpful comments and one anonymous Reviewer for helpful comments and suggestions. This paper uses data from SHARE Waves 1 and 2 (DOIs: 10.6103/SHARE.w1.800, 10.6103/SHARE.w2.800).

Ethical statement: SHARE underwent a thorough review of ethical standards by the University of Mannheim's internal review board (IRB). All the necessary consents of the individuals whose personal data were obtained. http://www.share-project.org/fileadmin/pdf documentation/SHARE ethics approvals.pdf.

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How to cite this article: K. Christopoulos. Are General Practitioners More Reluctant to Give Advice for Exercise to Older Women? A Cross-Sectional Survey of European Adults. J Frailty Aging 2023;12(4)322-325; http://dx.doi.org/10.14283/jfa.2023.40