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Determinants of Nonparticipation in Workplace Health Promotion: A Representative Multivariable Analysis in Germany

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Abstract

Earlier investigations have shown that participation in workplace health promotion (WHP) initiatives is shaped by sociodemographic and socioeconomic characteristics. Building on this evidence, the present study specifically examines factors associated with *nonparticipation* using data from a representative German population sample. To explore determinants of nonparticipation, organizational attributes were analyzed alongside sociodemographic factors and variables related to health behavior. The empirical basis of the analysis is data derived from the GEDA 2014/2015-EHIS survey conducted by the Robert Koch Institute in Berlin. Higher age was associated with a markedly increased odds of nonparticipation (OR: between 1.30 and 1.92, p: between <0.001 and 0.033). In contrast, other potential predictors—such as body weight, smoking behavior, alcohol use, physical activity, and dietary patterns—showed only weak associations in this model. Perceived assignment to a specific socioeconomic status category was also significantly related to nonparticipation (OR: 0.76, p: <0.001).Overall, nonparticipation appears to be primarily linked to sociodemographic and socioeconomic determinants. These aspects should therefore be considered when developing strategies to reduce nonparticipation. However, validation using more recent or longitudinal datasets is required to assess whether these findings remain applicable or are affected by cohort-related influences.

Keywords: Workplace health promotion, Nonparticipation, Determinants, Logistic regression, Representative sample

Introduction

A growing number of employers now explicitly promote workplace health promotion (WHP) initiatives in their recruitment materials. According to the Ottawa Charter issued by the World Health Organization in 1986, health-promoting interventions should aim to create living and working environments that are not only secure and stimulating but also fulfilling and enjoyable [1]. The Luxembourg Declaration conceptualizes WHP as a collaborative process involving employers, employees, and society, with the shared objective of enhancing health and wellbeing in the workplace [2]. Core goals of WHP include optimizing work organization and working conditions, fostering active employee involvement, and strengthening individual capabilities [2]. This distinguishes health promotion from preventive approaches, which primarily seek to avert disease and its consequences, whereas health promotion focuses on reinforcing and mobilizing health-related resources [3, 4].

A substantial body of literature indicates that many organizations have recognized the relevance of WHP and implemented corresponding measures successfully. Such initiatives have been shown to reduce absenteeism and associated sickness-related costs, thereby contributing positively to organizational performance and return on investment (ROI) [5–10]. Nevertheless, analyses of available statistics reveal that participation remains

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limited: only 3.9% of employees and merely 0.5% of companies are reported to engage in WHP measures [11–13]. These figures refer exclusively to programs implemented with the support of statutory health insurance funds; inclusion of additional providers would likely result in higher overall estimates [14–16].

Despite repeated demonstrations of the value and effectiveness of WHP, it remains unclear why a considerable proportion of employees either are not reached by these initiatives or choose not to participate. Understanding the underlying reasons and their relationship to individual or structural characteristics is therefore essential. Existing research has largely focused on implementation success and participation rates, while comparatively little attention has been directed toward nonparticipants. Earlier studies, often limited to specific organizations or institutions, have identified various barriers to engagement [8, 17, 18]. A recent large-scale investigation by Nöhammer *et al*. [19] examined perceived barriers to WHP use by explicitly asking about predefined obstacles. In contrast, the present study adopts a broader perspective, aiming to identify more general and potentially previously unrecognized factors that may contribute to employee nonparticipation in employer-provided health promotion programs.

Materials and Methods

This analysis draws on data from the "German Health Update" survey (GEDA 2014/2015-EHIS), which is conducted on a regular basis by the Robert Koch Institute (RKI). Using a two-stage stratified cluster sampling design based on population registration offices, individuals aged 18 years and older with permanent residence in Germany were randomly selected between November 2014 and July 2015. Data were collected through a self-administered questionnaire that was available both online and in paper-based form. To adjust for discrepancies between the sample composition and the German population structure (as of 31/12/2014), weighting procedures were applied [9]. The GEDA 2014/2015-EHIS constitutes the only and most recent representative dataset in Germany that provides detailed information on participation and nonparticipation in specific WHP measures. In the subsequent 2019/2020 survey wave, this topic was no longer included. An earlier nationwide survey from 2012 (BIBB/BAuA labor force survey) assessed WHP in more general terms, asking only whether such measures had been offered within the previous two years and whether employees had participated, without specifying the types of interventions [20].

For consistency with earlier empirical work, the methodological approach largely followed the frameworks applied by Hermann *et al*. (2021) and Ludwig *et al*. (2020) [21, 22]. The analytical sample was limited to respondents aged 18–64 years. Inclusion further required confirmation that at least one workplace health promotion (WHP) activity had been offered by the employer within the previous 12 months. Overall, 10 WHP activities were assessed using the question: "Did your company/enterprise offer (…) in the last 12 months?" Response categories included "yes," "no," and "do not know." When respondents selected "yes," they were subsequently asked: "Have you taken advantage of this offer?" with answer options "yes" or "no." Within the GEDA survey, WHP participation was captured using only these two questions; no data were collected regarding participation frequency or intensity. Eligibility was additionally restricted to respondents indicating their predominant life situation as full-time employment, part-time employment, semi-retirement, or marginal employment (e.g., mini-jobs). For the item "What is your main professional position in your main occupation?", apprentices were included together with employees, workers, and civil servants (including trainees), as this group is commonly excluded from comparable analyses. Individuals lacking access to WHP opportunities—such as unemployed persons, self-employed individuals, or housewives/househusbands—were excluded.

Unlike the approaches of Hermann *et al*. (2021) and Ludwig *et al*. (2020) [21, 22], the present study aimed to incorporate the full breadth of WHP offerings rather than limiting the analysis to a small subset of measures. Ultimately, eight WHP activities were subjected to detailed examination. Due to insufficient respondent numbers for smoking cessation programs and staff surveys, these measures did not yield statistically interpretable results and were therefore omitted from further analysis.

From the initial pool of 24,016 survey participants, 7,912 respondents met all inclusion criteria and were retained. Depending on the specific WHP measure under consideration, sample sizes varied between 1,170 and 3,648 individuals. The sequential filtering of the dataset is depicted in **Figure 1.**

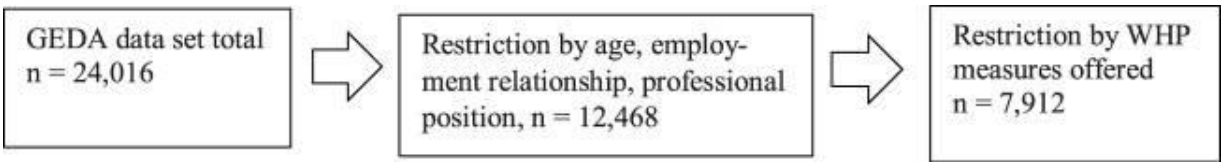

Figure 1. Sequential reduction of the analytical sample (GEDA study 2014/2015-EHIS, Berlin 2017).

The objective of this analysis was to identify a broad set of determinants associated with nonparticipation in WHP initiatives at the population level. Variable selection was informed by prior literature and expanded to include additional potentially relevant factors. Previous studies have demonstrated associations between WHP participation and sociodemographic characteristics (age, gender, socioeconomic status (SES)), perceived health and health awareness, as well as organizational attributes such as company size, sector, working hours, and occupational position. In contrast, variables such as social support, body weight, smoking behavior, alcohol consumption, physical activity, and dietary habits have been examined infrequently or not at all [6, 20–23]. To assess whether established predictors are also relevant for explaining nonparticipation, these variables were included alongside less frequently studied factors (e.g., subjective social status and life satisfaction), which were available within the GEDA dataset. An overview of descriptive statistics for all analytical variables is provided in **Table 1** and elaborated below.

Table 1. Key characteristics of the analysis sample (employed persons aged 18–64), presented as absolute numbers and percentages, based on data from the Robert Koch Institute (GEDA study 2014/2015-EHIS, Berlin 2017, n = 7,912).

Characteristic	Category	%	n
Gender	Men	47.0	3,720
	Women	53.0	4,192
Age	18–29 years	16.8	1,331
	30–44 years	33.8	2,674
	45–64 years	49.4	3,904
Socioeconomic status (SES)	Low	7.9	629
	Middle	53.8	4,257
	High	38.2	3,025
Subjective social status	Lower-middle	39.8	3,148
	Higher-upper	59.2	4,683
	Missing	1.0	81
Subjective Health Status	Poor-moderate	19.1	1,509
	Good-very good	80.6	6,381
	Missing	0.3	22
Attention to health	Less strong-not at all	53.1	4,205
	Strong-very strong	46.5	3,676
	Missing	0.4	31
BMI	Underweight	1.6	129
	Normal weight	50.0	3,955
	Overweight	33.0	2,610
	Obesity	14.8	1,168
	Missing	0.6	50
Smoking	Yes	25.4	2,008
	No	74.5	5,897
	Missing	0.1	7
Alcohol	Yes	79.6	6,295
	No	20.3	1,608

	Missing	0.1	9
Sport per week	No - little sport	82.1	6,495
	Much - daily sport	17.5	1,384
	Missing	0.4	33
Nutrition	Unhealthy nutrition	37.6	2,976
	Healthy nutrition	62.4	4,936
Number of employees in the company	1–10	8.1	640
	11–19	8.3	660
	20–49	11.2	887
	50+	71.8	5,680
	Missing	0.6	45
Business sector	Manufacturing and processing	22.7	1,799
	Service sector	23.1	1,826
	Public service/healthcare/social services/administration	42.6	3,371
	Others	3.2	251
	Missing	8.4	665
Professional position	Employee	74.0	5,851
	Worker	10.9	862
	Civil servant/officer	11.7	928
	Trainee/apprentice	3.4	271
Working hours	Full-time	74.1	5,865
	Part-time	22.3	1,763
	Marginally employed	2.5	197
	Partial retirement	1.1	87
Social support	Low	13.5	1,071
	Middle	55.7	4,404
	High	30.0	2,373
	Missing	0.8	65
Life satisfaction	Not at all - rather unsatisfied	9.8	779
	Satisfied - completely satisfied	89.9	7,114
	Missing	0.2	19

Sociodemographic factors

Sociodemographic variables comprised gender (male/female), age (categorized by GEDA into 18–29, 30–44, and 45–64 years) [21, 22], and socioeconomic status (SES). SES was derived from educational attainment and vocational training, occupational position, and equivalised net household income. In the GEDA framework, SES is operationalized as an index variable using predefined scores ranging from 1 to 7 for each component (education, occupation, income), with higher values reflecting higher levels. These equally weighted component scores are summed, and the resulting distribution is used to classify respondents into three groups: 20% each in the low- and high-status categories and 60% in the middle category [24]. In the present sample, individuals with low SES were underrepresented, a well-documented limitation of survey research [25]. Although alternative predictors—such as program-related characteristics—have been proposed, these cannot be consistently applied in population-representative analyses covering multiple WHP measures. Moreover, SES remains a robust indicator, as numerous studies continue to demonstrate persistent health inequalities along socioeconomic gradients [26].

Subjective health and social factors

Perceived health status was included as an explanatory variable. Responses to the item “What is your state of health in general?” were recorded on a five-point scale ranging from “very good” to “very bad.” For analytical purposes and in line with Ludwig *et al*. (2020) [22], responses were collapsed into two categories: “bad–moderate” and “well–very well.”

An identical recoding strategy was applied to the question “How much do you generally pay attention to

your health?", resulting in the categories "not at all–little attention" and "much–very much."

Subjective social status (SSS) was assessed using the MacArthur Scale [27], which requires respondents to place themselves on a 10-step ladder representing societal standing, with 10 indicating the highest levels of education, income, and occupational prestige, and 1 indicating the lowest. To maintain a parsimonious analytical model, responses were dichotomized into "lower to middle stratum" (scores 1–5) and "upper to highest stratum" (scores 6–10).

Several health-related behaviors that are often overlooked in WHP research were also included: body weight, smoking, alcohol consumption, physical activity, and dietary behavior. Body weight was operationalized using body mass index (BMI) categories: "underweight" (BMI < 18.5), "normal weight" (18.5 ≤ BMI < 25), "overweight" (25 ≤ BMI < 30), and "obese" (BMI ≥ 30). Smoking status, originally assessed on a four-level scale from daily smoking to never having smoked, was dichotomized into "smoker" and "nonsmoker." Comparable dichotomization procedures were applied to alcohol consumption (six response categories from daily intake to abstinence) and weekly physical activity (ranging from 0 = no or once-weekly activity to 7 = daily activity). Nutritional behavior was derived from an additive index based on fruit and vegetable intake and subsequently divided into "unhealthy" and "healthy nutrition" using a mean split.

Company attributes

Three established factors were considered in this study. First, company size was included, as it typically plays a key role in the adoption and delivery of workplace health promotion (WHP) programs. Respondents could select from the following categories: 1–10, 11–19, 20–49, and 50+ employees. Second, the economic sector was examined. The original dataset provided 21 specific occupational fields; however, because the precise occupational area is less relevant than the broader economic sector—and due to the absence of a standardized classification across comparable studies [6, 20, 22, 28]—responses were consolidated into four main groups: manufacturing/processing, services, public administration/healthcare/social services, and other. The third factor was the respondent's occupational position, with possible answers being: regular employees, manual workers, civil servants (including trainees), and apprentices.

Additional variables

Perceived social support and overall life satisfaction were also investigated as possible moderators. Social support from friends, family, and neighbors was measured with the Oslo 3-Item Social Support Scale [29], with responses categorized as "low," "moderate," or "high." Overall life satisfaction ("All things considered, how satisfied are you with your life these days?") originally had 10 levels, which were recoded into two groups: "not at all to moderately satisfied" and "highly to very highly satisfied."

The statistical analysis employed logistic regression models to identify predictors of the binary outcome (participation vs. non-participation). Model assumptions were verified: no extreme outliers (standardized residuals between −3 and 3) and no multicollinearity (all VIF values < 5). Linearity in the logit was not assessed because no continuous predictors were included.

Results and Discussion

Table 2 presents the availability of specific WHP measures, along with participation and non-participation rates, stratified by age, gender, and socioeconomic status (SES).

Table 2. Descriptive overview of dependent variables by availability of workplace health promotion measures (healthy lunch, back health training, company sports, stress management, nutrition information/counseling, anti-bullying support, financial subsidies, health discussion groups), broken down by age, gender, and socioeconomic status (calculated for all employed respondents; source: GEDA 2014/2015-EHIS study, Berlin 2017, n = 12,468).

	General	Age		Gender	SES

Stress management	Company sport				Back health				Healthy lunch				
Offered	Participation		Offered		Participation		Offered		Participation		Offered		
2.787 (22.4%)	732 (5.9%)		2.900 (23.3%)		696 (5.6%)		3.222 (25.8%)		2.524 (20.2%)		3.972 (31.9%)		
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	
1.356 (24.1%)	1.019 (77.4%)	298 (22.6%)	4.317 (76.2%)	1.347 (23.8%)	1.239 (77.8%)	354 (22.2%)	3,980 (71.0%)	1.622 (29.0%)	737 (39.0%)	1.154 (61.0%)	3.918 (66.9%)	1.936 (33.1%)	**45–64 Years**
1.009 (26.7%)	782 (74.3%)	270 (25.7%)	2.751 (71.9%)	1.074 (28.1%)	860 (78.5%)	236 (21.5%)	2.618 (70.2%)	1.110 (29.8%)	419 (31.9%)	893 (68.1%)	2.619 (66.1%)	1.345 (33.9%)	**30–44 Years**
422 (24.0%)	306 (65.1%)	164 (34.9%)	1.316 (73.3%)	479 (26.7%)	377 (78. 1%)	106 (21.9%)	1.213 (71.2%)	490 (28.8%)	189 (28.4%)	477 (71.6%)	1.234 (64.1%)	691 (35.9%)	**18–29 Years**
1.459 (23.5%)	989 (78.1%)	278 (21.9%)	4.893 (79.1%)	1.295 (20.9%)	1.132 (74.3%)	392 (25.7%)	4,552 (74.5%)	1.556 (25.5%)	674 (36.0%)	1.200 (64.0%)	4.496 (69.9%)	1.935 (30.1%)	**Women**
1.328 (26.8%)	1.118 (71.1%)	454 (28.9%)	3.491 (68.5%)	1.605 (31.5%)	1.344 (81.6%)	304 (18.4%)	3.259 (66.2%)	1.666 (33.8%)	671 (33.6%)	1.324 (66.4%)	3.275 (61.7%)	2.037 (38.3%)	**Men**
1.332 (37.0%)	995 (75.2%)	329 (25.8%)	2,339 (63.4%)	1.351 (36.6%)	1.052 (80.6%)	254 (19.4%)	2.242 (62.9%)	1.323 (37.1%)	454 (28.4%)	1.144 (65.2%)	2.191 (57.3%)	1.632 (42.7%)	**High**
1.332 (21.1%)	1.016 (73.6%)	365 (26.2%)	4,905 (77.7%)	1.410 (22.3%)	1.290 (76.7%)	391 (23.3%)	4.490 (72.5%)	1.705 (27.5%)	796 (39,8%)	1.206 (60.2%)	4.520 (68.7%)	2.060 (31.1%)	**Middle**
123 (9.7%)	96 (71.6%)	38 (28.4%)	1.137 (89.1%)	139 (10.9%)	134 (72.4%)	51 (27.6%)	1.076 (84.7%)	194 (15.3%)	95 (35.3%)	174 (64.7%)	1.057 (79.1%)	280 (20.9%)	**Low**

Financial allowance			Help against Bullying				Info/Consulting nutrition						
Participation	Offered		Participation		Offered		Participation		Offered		Participation		
567 (4.5%)	1.929 (15.5%)		399 (3.2%)		2.444 (19.6%)		1.090 (8.7%)		2.638 (21.2%)		824 (6.6%)		
Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
271 (29.7%)	4.521 (82.8%)	939 (17.2%)	1.050 (84.1%)	198 (15.9%)	4.164 (76.2%)	1.302 (23.8%)	700 (53.2%)	617 (46.8%)	4.272 (75.7%)	1.374 (24.3%)	892 (67.8%)	424 (32.2%)	4.263 (75.9%)
188 (28.2%)	2.975 (81.5%)	677 (18.5%)	649 (84.5%)	119 (15.5%)	2.791 (77.7%)	802 (22.3%)	533 (63.0%)	313 (37.0%)	2.868 (76.5%)	881 (23.5%)	725 (73.5%)	262 (26.5%)	2.773 (73.3%)
108 (35.3%)	1.391 (81.6%)	313 (18.4%)	239 (74.5%)	82 (25.5%)	1.327 (79.6%)	340 (20.4%)	202 (55.8%)	160 (44.2%)	1.373 (78.2%)	383 (21.8%)	272 (66.3%)	138 (33.7%)	1.340 (76.0%)
316 (33.7%)	5.071 (84.0%)	968 (16.0%)	873 (77.5%)	254 (22.5%)	4.761 (79.8%)	1.202 (20.2%)	623 (50.7%)	607 (49.3%)	4.870 (78.9%)	1.305 (21.1%)	910 (64.5%)	500 (35.5%)	4.750 (76.5%)
251 (26.5%)	3.816 (79.9%)	961 (20.1%)	1.065 (88.0%)	145 (12.0%)	3.521 (73.9%)	1.242 (26.1%)	812 (62.7%)	483 (37.3%)	3.643 (73.2%)	1.333 (26.8%)	979 (75.1%)	324 (24.9%)	3.626 (73.2%)
224 (29.6%)	2.682 (77.6%)	774 (22.4%)	926 (86.8%)	141 (13.2%)	2.329 (67.8%)	1.107 (32.2%)	601 (57.5%)	444 (42.5%)	2.497 (69.7%)	1.085 (30.3%)	935 (71.6%)	370 (28.4%)	2.266 (63.0%)
300 (29.9%)	5.088 (83.2%)	1.026 (16.8%)	919 (81.3%)	211 (18.7%)	4.856 (80.4%)	1.185 (19.6%)	746 (56.6%)	572 (43.4%)	4.895 (78.0%)	1.382 (22.0%)	883 (68.5%)	406 (31.5%)	4.963 (78.8%)
43 (34.7%)	1.115 (89.7%)	128 (10.3%)	93 (66.4%)	47 (33.6%)	1.094 (87.8%)	152 (12.2%)	88 (54.3%)	74 (45.7%)	1.118 (86.7%)	171 (13.3%)	71 (59.7%)	48 (40.3%)	1.144 (90.3%)

			No	642 (70.3%)	479 (71.8%)	198 (64.7%)	622 (66.3%)	697 (73,5%)	534 (70.4%)	703 (70.1%)	81 (65.3%)
Discussion/Working group	Offered	1.293 (10.4%)	Yes	665 (12.3%)	434 (12.1%)	194 (11.6%)	597 (10.1%)	696 (14.7%)	515 (15.4%)	675 (11.2%)	103 (8.2%)
			No	4.736 (87.7%)	3.147 (87.9%)	1.474 (88.4%)	5.329 (89.9%)	4.028 (85.3%)	2.829 (84.6%)	5.369 (88.8%)	1.156 (91.8%)
	Participation	467 (3.7%)	Yes	261 (40.5%)	137 (33.2%)	69 (36.5%)	243 (42.7%)	224 (33.0%)	149 (29.7%)	272 (42.0%)	46 (46.5%)
			No	384 (59.5%)	276 (66.8%)	120 (63.5%)	326 (57.3%)	454 (67.0%)	352 (70.3%)	375 (58.0%)	53 (53.5%)

A healthy lunch option was the most commonly offered measure (approximately 32%) and also recorded the highest participation rates across subgroups, although non-participation still dominated. Notably, individuals in the low-SES group were consistently offered fewer measures overall, yet when measures were available, their participation rates exceeded those of medium- and high-SES groups for every single offering. A similar pattern favoring higher participation was observed among women across nearly all measures. No clear age-related pattern emerged.

Table 3 displays the overall provision of at least one WHP measure and its distribution by company size and economic sector.

Table 3. Overall availability of workplace health promotion measures (healthy lunch, back health training, company sports, stress management, nutrition information/counseling, anti-bullying support, financial subsidies, health discussion groups)—general frequency (n = 7,912), by company size (n = 6,972), and by economic sector (n = 6,465); source: GEDA 2014/2015-EHIS study, Berlin 2017.

	General	**Business sector**				**Number of persons in the company**			
	Frequency (%)	**Manufacturing and processing industries**	**Service sector**	**Public service**	**Others**	**Up to 10**	**11–19**	**20–49**	**50+**
One offer	2,137 (27.0%)	434 (27.0%)	499 (32.5%)	898 (29.0%)	94 (42.7%)	250 (50.8%)	260 (48.0%)	299 (41.8%)	1,314 (25.2%)
Two offers	1,346 (17.0%)	270 (16.8%)	286 (18.6%)	628 (20.3%)	40 (18.2%)	122 (24.8%)	126 (23.2%)	170 (23.8%)	981 (17.6%)
Three offers	1,088 (13.8%)	243 (15.1%)	196 (12. 8%)	541 (17.5%)	30 (13.6%)	52 (10.6%)	57 (10.5%)	112 (15.7%)	859 (16.4%)
Four offers	808 (10.2%)	171 (10.6%)	177 (11.5%)	384 (12.4%	27 (12.3%)	27 (5.5%)	35 (6.5%)	68 (9.5%)	671 (12.8%)
Five offers	650 (8.2%)	150 (9.3%)	152 (9.9%)	304 (9.8%)	10 (4.5%)	21 (4.3%)	33 (6.1%)	39 (5.5%)	555 (10.6%)
Six offers	488 (6.2%)	135 (8.4%)	116 (7.5%)	201 (6.5%)	12 (5.5%)	9 (1.8%)	18 (3.3%)	14 (2.0%)	445 (7.0%)

Seven offers	302 (3.8%)	121 (7.5%)	69 (4.5%)	90 (2.9%)	3 (1.4%)	7 (1.4%)	8 (1.5%)	8 (1.1%)	279 (5.3%)
Eight offers	196 (2.5%)	85 (5.3%)	42 (2.7%)	53 (1.7%)	4 (1.8%)	4 (0.8%)	5 (0.9%)	5 (0.7%)	182 (2.8%)
total	7,015	1,609	1,537	3,099	220	492	542	715	5,223

Approximately 27% of employees had access to at least one measure. Companies with 50+ employees were markedly more likely to offer three or more measures. The service sector provided such measures most frequently.

Table 4 illustrates participation rates according to the number of measures offered.

Table 4. Number of available workplace health promotion measures (healthy lunch, back health training, company sports, stress management, nutrition information/counseling, anti-bullying support, financial subsidies, health discussion groups) and corresponding participation rates; source: GEDA 2014/2015-EHIS study, Berlin 2017.

	SUM participation									
SUM offers	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**total**
1	949 (48.4%)	1,012 (51.6%)								1961 (100%)
2	538 (40.7%)	477 (36.1%)	307 (23.2%)							1,322 (100%)
3	335 (31.2%)	379 (35.3%)	246 (22.9%)	113 (10.5%)						1,073 (100%)
4	208 (26.0%)	294 (36.8%)	169 (21.2%)	83 (10.4%)	45 (5.6%)					799 (100%)
5	172 (26.5%)	214 (32.9%)	127 (19.5%)	69 (10.6%)	41 (6.3%)	27 (4.2%)				650 (100%)
6	101 (20.7%)	151 (30.9%)	103 (21.1%)	70 (14.3%)	41 (8.4%)	15 (3.1%)	7 (1.4%)			488 (100%)
7	49 (16.2%)	76 (25.2%)	75 (24.8%)	48 (15.9%)	26 (8.6%)	17 (5.6%)	3 (1.0%)	8 (2.6%)		302 (100%)
8	22 (11.2%)	50 (25.5%)	40 (20.4%)	40 (20.4%)	22 (11.2%)	9 (4.6%)	7 (3.6%)	3 (1.5%)	3 (1.5%)	169 (100%)

When only one measure was available, slightly more than half of the eligible employees participated. When three or more measures were offered, the majority of employees took part in at least one.

Results from the logistic regression analyses are summarized in **Table 5**. Gender effects were significant for all measures except the availability of a canteen with healthy food. Women showed higher odds of non-participation specifically in company sports programs (OR = 1.46, 95% CI = 1.16–1.84, p = 0.001), but lower odds of non-participation in all other offerings (OR ranging from 0.56 to 0.76, 95% CI between 0.49 and 0.99, p-values from <0.001 to 0.038).

Table 5. Logistic regression results for various workplace health promotion measures (back health training, company sports, canteen with healthy lunch, nutrition information/counseling, stress management, health discussion groups, support for bullying/conflict, financial subsidies for health activities), controlling for sociodemographic (gender, age), socioeconomic (SES, subjective social status), health-related (self-rated health, health consciousness, BMI, smoking, alcohol, physical activity, diet), company-related (size, sector, occupational position, working

hours), social support, and life satisfaction variables; source: Robert Koch Institute, GEDA 2014/2015-EHIS study, Berlin 2017, n = 7,912.

	Company sport (n = 2,570)		**Back health (n = 2,874)**		**Healthy lunch (n = 3,500)**	
	OR (95% CI)	**p-value**	**OR (95% CI)**	**p-value**	**OR (95% CI)**	**p-value**
Gender						
Men	Ref.		Ref.		Ref.	
Women	1.46 (1.16–1.84)	0.001	0.61 (0.49–0.77)	<0.001	1.12 (0.93–1.33)	0.227
Age						
18–29 years	Ref.		Ref.		Ref.	
30–44 years	1.52 (1.14–2.02)	0.005	0.84 (0.61–1.14)	0.257	1.32 (1.03–1.69)	0.026
45–64 years	1.92 (1.44–2.55)	<0.001	0.83 (0.62–1.13)	0.240	1.67 (1.32–2.12)	<0.001
Socioeconomic Status (SES)						
Low	Ref.		Ref.		Ref.	
Middle	1.08 (0.67–1.76)	0.750	1.27 (0.84–1.90)	0.258	1.31 (0.95–1.79)	0.096
High	1.47 (0.88–2.46)	0.138	1.68 (1.08–2.60)	0.021	0.87 (0.62–1.24)	0.447
Subjective social status						
Lower-middle	Ref.		Ref.		Ref.	
Higher-upper	1.02 (0.82–1.27)	0.863	1.18 (0.96–1.45)	0.113	0.76 (0.65–0.90)	0.001
Subjective Health Status						
Poor-moderate	Ref.		Ref.		Ref.	
Good-very good	0.61 (0.45–0.83)	0.002	1.03 (0.80–1.33)	0.824	0.99 (0.81–1.20)	0.898
Attention to health						
Little-not at all	Ref.		Ref.		Ref.	
Strong-very strong	0.71 (0.58–0.88)	0.001	0.72 (0.59–0.88)	0.001	0.85 (0.73–0.99)	0.048
BMI						
Underweight	Ref.		Ref.		Ref.	
Normal weight	0.78 (0.33–1.84)	0.565	1.90 (0.90–3.98)	0.087	0.90 (0.48–1.64)	0.706
Overweight	0.81 (0.34–1.95)	0.640	1.86 (0.88–3.92)	0.106	0.93 (0.50–1.72)	0.812
Obesity	0.76 (0.31–1.87)	0.548	1.96 (0.90–4.22)	0.087	0.92 (0.49–1.74)	0.808
Smoking						
Yes	Ref.		Ref.		Ref.	
No	0.94 (0.75–1.19)	0.606	0.92 (0.73–1.15)	0.445	0.97 (0.81–1.15)	0.699
Alcohol						

Yes	Ref.		Ref.		Ref.	
No	1.14 (0.88–1.48)	0.321	1.10 (0.87–1.40)	0.431	0.97 (0.81–1.15)	0.699
Sport per week						
No - little sport	Ref.		Ref.		Ref.	
Much - daily sport	0.62 (0.49–0.78)	<0.001	1.08 (0.84–1.38)	0.562	1.15 (0.96–1.39)	0.134
Nutrition						
Unhealthy nutrition	Ref.		Ref.		Ref.	
Healthy nutrition	0.84 (0.68–1.04)	0.111	0.96 (0.78–1.17)	0.699	0.99 (0.84–1.16)	0.875
Number of employees in the company						
0–10	Ref.		Ref.		Ref.	
11–19	0.76 (0.38–1.51)	0.435	0.92 (0.54–1.57)	0.755	1.64 (0.90–2.99)	0.108
20–49	0.76 (0.40–1.46)	0.416	1.08 (0.65–1.81)	0.746	2.48 (1.42–4.33)	0.001
50+	1.20 (0.69–2.10)	0.521	1.87 (1.22–2.87)	0.004	2.58 (1.57–4.24)	<0.001
Business sector						
Manufacturing and processing industries	Ref.		Ref.		Ref.	
Service sector	1.06 (0.80–1.41)	0.676	1.03 (0.80–1.35)	0.821	0.83 (0.68–1.03)	0.093
Public service	0.90 (0.69–1.19)	0.462	1.15 (0.89–1.49)	0.289	1.26 (1.03–1.55)	0.024
Others	0.54 (0.30–0.96)	0.035	0.94 (0.53–1.65)	0.822	0.54 (0.30–0.98)	0.044
Professional position						
Employee	Ref.		Ref.		Ref.	
Worker	1.15 (0.77–1.72)	0.485	1.20 (0.79–1.59)	0.527	1.53 (1.19–1.97)	<0.001
Officer	0.34 (0.26–0.45)	<0.001	0.86 (0.64–1.16)	0.315	1.43 (1.12–1.83)	0.004
Trainee	1.36 (0.91–2.92)	0.099	1.37 (0.74–2.56)	0.315	1.16 (0.75–1.78)	0.513
Working hours						
Full-time	Ref.		Ref.		Ref.	
Part-time	1.54 (1.14–2.08)	0.004	1.66 (1.28–2.16)	<0.001	1.39 (1.14–1.70)	0.001
Marginally employed	0.47 (0.18–1.19)	0.110	1.65 (0.72–3.81)	0.238	0.86 (0.47–1.56)	0.613
Partial retirement	1.90 (0.54–6.75)	0.321	1.05 (0.48–2.29)	0.913	1.26 (0.69–2.29)	0.456
Social support						
Low	Ref.		Ref.		Ref.	
Middle	0.66 (0.47–0.91)	0.011	0.86 (0.64–1.15)	0.294	0.74 (0.59–0.92)	0.008

High	0.58 (0.41–0.83)	0.003	0.92 (0.67–1.26)	0.595	0.83 (0.65–1.07)	0.150
Life satisfaction						
Not at all-rather	Ref.		Ref.		Ref.	
satisfied-completely satisfied	1.08 (0.73–1.61)	0.699	0.88 (0.61–1.27)	0.493	0.87 (0.67–1.14)	0.301
	Help against bullying (n = 2,134)		**Info/Consulting on nutrition (n = 2,275)**		**Stress management (n = 2,465)**	
	OR (95% CI)	**p-value**	**OR (95% CI)**	**p-value**	**OR (95% CI)**	**p-value**
Gender						
Men	Ref.		Ref.		Ref.	
Women	0.56 (0.42–0.75)	<0.001	0.69 (0.56–0.85)	<0.001	0.66 (0.53–0.82)	<0.001
Age						
18–29 years	Ref.		Ref.		Ref.	
30–44 years	1.50 (1.01–2.33)	0.047	1.21 (0.89–1.64)	0.230	1.29 (0.95–1.75)	0.104
45–64 years	1.55 (1.06–2.27)	0.025	0.77 (0.57–1.03)	0.082	1.01 (0.75–1.36)	0.951
Socioeconomic status (SES)						
Low	Ref.		Ref.		Ref.	
Middle	2.22 (1.33–3.69)	0.002	0.92 (0.62–1.37)	0.692	1.54 (0.96–2.46)	0.071
High	2.67 (1.53–4.68)	<0.001	0.85 (0.56–1.30)	0.459	1.64 (1.00–2.68)	0.049
Subjective social status						
Lower-middle	Ref.		Ref.		Ref.	
Higher-upper	1.04 (0.79–1.37)	0.773	1.06 (0.87–1.29)	0.574	1.03 (0.84–1.26)	0.797
Subjective Health Status						
Poor-moderate	Ref.		Ref.		Ref.	
Good-very good	1.47 (1.07–2.02)	0.019	1.06 (0.83–1.36)	0.632	1.32 (1.02–1.71)	0.035
Attention to health						
Little-not at all	Ref.		Ref.		Ref.	
Strong-very strong	0.68 (0.52–0.88)	0.004	0.70 (0.58–0.84)	<0.001	0.69 (0.57–0.84)	<0.001
BMI						
Underweight	Ref.		Ref.		Ref.	
Normal weight	1.11 (0.47–2.61)	0.815	1.42 (0.70–2.91)	0.335	0.80 (0.36–1.81)	0.594
Overweight	1.11 (0.46–2.67)	0.819	1.40 (0.67–2.88)	0.376	0.73 (0.32–1.67)	0.457

Obesity	1.07 (0.41–2.56)	0.956	1.30 (0.62–2.74)	0.489	0.57 (0.24–1.32)	0.188
Smoking						
Yes	Ref.		Ref.		Ref.	
No	1.16 (0.87–1.55)	0.307	1.22 (0.99–1.50)	0.055	1.34 (1.08–1.67)	0.008
Alcohol						
Yes	Ref.		Ref.		Ref.	
No	1.06 (0.78–1.44)	0.703	1.01 (0.80–1.28)	0.912	0.88 (0.70–1.12)	0.297
Sport per week						
No - little sport	Ref.		Ref.		Ref.	
Much - daily sport	0.89 (0.66–1.21)	0.454	0.78 (0.63–0.98)	0.033	0.80 (0.64–1.01)	0.063
Nutrition						
Unhealthy nutrition	Ref.		Ref.		Ref.	
Healthy nutrition	0.91 (0.69–1.20)	0.495	0.80 (0.66–0.98)	0.028	0.89 (0.72–1.09)	0.248
Number of employees in the company						
0–10	Ref.		Ref.		Ref.	
11–19	1.07 (0.59–1.93)	0.836	1.23 (0.76–1.99)	0.400	1.17 (0.68–1.99)	0.570
20–49	1.11 (0.62–1.97)	0.734	1.69 (1.07–2.67)	0.023	0.65 (0.39–1.06)	0.083
50+	2.08 (1.29–3.35)	0.003	2.35 (1.63–3.40)	<0.001	1.46 (0.95–2.24)	0.085
Business sector						
Manufacturing and processing industries	Ref.		Ref.		Ref.	
Service sector	0.86 (0.57–1.30)	0.473	1.24 (0.97–1.59)	0.092	1.01 (0.76–1.35)	0.921
Public service	0.63 (0.43–0.92)	0.016	1.43 (1.12–1.84)	0.004	1.03 (0.78–1.34)	0.859
Others	0.41 (0.22–0.78)	0.006	1.82 (1.06–3.14)	0.030	1.14 (0.65–2.00)	0.650
Professional position						
Employee	Ref.		Ref.		Ref.	
Worker	0.81 (0.48–1.36)	0.429	0.99 (0.71–1.39)	0.962	1.93 (1.16–3.20)	0.011
Officer	1.10 (0.77–1.58)	0.591	1.05 (0.78–1.40)	0.771	0.93 (0.71–1.21)	0.564
Trainee	0.56 (0.29–1.08)	0.084	0.71 (0.41–1.21)	0.208	0.71 (0.41–1.24)	0.231
Working hours						
Full-time	Ref.		Ref.		Ref.	
Part-time	1.05 (0.77–1.45)	0.751	0.97 (0.76–1.24)	0.827	0.96 (0.76–1.22)	0.762

Marginally employed	0.91 (0.35–2.36)	0.847	1.08 (0.53–2.18)	0.842	0.81 (0.37–1.74)	0.582
Partial retirement	0.64 (0.27–1.56)	0.329	0.83 (0.39–1.75)	0.619	0.60 (0.28–1.28)	0.186
Social support						
Low	Ref.		Ref.		Ref.	
Middle	1.07 (0.71–1.62)	0.749	0.86 (0.64–1.16)	0.319	1.09 (0.82–1.45)	0.563
High	0.80 (0.52–1.24)	0.323	0.90 (0.66–1.24)	0.513	1.11 (0.82–1.51)	0.501
Life satisfaction						
Not at all-rather	Ref.		Ref.		Ref.	
Satisfied-completely satisfied	1.52 (0.98–2.36)	0.064	1.04 (0.73–1.50)	0.826	1.15 (0.81–1.64)	0.422

	Discussion/Working group (n = 1,137)		**Financial allowance (n = 1,690)**	
	OR (95% CI)	**p value**	**OR (95% CI)**	***p value***
Gender				
Men	Ref.		Ref.	
Women	0.81 (0.59-1.10)	0.177	0.76 (0.58-0.99)	0.038
Age				
18-29 years	Ref.		Ref.	
30-44 years	1.06 (0.68–1.65)	0.796	1.36 (0.97–1.92)	0.078
45-64 years	0.86 (0.56–1.31)	0.478	1.24 (0.89–1.74)	0.199
Socioeconomic status (SES)				
Low	Ref.		Ref.	
Middle	0.84 (0.50–1.43)	0.528	1.08 (0.66–1.77)	0.757
High	1.20 (0.68–2.14)	0.535	1.03 (0.60–1.76)	0.913
Subjective social status				
Lower-middle	Ref.		Ref.	
Higher-upper	1.33 (0.99–1.78)	0.054	1.27 (0.99–1.63)	0.061
Subjective Health Status				
Poor-moderate	Ref.		Ref.	
Good-very good	1.39 (0.98–1.97)	0.064	0.77 (0.56–1.07)	0.120
Attention to health				
Little-not at all	Ref.		Ref.	
Strong-very strong	0.77 (0.58–1.02)	0.068	0.78 (0.61–0.98)	0.033
BMI				
Underweight	Ref.		Ref.	
Normal weight	0.82 (0.21–3.18)	0.776	1.03 (0.39–2.73)	0.960
Overweight	0.74 (0.19–2.92)	0.670	1.14 (0.42–3.07)	0.799
Obesity	0.77 (0.19–3.08)	0.708	0.93 (0.34–2.59)	0.893
Smoking				

Yes	Ref.		Ref.	
No	1.34 (0.99–1.82)	0.056	0.86 (0.67–1.14)	0.322
Alcohol				
Yes	Ref.		Ref.	
No	0.75 (0.54–1.05)	0.091	1.28 (0.95–1.73)	0.106
Sport per week				
No - little sport	Ref.		Ref.	
Much - daily sport	1.01 (0.72–1.41)	0.964	0.89 (0.67–1.18)	0.421
Nutrition				
Unhealthy nutrition	Ref.		Ref.	
Healthy nutrition	0.91 (0.68–1.22)	0.529	0.72 (0.57–0.93)	0.010
Number of employees in the company				
0-10	Ref.		Ref.	
11-19	1.66 (0.77–3.55)	0.195	1.13 (0.60–2.16)	0.700
20-49	1.34 (0.64–2.84)	0.441	1.57 (0.84–2.93)	0.159
50+	2.98 (1.60–5.52)	<0.001	2.14 (1.27–3.62)	0.004
Business sector				
Manufacturing and processing industries	Ref.		Ref.	
Service sector	1.27 (0.87–1.85)	0.217	0.94 (0.70–1.25)	0.661
Public service	0.95 (0.66–1.37)	0.791	0.97 (0.72–1.31)	0.823
Others	2.26 (0.90–5.67)	0.081	0.48 (0.25–0.90)	0.023
Professional position				
Employee	Ref.		Ref.	
Worker	0.78 (0.49–1.24)	0.292	0.96 (0.63–1.46)	0.856
Officer	1.16 (0.77–1.76)	0.477	1.04 (0.64–1.68)	0.876
Trainee	2.76 (1.04–7.35)	0.042	1.53 (0.73–3.20)	0.257
Working hours				
Full-time	Ref.		Ref.	
Part-time	0.85 (0.59–1.22)	0.374	1.23 (0.91–1.67)	0.178
Marginally employed	0.52 (0.16–1.70)	0.280	1.04 (0.37–2.91)	0.946
Partial retirement	0.57 (0.19–1.72)	0.314	1.69 (0.53–5.42)	0.376
Social support				
Low	Ref.		Ref.	
Middle	0.65 (0.42–1.01)	0.054	1.09 (0.76–1.55)	0.653
High	0.65 (0.41–1.04)	0.071	1.16 (0.79–1.71)	0.445
Life satisfaction				
Not at all-rather	Ref.		Ref.	
satisfied-completely satisfied	0.90 (0.53–1.54)	0.705	0.93 (0.58–1.50)	0.765

Footnote: OR = odds ratio; CI = 95% confidence interval; p = significance level; Ref. = reference category.

Increasing age was associated with higher odds of non-participation in three measures: company sports, healthy canteen options, and anti-bullying support.

Regarding SES, medium- and high-SES individuals exhibited greater odds of non-participation in back health programs, stress management, and anti-bullying support compared with the low-SES group.

Subjective social status had almost no impact, with one exception: perceiving oneself as belonging to the "higher or upper" social class reduced the likelihood of non-participation in the healthy lunch offering (OR = 0.76, 95% CI = 0.65–0.90, p = 0.001).

Additional findings from logistic regression

Individuals who rated their health as "good to very good" exhibited a higher likelihood of non-participation in two specific offerings (stress management and anti-bullying support). In contrast, the reverse pattern emerged for company sports programs.

Health consciousness demonstrated widespread effects: across seven measures, respondents who reported high attentiveness to their own health displayed a reduced probability of non-participation.

Among lifestyle-related health variables, body weight and alcohol intake showed no notable impact. Non-smokers, however, were less inclined to join stress management initiatives compared with smokers. Frequent weekly sports engagement was linked to lower participation in two areas (company sports and nutrition information/counseling). A similar trend appeared for healthy eating habits in relation to two offerings (nutrition information/counseling and financial subsidies for sports-related activities).

Larger organizations were associated with elevated odds of employee non-participation across the measures.

Economic sector also played a role, yielding mixed directional effects. Compared with the manufacturing/processing sector, the "other" category showed decreased non-participation probabilities for company sports, healthy lunch options, and financial sports subsidies. The public service/healthcare/social services/administration sector similarly exhibited lower non-participation for anti-bullying assistance. Conversely, this sector had higher non-participation rates for healthy canteen provisions, while the "other" sector displayed increased non-participation for nutrition information/advice.

Occupational role influenced outcomes in varying directions. Effects were sporadic for manual workers, civil servants, and trainees. Notably, apprentices demonstrated greater odds of non-participation across nearly all measures—except company sports—relative to standard employees.

Part-time workers showed higher non-participation rates than full-time workers for three initiatives: back health programs, company sports, and healthy lunch options.

Moderate to high perceived social support (versus low support) was associated with reduced non-participation in company sports and healthy lunch measures.

Overall life satisfaction emerged as non-significant in the models.

The strongest predictors included gender, health attentiveness, and company size, with occupational position following closely. Age, socioeconomic status, self-reported health, and working hours also exerted meaningful effects, whereas lifestyle health indicators had minimal impact.

Company sports offerings were most affected by predictive factors (nine in total), followed by healthy canteen provisions (eight factors) and anti-bullying support (seven factors). For every measure except health-related discussion/working groups, the predictors produced both positive and negative associations with non-participation. Overall, the examined variables affected non-participation probabilities in varied and intricate patterns. The findings of the present investigation both corroborate and extend results from earlier research, while also revealing notable deviations and generating new perspectives. By relying on a representative sample of the German population, this study addresses an important gap left by previous work.

Variables that have traditionally been examined in relation to participation—namely gender, age, socioeconomic status (SES), company size, economic sector, employment type, self-rated health, and health awareness [6, 20–22, 28, 30]—were also shown to be relevant for explaining *nonparticipation*, including for workplace health promotion (WHP) measures that have not been analyzed previously. In addition, subjective social status, physical activity, dietary behavior, and general social support emerged as newly identified

factors associated with nonparticipation in WHP initiatives.

Clear differences in utilization patterns were observed, particularly with respect to gender. With the exception of company sports programs, women demonstrated significantly lower nonparticipation rates compared to men. Prior research suggests that this pattern may be attributable to women's generally higher health consciousness, greater use of preventive health services, and lower engagement in risky behaviors [21, 22]. Depending on how a health promotion measure is designed, its objectives, and how it is communicated, certain programs may appeal more strongly to men or to women [20–22]. Beck *et al*. (2016) report that WHP measures often appear to be more strongly oriented toward male employees [20]. If company sports offerings are indeed structured with men in mind—through aspects such as promotion strategies, facilities, or types of sport (details not captured in the GEDA survey)—this could contribute to reduced participation among women. Beyond design factors, other influences may also be relevant; unlike many other WHP activities, sports programs require fixed time commitments, which may conflict with women's disproportionate involvement in unpaid care work.

Gender-related differences in participation and nonparticipation—sometimes favoring women, sometimes men—are also shaped by study context, which may explain inconsistencies across the literature [20–23, 30].

Age-related differences were likewise evident. In line with earlier findings [22, 30], the likelihood of nonparticipation increased with age for approximately half of the examined measures. One possible explanation is that available offers may not sufficiently reflect the preferences or capacities of older employees or may lack appropriate adaptation [31]. Given that higher nonparticipation coincides with declining work ability associated with aging [32], occupational health management should pay closer attention to this issue. The established framework of selective optimization with compensation, commonly used to conceptualize "successful aging," may provide a useful foundation for developing measures that go beyond simply rebranding programs for "older colleagues" [33].

Consistent with previous studies [21, 22], part-time employment was associated with a higher probability of nonparticipation. Reduced time spent at the workplace may limit awareness of available offers and restrict opportunities to engage in WHP activities.

Both the economic sector [6, 20, 22, 28] and occupational position significantly influenced participation behavior. These findings underscore that WHP measures must always be interpreted within their specific organizational context, as needs differ substantially across sectors and job roles. Work-related demands vary widely, necessitating tailored programs rather than uniform offerings. Consequently, merely providing generic WHP measures is unlikely to be sufficient; effective implementation requires alignment with the concrete conditions of specific jobs and departments. Due to constraints of the GEDA questionnaire, this dimension could not be examined in greater depth and should be addressed in future research.

Larger organizations generally possess greater financial and human resources, enabling them to introduce and sustain WHP initiatives more easily [34, 35]. Nonetheless, this study found that nonparticipation increases with company size, a result consistent with earlier research [6, 22]. One commonly proposed explanation is the role of anonymity in large organizations. Extended communication pathways and multi-layered structures may prevent employees from becoming aware of available programs, recognizing their relevance to personal health or job demands, or understanding how participation can be integrated into their work schedules—especially when initiatives originate from distant organizational units.

Indicators related to body weight, smoking, alcohol consumption, physical activity, and nutrition were also included in the analysis. The minimal effects observed may stem from the subjective nature of these measures. Self-reported responses are susceptible to bias, and socially desirable answering cannot be excluded, potentially limiting external validity [21]. This raises the question of whether such indicators should continue to be used in future analyses, particularly given ongoing criticism of BMI as a classification tool for weight status [36]. Nevertheless, nonparticipation was lower among individuals reporting healthier dietary habits and higher levels of physical activity. Health behavior theories and empirical evidence support the notion that positive individual health practices can reinforce overall health orientation and increase engagement with preventive services [22, 23, 37]. In light of the overarching goal of WHP—to support employees in maintaining and improving health—it is important to consider how

individuals with low health awareness, poor nutrition, and limited physical activity can be effectively reached.

Finally, perceived social support from friends, family, and neighbors showed only a minor association with nonparticipation in this study. In contrast, Nöhammer *et al*. (2023) [19] identified a strong influence of workplace-related social support, particularly encouragement from colleagues and supervisors, on participation behavior. However, the boundary between supportive motivation and perceived pressure is narrow; while encouragement may foster participation, pressure can have the opposite, discouraging effect.

With respect to determinants of nonparticipation, future investigations should place greater emphasis on gender and—given ongoing demographic shifts—on older members of the workforce. Socioeconomic status (SES) should likewise receive closer attention. Empirical evidence consistently demonstrates a strong association between SES and health-related outcomes, with numerous studies reporting particularly robust links between educational attainment and health [21–23]. It therefore remains necessary to examine more thoroughly whether workplace health promotion (WHP) initiatives adequately reach and address individuals across all SES strata.

In this study, we observed that variables previously identified as drivers of participation in WHP initiatives also appear to influence nonparticipation, while several additional factors were newly identified.

Several methodological constraints must be acknowledged. The inclusion of a broad range of potential predictors expanded the regression model, and both statistical significance and the proportion of explained variance may be affected by the number of independent variables included. As a result, further relationships or interaction effects may have remained undetected. In this context, reference should be made to Hermann *et al*. (2021), who discuss additional limitations common to research in this field [21]. One example is the reliance on self-reported data, which may be distorted by inaccurate self-perception or socially desirable responding. Furthermore, the GEDA survey included only two items related to WHP measures, thereby restricting the analytical depth. The aggregation of response categories may also lead to information loss; however, given the aim of capturing a wide spectrum of potential influences, this limitation was considered acceptable. Another important constraint is the age of the dataset, as substantial changes in working life and society have occurred since 2014/2015. For instance, increased societal openness toward mental health issues may have contributed to the broader availability and acceptance of WHP initiatives. Despite the absence of more recent population-representative data and the assumption that the variables analyzed are less sensitive to such shifts, the findings still offer relevant preliminary insights. Nonetheless, comparisons with contemporary or longitudinal datasets would be required to determine the current validity of the results—particularly in the context of the COVID-19 pandemic—or to assess potential cohort effects. Such effects would reflect generational differences arising from varying social and environmental conditions. Contrary to expectations of expanded WHP provision due to social change, evidence suggests that the COVID-19 pandemic has reduced the priority of WHP initiatives within organizations [38]. Consequently, additional research is needed to explore how WHP offerings have evolved and whether these changes have altered participation patterns.

Conclusion

Despite the growing implementation of WHP programs across organizations, employee uptake remains incomplete. Influences on nonparticipation operate at multiple levels. Demographic characteristics, particularly age and gender, exert a pronounced effect, with increasing age associated with a higher likelihood of nonparticipation. In light of demographic developments in Western societies, greater consideration of older employees is therefore essential. The results further confirm that men participate less frequently in WHP initiatives and that unfavorable health behaviors and negative health-related attitudes are linked to elevated nonparticipation. These findings may also reflect broader issues of unequal access to and utilization of healthcare services [39].

From a gender perspective and with regard to health behavior and attitudes, WHP programs should be critically assessed in terms of their design, aims, and accessibility. Moreover, initiatives should be structured to accommodate part-time workers and to engage individuals with lower perceived SES or poorer health status.

Company size emerged as a key determinant of nonparticipation. While small enterprises require improved awareness of the benefits and implementation options for WHP, large organizations must also address

the underlying reasons why substantial proportions of their workforce fail to make use of existing offers. In an era marked by rapid labor market transformations driven by globalization and demographic change, it is increasingly important that employees not only maintain good health but also perceive organizational support in doing so. Greater attention to the drivers of nonparticipation is therefore warranted, alongside a stronger focus on clearly defined target groups to enhance participation rates.

Further investigation is necessary to clarify whether the factors identified here fully explain nonparticipation or whether additional barriers—such as time constraints or limited local accessibility—also play a role.

Although the present analysis identified multiple potential determinants, several questions remain unanswered due to the limitations of the questionnaire and call for further qualitative research. These include details regarding the frequency, timing, and location of WHP offerings. Previous small-scale, predominantly international studies have shown that such factors can substantially affect participation behavior [8, 17–19, 31]. Overall, the findings highlight a clear research gap, particularly concerning nonparticipation in WHP initiatives and the mechanisms underlying it.

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