

# BMJ Open Prevalence, associated factors and reasons for sickness presenteeism: a cross-sectional nationally representative study of salaried workers in Spain, 2016

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## ABSTRACT

**Objectives** The aim of this study was to estimate the prevalence of sickness presenteeism (SP), its associated factors and the reasons given for SP episodes, among the overall salaried population and excluding the ‘healthy’ workers.

**Design** Population-based cross-sectional study.

**Setting** Salaried population in Spain.

**Participants** Data were obtained from the third Spanish Psychosocial Risks Survey (2016), carried out between October and December 2016, n=1615.

**Main outcome measures** Self-reported episodes of SP and their reasons.

**Results** 23.0% (95% CI 19.2 to 26.8) of the workers exhibit SP, whereas among those manifesting having had some health problem in the preceding year, the figure was 53.0% (95% CI 46.9 to 59.1). The factors associated with SP when we study all workers are age, seniority, salary structure, working more than 48 hours, the contribution of worker’s wage to the total household income and downsizing; factors among the ‘unhealthy’ workers are working more than 48 hours and not having a contract. The most common reason for SP is ‘did not want to burden my colleagues’, 45.7% (95% CI 37.3 to 54.4), whereas ‘I could not afford it for economic reasons’ ranked third, 35.9% (29.4% to 42.9%), and 27.5% (21.3% to 34.6%) of the workers report ‘worried about being laid off’ as a reason for going to work despite being ill.

**Conclusions** The estimated frequency of SP in Spain is lower than certain other countries, such as the Scandinavian countries. The factors associated vary depending on the population analysed (all workers or excluding ‘healthy’ workers). The reason ‘I was worried about being laid off’ was much more common than the estimates for Sweden or Norway.

## BACKGROUND

The concept of presenteeism has been a topic of interest since the 1980s in the business and social science literature.<sup>1</sup> For these disciplines, the concern on presenteeism is mainly related to the economic impact due to the loss of productivity of people who attend work despite being ill or feeling like

## Strengths and limitations of this study

- First study presenting simultaneously the different factors associated with SP depending on the population analysed (overall or excluding ‘healthy’ workers).
- The sample size and the representativeness at population level.
- The survey includes an important number of socio-demographic and occupational variables that enable us to stratify to obtain relevant findings.
- Being based on a cross-sectional design, we cannot establish any causal relationship.

they should have taken sick leave.<sup>1,2</sup> A second approach, developed especially by European researchers, is focused in the act of attending work while sick and its effects on worker’s health.<sup>2,3</sup> In this approach, sickness presenteeism (SP) commonly replaces the term ‘presenteeism’.

SP is defined as the fact of working despite being ill,<sup>4</sup> and it should be considered an important public health issue due to its association with a range of health problems,<sup>5–10</sup> with future episodes of sickness absence<sup>7,8,11,12</sup>; furthermore, it has important implications for employing organisations, and theory in the domain of attendance at work.<sup>13</sup> On reviewing the literature, we have observed that the majority of studies estimating ‘prevalences’ of SP, do so on the working population not excluding the ‘healthy’ workers, who by definition are not at risk for SP.<sup>4–8,11,12,14–17</sup>

While still relatively scarce, evidence regarding this problem is becoming more common. The vast majority of research on SP has been developed using an equivalent question to that formulated by Aronsson *et al*: ‘Has it happened over the previous 12 months that you have gone to work despite feeling that you really should have taken sick leave due to your state

of health?' No research based on a similar question has been done in Spain. In fact, to the best of our knowledge, the quantitative evidence on SP in Spain is limited to one study published in 2010 that reported certain differences between Spanish-born and immigrant workers<sup>18</sup> and from the European Working Conditions Surveys (EWCS).<sup>3</sup>

Going to work despite being ill can be motivated by several reasons such as job insecurity, high workload, inability to adjust work demands, negative sanctions from colleagues or managers, work culture or work ethic.<sup>2 19</sup> But it can also be due to 'positive' reasons such as thinking that it is beneficial for health or simply because one enjoys his/her job.<sup>20</sup> Regarding this topic, and excepting some papers analysing only healthcare professionals,<sup>15 21–24</sup> to the best of our knowledge, the published literature is restricted to two papers in Norway and Sweden (one of them in general working population<sup>20</sup> and the other in long-term sick-listed subjects),<sup>14</sup> another in a Canadian public service organisation involved in a multiyear downsizing initiative<sup>25</sup> and a qualitative study conducted in the UK.<sup>26</sup>

The aim of this study was to estimate the prevalence of SP, determine the factors associated with it and to identify the reasons given for SP episodes, among both the entire salaried population and excluding the 'healthy' workers.

## METHODS

### Study population and design

Population-based cross-sectional study. Data were obtained from the third edition of the Spanish Psychosocial Risks Survey (ERP2016 in its Spanish acronym),<sup>27</sup> carried out between October and December 2016, and which is based on a representative sample of the salaried population in Spain obtained through a four-stage stratified design: the stratification is based on geographical area and size of municipality; the stages correspond to municipality, census tract, household and salaried worker. The ERP2016 is a representative survey of wage earners whose main aims are to characterise the salaried workers of the Spanish labour market in terms of the psychosocial risk dimensions defined in the Copenhagen Psychosocial Questionnaire (COPSOQ) method,<sup>28</sup> and to obtain the Spanish normative values of COPSOQ. The questionnaire was administered using computer-assisted personal interviewing) in the respondent's home, participation being voluntary and confidential, participants having given prior consent. The response rate was 70.1%. The specific sample for this study corresponds to n=1615 workers who had worked for at least 9 months during the last year, and who had undertaken paid work for at least 1 hour during the week prior to their interview (the latter being an International Labour Organization criterion<sup>29</sup> used to define the target population in the European Working Conditions Survey<sup>30</sup> or the EU Labour Force Survey<sup>31</sup>). This sample represents an overall population of 13 543 087 salaried workers. The data were analysed anonymously.

### Patient and public involvement

Participation was voluntary and confidential. It was proposed to the workers to be involved in the establishment of a cohort study. For this, his informed consent was requested.

### Sickness presenteeism

Self-reported SP was measured using the question (Q1): 'In the last 12 months, how many times have you worked even though you thought you should have taken sick-leave due to your state of health?' The answer being the total number of times. If the answer to the previous question was 'zero', the worker was then asked (Q2): 'You have said none. Was this because you were never sick, or because you took sick leave whenever you were sick?'

For purposes of comparability, the answer was subsequently categorised as proposed by Aronsson<sup>16</sup> into: (1) 'no, never' (Q1=0 and Q2='I took sick leave when I was sick'); (2) 'yes, once' (Q1=1); (3) '2–5 times' (2≤Q1≤5); (4) 'more than five times' (Q1 >5); (5) 'I have not been sick during the past 12 months' (Q1=0 and Q2='I was never sick'). The prevalence of SP was estimated using the usual criterion<sup>4</sup> which considers that a worker exhibits SP if he/she went to work twice or more during the preceding year even though 'sick'.

### Reasons for SP

Each worker who had one or more episodes of SP answered the question 'Why did you go to work even if you thought that you should have taken a sick leave?' with 10 non-exclusive options. The list of possible reasons was elaborated by the authors based on the paper published by Johansen *et al.*<sup>20</sup>

### Covariates

Each worker was characterised sociodemographically (sex, age and country of birth), and based on his/her occupational class, aspects of the job (seniority, employment status, working hours, salary structure, downsizing) and the importance of his/her wage in relation to the household income.

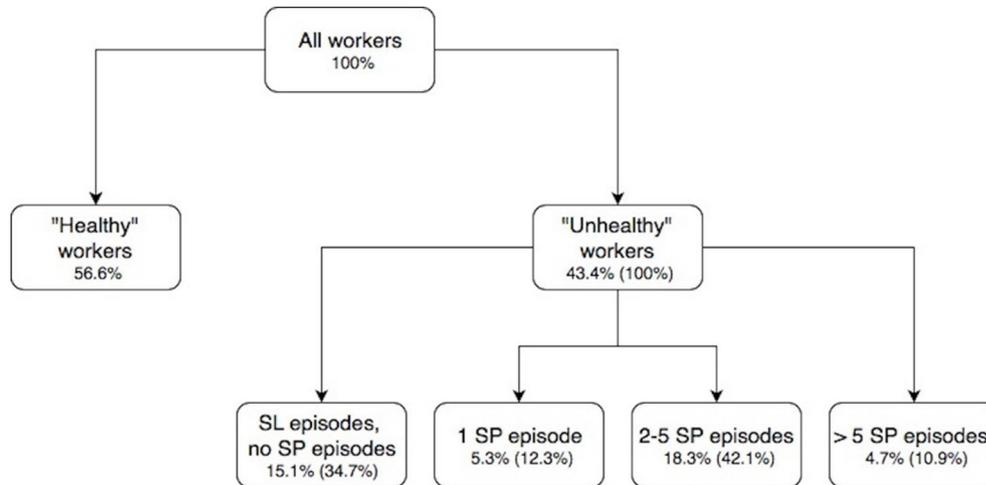
### Statistical analysis

Frequency distributions of SP were elaborated for the whole population and stratified by covariate, and the SP prevalences (overall and for each group according to the covariate categories) were estimated through their 95% CI.

To identify the factors possibly associated with SP, the corresponding prevalence ratios (aPR) were estimated, adjusted for sex, age and occupational class, by fitting robust Poisson models. All results are presented: (a) in relation to all workers; (b) considering only the 'unhealthy' workers (those classified as 1, 2, 3 or 4 according to the Aronsson's SP categories—see the Sickness presenteeism section).

To determine the frequency of the reasons for SP, the percentage and its 95% CI were estimated for each reason.

Sampling weights were calculated to account for the probability of a worker being selected according to the



**Figure 1** Distribution of workers according to 'health' status and SP episodes. SL, sick leave; SP, sickness presenteeism.

sampling design and to comply with the sex and occupational class distribution of the Spanish salaried population. All analyses were conducted using the 'svy' command of the STATA statistical package V.11.0.

## RESULTS

**Figure 1** shows the distribution of the workers according to their 'health' status and SP. The first percentages are the estimations on the total workers, whereas the values in parentheses correspond to the percentages exclusively among the 'unhealthy' workers (those with sick leave (SL) and/or SP episodes). We can observe that 71.7% of the total workers do not report SP episodes (56.6% because they did not manifest having felt, at any time in the past 12 months, that they should have stayed home for health reasons and consequently they can not present any SP episode; and 15.1% because they did take SL when 'sick'), 5.3% present one SP episode, 18.3% present between two and five and 4.7% more than five episodes. If we limit our attention to the 'unhealthy' workers, 34.7% do not report any SP episode and 12.3%, 42.1% and 10.9% report 1, 2–5 or more than 5 SP episodes, respectively.

**Table 1** presents the results related with the prevalences and associated factors when we consider all the workers studied. The overall prevalence of SP, based on the usual criterion of 'two or more episodes' is 23.0% (95% CI 19.2% to 26.8%). The prevalence is clearly lower among workers aged 16–24 years, 9.8% (95% CI 4.3% to 15.4%), than among the rest; workers who have been in their job for less than 1 year have a lower prevalence, 14.0% (95% CI 8.0% to 19.9%), especially in comparison with those who have been in the job for 1–5 years (aPR=1.84; 95% CI 1.16 to 2.93); among those working more than 48 hours/week, the prevalence reaches 35.6% (95% CI: 20.6% to 50.5%), that is, 1.62 times higher than those who work between 35 and 40 hours; compared with workers with a fixed salary, the prevalence also rises among workers whose salary is partly fixed, partly variable (aPR=1.57; 95% CI 1.05

to 2.34) or entirely variable (aPR=1.93; 95% CI 1.30 to 2.88); workers whose salary is the only source of household income have a higher prevalence, 29.4% (95% CI 23.4 to 35.4); finally, workers in firms which performed downsizing in the last year have higher prevalence (aPR=1.55; 95% CI 1.15 to 2.10).

**Table 2** presents results only for workers who manifested having felt, at some time in the past 12 months, that they should have stayed home for health reasons. The prevalence of SP (two or more episodes) rises to 53% (95% CI 46.9% to 59.1%), and the majority of differences between groups observed in **Table 1** become moderate or disappear. Receiving an entirely variable salary almost reaches statistical relevance (aPR=1.33; 95% CI 0.99 to 1.79). The only statistically remarkable findings show a higher prevalence among workers without a contract (aPR=1.51; 95% CI 1.02 to 2.23) and among those working more than 48 hours weekly (aPR=1.41; 95% CI 1.08 to 1.83). In fact, employment status and weekly working hours are associated (data not shown), so that almost half of those who do not have a contract are concentrated in the two extreme categories of weekly hours, less than 20 hours (21.8%) and more than 48 (25.1%), while 2.4% are in the category 35–40 hours. In contrast, among the permanent workers, 70.5% lie in the category 35–40 hours, 3.9% work less than 20 hours and 9.5% more than 48.

Nearly 10% of the workers with SP episodes do not choose any reason among the 10 that were proposed, and 32.9% four or more, the average number of reasons being 2.9±2.9. **Table 3** shows the frequencies of the reasons for SP. Almost half of the workers who have experienced SP report 'did not want to burden my colleagues', making it the most frequent reason, 45.7% (95% CI 37.3% to 54.4%). Economic motives rank third, 35.9% (95% CI 29.4% to 42.9%), above the concern to be laid off, 27.5% (21.3% to 34.6%), while 11.8% (7.6% to 17.8%) of the workers with SP episodes went to work because they thought it was beneficial to their health.

**Table 1** Distribution of covariates, episodes, prevalences of presenteeism and prevalence ratios adjusted by sex, age and occupational class (aPR), all workers

	Weighted distribution, %	SP episodes distribution, %				Prevalence, % (95% CI)	aPR (95% CI)
		0	1	2–5	>5		
<b>Sex</b>							
Male	51.9	74.4	4.0	17.9	3.7	21.6 (16.5 to 26.7)	1
Female	48.1	68.7	6.8	18.7	5.8	24.4 (19.3 to 29.5)	1.09 (0.81 to 1.47)
<b>Age</b>							
16–24	8.9	80.3	9.9	9.1	0.7	9.8 (4.3 to 15.4)	1
25–34	19.8	74.3	5.3	16.4	4.1	20.4 (14.1 to 26.7)	2.02 (1.07 to 3.79)
35–44	28.5	69.7	3.3	22.5	4.5	27.0 (19.3 to 34.7)	2.62 (1.39 to 4.92)
45–54	29.3	68.6	5.2	18.7	7.6	26.3 (19.2 to 33.3)	2.55 (1.43 to 4.55)
>54	13.6	73.0	7.2	17.1	2.7	19.8 (11.6 to 27.9)	1.93 (0.94 to 3.95)
<b>Country of birth</b>							
Spanish or OECD	88.4	71.2	5.4	18.9	4.5	23.4 (19.3 to 27.5)	1
Non-OECD	11.6	75.5	4.4	13.7	6.4	20.0 (12.7 to 27.4)	0.95 (0.64 to 1.40)
<b>Occupational class</b>							
No manual	47.1	68.9	5.1	20.5	5.6	26.0 (20.1 to 31.9)	1
Manual	52.9	74.2	5.5	16.3	4.0	20.2 (16.3 to 24.2)	0.79 (0.61 to 1.04)
<b>Seniority (years)</b>							
<1	13.8	82.4	3.6	10.0	4.0	14.0 (8.0 to 19.9)	1
1–5	27.2	66.6	6.6	21.8	5.0	26.8 (20.1 to 33.5)	1.84 (1.16 to 2.93)
5–10	16.1	72.0	5.8	18.4	3.9	22.2 (14.1 to 30.3)	1.47 (0.85 to 2.56)
≥10	42.8	71.3	4.9	18.6	5.1	23.7 (18.4 to 29.1)	1.45 (0.88 to 2.40)
<b>Weekly working hours</b>							
<20	6.5	76.4	7.0	12.2	4.3	16.6 (7.7 to 25.4)	0.75 (0.44 to 1.26)
20–34	15.6	72.6	7.0	14.8	5.6	20.4 (12.2 to 28.5)	0.86 (0.56 to 1.32)
35–40	61.4	71.9	4.7	18.6	4.9	23.4 (18.8 to 28.0)	1
41–48	8.6	78.7	3.6	13.4	4.3	17.7 (6.6 to 28.8)	0.80 (0.42 to 1.51)
>48	8.0	57.1	7.3	32.7	2.8	35.6 (20.6 to 50.5)	1.62 (1.04 to 2.54)
<b>Salary structure</b>							
Fixed	83.8	74.0	5.2	17.2	3.6	20.8 (16.8 to 24.8)	1
Mixed	10.7	61.1	6.7	25.4	6.8	32.2 (20.8 to 43.7)	1.57 (1.05 to 2.34)
Variable	5.5	56.7	5.3	20.0	18.0	38.0 (22.5 to 53.5)	1.93 (1.30 to 2.88)
<b>Contribution of worker's wage to total household income</b>							
≤40%	21.4	74.1	6.1	14.7	5.1	19.8 (13.6 to 26.0)	1
41%–60%	34.3	75.9	4.5	14.6	5.0	19.5 (13.9 to 25.2)	0.99 (0.65 to 1.50)
61%–99%	11.9	74.5	4.5	16.6	4.5	21.1 (11.7 to 30.4)	1.11 (0.67 to 1.85)
100%	32.4	64.6	6.0	25.1	4.3	29.4 (23.4 to 35.4)	1.53 (1.05 to 2.23)
<b>Employment status</b>							
Permanent	76.2	71.5	5.0	18.9	4.7	23.6 (19.4 to 27.7)	1
Temporary	20.1	72.3	6.9	16.8	4.0	20.8 (14.3 to 27.4)	0.95 (0.68 to 1.33)
No contract	3.7	73.2	4.5	13.6	8.8	22.3 (6.7 to 38.0)	1.03 (0.50 to 2.13)
<b>Downsizing</b>							
No	78.8	74.3	5.0	16.9	3.8	20.7 (16.3 to 25.0)	1
Yes	21.2	60.7	7.0	23.7	8.5	32.2 (25.5 to 39.0)	1.55 (1.15 to 2.10)
Overall		71.7	5.3	18.3	4.7	23.0 (19.2 to 26.8)	

SP, sickness presenteeism. OECD, Organisation for Economic Co-operation and Development.

**Table 2** Distribution of covariates, episodes, prevalences of presenteeism and prevalence ratios adjusted by sex, age and occupational class (aPR), excluding workers who have not been sick during the past 12 months

	Weighted distribution, %	SP episodes distribution, %				Prevalence, % (95% CI)	aPR (95% CI)
		0	1	2 to 5	>5		
<b>Sex</b>							
Male	49.2	37.8	9.6	43.5	9.1	52.6 (43.6 to 61.5)	1
Female	50.8	31.7	14.9	40.7	12.6	53.4 (45.4 to 61.3)	1.01 (0.80 to 1.26)
<b>Age</b>							
16–24	4.9	17.1	41.6	38.3	3.1	41.4 (21.1 to 61.6)	1
25–34	20.2	42.0	11.9	37.0	9.2	46.1 (31.8 to 60.4)	1.11 (0.63 to 1.95)
35–44	29.8	33.2	7.3	49.7	9.8	59.5 (49.2 to 69.8)	1.42 (0.83 to 2.43)
45–54	32.7	35.2	10.6	38.6	15.6	54.2 (42.7 to 65.6)	1.30 (0.78 to 2.15)
>54	12.5	32.0	18.2	43.0	6.9	49.8 (36.8 to 62.8)	1.20 (0.68 to 2.13)
<b>Country of birth</b>							
Spanish or OECD	90.0	34.8	12.3	42.8	10.2	53.0 (46.4 to 59.5)	1
Non-OECD	10.0	34.5	11.7	36.6	17.2	53.8 (39.4 to 68.3)	1.05 (0.79 to 1.40)
<b>Occupational class</b>							
No manual	51.7	34.7	10.8	42.9	11.7	54.6 (45.5 to 63.6)	1
Manual	48.3	34.8	14.0	41.1	10.1	51.2 (44.3 to 58.0)	0.94 (0.77 to 1.14)
<b>Seniority (years)</b>							
<1	10.2	44.9	11.4	31.4	12.4	43.7 (27.1 to 60.3)	1
1–5	28.2	25.7	14.7	48.6	11.0	59.6 (48.7 to 70.5)	1.37 (0.89 to 2.11)
5–10	16.1	35.4	13.3	42.4	8.9	51.3 (37.3 to 65.4)	1.12 (0.69 to 1.82)
≥10	45.5	37.8	10.7	40.3	11.2	51.5 (42.7 to 60.3)	1.09 (0.70 to 1.71)
<b>Weekly working hours</b>							
<20	4.9	28.5	21.3	37.1	13.1	50.2 (32.0 to 68.4)	1.04 (0.71 to 1.51)
20–34	14.0	29.8	18.0	37.9	14.3	52.2 (36.8 to 67.6)	1.04 (0.75 to 1.44)
35–40	65.6	39.3	10.2	40.0	10.5	50.5 (43.3 to 57.7)	1
41–48	6.0	29.5	11.8	44.5	14.3	58.7 (37.1 to 80.4)	1.18 (0.83 to 1.69)
>48	9.5	16.6	14.2	63.6	5.5	69.1 (52.5 to 85.7)	1.41 (1.08 to 1.83)
<b>Salary structure</b>							
Fixed	79.0	36.4	12.7	42.1	8.8	50.9 (44.1 to 57.7)	1
Mixed	13.7	30.0	12.0	45.8	12.2	58.0 (43.0 to 72.9)	1.16 (0.87 to 1.54)
Variable	7.3	25.0	9.2	34.7	31.1	65.8 (47.7 to 83.9)	1.33 (0.99 to 1.79)
<b>Contribution of worker's wage to total household income</b>							
≤40%	17.3	26.3	17.4	41.9	14.4	56.3 (44.5 to 68.2)	1
41%–60%	35.2	46.0	10.2	32.7	11.2	43.8 (32.3 to 55.4)	0.77 (0.55 to 1.09)
61%–99%	11.0	36.2	11.2	41.4	11.2	52.6 (37.2 to 68.1)	0.93 (0.66 to 1.29)
100%	36.5	27.4	12.4	51.4	8.8	60.3 (52.5 to 68.0)	1.06 (0.83 to 1.35)
<b>Employment status</b>							
Permanent	79.9	37.3	10.9	41.5	10.4	51.8 (45.1 to 58.6)	1
Temporary	17.5	26.4	18.3	44.7	10.6	55.3 (42.8 to 67.9)	1.11 (0.86 to 1.42)
No contract	2.6	13.2	14.6	43.8	28.3	72.2 (48.5 to 95.9)	1.51 (1.02 to 2.23)
<b>Downsizing</b>							
No	74.2	37.5	12.2	41.0	9.3	50.3 (42.7 to 57.9)	1
Yes	25.8	26.4	13.2	44.4	16.0	60.4 (51.8 to 69.1)	1.20 (0.97 to 1.49)
<b>Overall</b>		34.7	12.3	42.1	10.9	53.0 (46.9 to 59.1)	

SP, sickness presenteeism. OECD, Organisation for Economic Co-operation and Development.

**Table 3** Reasons given for sickness presenteeism

Why did you go to work even if you thought that you should have taken a sick leave?	Percentage (95% CI)
Because I did not want to burden my colleagues	45.7 (37.3 to 54.4)
Because I would have accumulated the job	38.5 (31.5 to 45.9)
Because I could not afford it for economic reasons	35.9 (29.4 to 42.9)
Because no one else could do my job	35.5 (29.8 to 41.7)
Because I did not want to be considered lazy or unproductive	31.6 (24.7 to 39.4)
Because I was worried about being laid off	27.5 (21.3 to 34.6)
Because I was worried about being subjected to some other kind of retaliation	26.3 (20.0 to 33.7)
Because I enjoyed my work	21.4 (15.4 to 29.0)
Because I did not want to be considered weak	20.0 (15.1 to 26.1)
Because going to work was beneficial for my health	11.8 (7.6 to 17.8)

## DISCUSSION

This study allows for first time to obtain the estimated prevalences of SP in Spain using a similar question to that formulated by Aronsson<sup>4</sup> which is widely used in research on SP. Furthermore, to the best of our knowledge, this paper is the first that shows the different factors associated with SP depending on the population analysed (overall or excluding ‘healthy’ workers). Quantifying the frequency of SP and its associated factors has practical implications because it can help in the planning of possible interventions aiming to reduce its occurrence. This is important because SP has a direct effect on worker’s health<sup>10</sup> but it is also related with future long-term sickness absence<sup>11 12</sup> that can represent more severe health problems and an increase of costs for employee, employer and society.<sup>12</sup>

The frequency of SP estimated when we analyse the entire wage-earning population is lower than that obtained in studies conducted in Scandinavian countries, using an equivalent question and the same criteria for definition of SP. Thus, studies conducted in Sweden<sup>7 16</sup> and Denmark<sup>19</sup> show that the percentage of workers with two or more SP episodes exceeds 50%, whereas in our study this figure was less than half. One must be cautious however, given that the points in time do not coincide, and in some cases the degree of representativeness of samples in which estimates are made is not clear. One must also be aware of the difficulty of comparing studies between countries, since the influence that different systems of social protection (unemployment, exercise of workers’ rights, etc) may have on episodes of SP must be taken into account, as well as cultural aspects related with the perception of being incapable of working or related with work ethics differing between countries.

In addition to applying the approach most widely used in the literature which estimates the proportion of workers with SP out of the total number of workers, we have opted to complement the results reporting findings only for workers who manifested having health problems during the preceding year. If we accept ‘Going to work despite judging that one should have reported in sick’,<sup>4</sup> or any equivalent expression as the definition of SP, it is

clear that to be ‘at risk of being presenteeist’ the necessary previous condition is having been ‘sick’, and hence it seems that the denominator over which to estimate the prevalence of presenteeism should be the latter, rather than the total number of workers. Of the few authors taking this approach, d’Errico,<sup>3</sup> using EWCS data, places Spain slightly below the EU27 average, and above other Mediterranean countries such as Italy or Greece, and clearly below UK and the Scandinavian countries.

Depending on the approach used, we observe differences in terms of both magnitudes and associated factors. Thus, taking all workers into account, it would appear that the phenomenon under study is strongly associated with variables such as age or seniority, and others as the salary structure, working more than 48 hours, contribution of worker’s salary to the household income and downsizing. When we exclude ‘healthy’ workers, the association of these factors disappears or their strength is moderated. We hypothesise that this phenomenon is due to the fact that the effect of these factors is more important on the worker’s health status than on the decision about whether to take SL or not. In our opinion, age and seniority are two clear examples of this fact. Both variables are closely related to the health status, age directly and seniority indirectly through age, but instead it is foreseeable that older workers (with greater seniority) commonly have consolidated rights that should allow them to take SL if necessary. On the other hand, among the ‘unhealthy’ workers not having a work-contract emerges as the factor most strongly associated which was not significantly associated when we took all workers into account. It is worth mentioning that Agudelo-Suárez *et al*<sup>18</sup> found this association in Spain, exclusively for foreign-born workers living in Spain for two or more years. If SP can be in the most part seen as the impossibility of exercising the right of taking SL, then not having a contract means not having the legal right. The second significant factor was working more than 48 hours. This association was previously found in a Finnish study<sup>17</sup>; in Denmark a similar result was found, in this case for the factor ‘working more than 45 hours’.<sup>19</sup> In both studies, it was also seen that this factor

is positively associated with SP and negatively with absenteeism, suggesting that these groups chose to go to work ill rather than taking SL, despite having the same levels of morbidity as other groups.<sup>19</sup> Working more than 48 hours could be an indicator of long working hours or overtime, in any case could be related to having a demanding job (as has been shown by other studies)<sup>32</sup> in terms of amount of work or accumulation of work or burdening colleagues could be reasons in a country where the crisis has considerably reduced staffing levels. It is also worth mentioning that we identified an association between employment status and weekly working hours. It probably denotes that not having a contract and working more than 48 hours share part of the effect on SP.

The most common reason for SP was 'did not want to burden my colleagues', as in other studies conducted in Norway and Sweden<sup>14 20</sup> and along the same line as a Canadian study.<sup>25</sup> It seems that in Spain the 'negative' reasons for SP are more frequent than in the Scandinavian countries, whereas the 'positive' reasons are less frequent: we found more than one out of four workers expressing being worried about being laid off, considerably higher than that estimated in Sweden, 4%, or Norway, 3%. However, the reason 'Because I enjoyed my work' was less common than in those countries (30% and 44% in Sweden and Norway, respectively).<sup>20</sup> This could be due to several factors, possibly very different between Spain and the Scandinavian countries, such as labour management practices or structural variables (eg, unemployment rate). On the other hand, the fact that nearly 10% of the workers with SP episodes in our study did not select any reason might indicate that the list of motives is not fully comprehensive. This could be related to the fact that the reasons why SP occurs can be very diverse and promoted both from the personal and institutional context.<sup>26</sup> Future research should be conducted on this topic, using open-labelled answers or qualitative approaches to find unknown reasons.

This study has some limitations. Being based on a cross-sectional design, we cannot establish any causal relationship and the associations that we found should be tested in longitudinal studies. On the other hand, like any study based on a self-reported outcomes, we can not exclude the existence of some biases in the worker's answers. Some studies have shown that employees tend to under-report their sickness absence,<sup>33</sup> but there are no studies addressing under-reporting of SP. We also do not know if there is a bias in the reasons given for SP: it could happen that some of the reasons are socially more acceptable than others and consequently workers tend to choose them. The fact that the interview was carried out anonymously in the worker's home should lessen this bias, if it really exists. On the other hand, the good response rate, the sample size and the representativeness at population level are notable strengths of our study.

Researchers should consider that studying SP in relation to the totality of workers, or restricting to those

reporting health problems, represents the study of two different phenomena. The first approach is based on a mixture of two subpopulations ('healthy' and 'unhealthy' workers) where some people are not really exposed to SP because of their good health status and, consequently, describes a phenomenon which is a mixture of health status and exercising of rights (where perhaps the former has more weight); the second approach focuses specifically on the exercise of the right to take SL, especially when the episodes are not generated by 'positive' reasons.

Finally, our study seems to indicate that the prevalence of SP in Spain could be remarkably less than other European countries but, at the same time, the reasons that motivate the SP episodes seem to be more often negative, which could lead to more serious consequences. Any research on SP should include not only the estimation of its frequency but also the reported reasons. Two populations with the same prevalence but a remarkably different distribution of reasons could capture distinct phenomena and, consequently, different preventive measures should be applied.

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