Burden of Self-Reported Migraine in the Pfizer Ireland Workforce – a Cross-Sectional Study

Dooley, Garreth[1]; Nakajima, Karina[2]; Patten, Sarah[1]; Chern Chuan[3], Soo; Feng[4], Dai; Turko, Alexis[3]

[1] Pfizer Healthcare Ireland, Dublin, Ireland; [2] Pfizer Brazil, Sao Paolo, Brazil; [3] Pfizer Inc, NY, USA; [4] Pfizer Inc, Connecticut, USA

Poster ID is P057

INTRODUCTION

Migraine affects about 14% of the global population[1] and is a major cause of disability-adjusted life years (DALYs) among both young people and adults worldwide[2]. Among adults aged 20 to 59, migraine is one of the leading contributors to DALYs, significantly affecting quality of life and work productivity during crucial working years. Often underdiagnosed and inadequately treated, the productivity impact of migraine tends to be underestimated. To address this, workplace migraine awareness programs have become more widespread[3]. This study aimed to assess the prevalence of migraine and its effect on workplace productivity among employees at Pfizer Ireland.

METHODS

This cross-sectional online survey was conducted among the entire adult Pfizer Ireland workforce from February to March 2025. Anonymous data were collected on demographics, migraine history, and work productivity (using WPAI-migraine). Migraine status was both self-reported and assessed using the ID-Migraine™ screening tool. Descriptive analysis are presented for migraine prevalence and its impact on work productivity based on migraine status and migraine type.

RESULTS

MIGRAINE PREVALENCE

Out of an estimated workforce of 6,517 employees, 1,131 completed the survey, resulting in a response rate of 17.4%. Among the respondents, just over half were men (51.4%), 56.3% were aged between 30 and 49 years, 33.1% self-reported having a migraine diagnosis, and 38.6% tested positive for MST (Table 1 and 2).

Table 1: Migraine prevalence

Migraine status	Pfizer Ireland workforce N=1,131
n (%)	
MST positive	437 (38.6)
MST negative	694 (61.4)
With self-reported migraine	374 (33.1)
Without self-reported migraine	757 (66.9)
With self-reported migraine AND MST positive	321 (28.4)
With self-reported migraine AND MST positive AND Clinician diagnosed	189 (16.7)
With self-reported migraine AND MST negative	53 (4.7)
Without self-reported migraine AND MST negative	641 (56.7)
Without self-reported migraine AND MST positive	116 (10.3)
With self-reported migraine, n	374
Self-diagnosed	160 (42.8)
Clinician diagnosed	214 (57.2)
Episodic	267 (71.4)
Chronic	28 (7.5)
Unknown	79 (21.1)

Amongst those with self-reported migraine, 160 (42.8%) indicated that their migraine was self-diagnosed, while 214 (57.2%) was diagnosed by a clinician. The actual prevalence of migraine in the study population, considered by participants with self-reported migraine, MST positive and with a clinician diagnosis, was 16.7%. Episodic and chronic migraine were reported by 71.4% and 7.5% of participants with self-reported migraine, respectively. About 10% of participants without self-reported migraine were MST positive (Table 1).

Table 2: Demographic characteristics (subgroup description of participants with self-reported migraine)

		Self-reported migraine				p-value (Fisher's exact)	
	Overall (N=1,131)	With migraine (N=374)	Without migraine (N=757)	Episodic migraine (N=267)	Chronic migraine (N=28)	With vs without migraine	Episodic vs chronic
n (%)							
Age band						0.004	0.462
<30	177 (15.7)	64 (17.1)	113 (14.9)	43 (16.1)	8 (28.6)		
30-39	258 (22.8)	104 (27.8)	154 (20.3)	82 (30.7)	9 (32.1)		
40-49	379 (33.5)	120 (32.1)	259 (34.2)	88 (33.0)	6 (21.4)		
50-59	283 (25.0)	81 (21.7)	202 (26.7)	50 (18.7)	5 (17.9)		
>60	34 (3.0)	5 (1.3)	29 (3.8)	4 (1.5)	0 (0.0)		
Gender						<0.001	0.223
Male	581 (51.4)	136 (36.4)	445 (58.8)	99 (37.1)	7 (25.0)		
Female	549 (48.5)	238 (63.6)	311 (41.1)	168 (62.9)	21 (75.0)		
Prefer not to answer	1 (0.1)	0 (0.0)	1 (0.1)	0 (0.0)	0 (0.0)		

The prevalence of migraine is significantly higher among females (63.6%) compared to males (36.4%) (p<0.001). Among participants with self-reported migraine and MST positive, the proportion of those with a clinician-made diagnosis is significantly higher among women (74.1%) compared to men (25.9%) (p<0.001) (Table 2; Figure 1).

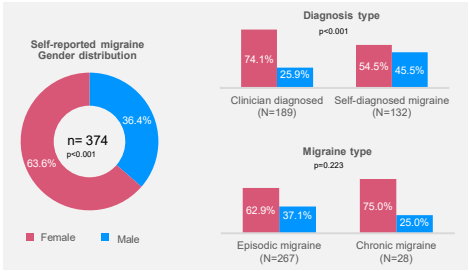

Figure 1. Gender distribution among participants with self-reported migraine

WORK PRODUCTIVITY IMPACT

Work time loss (absenteeism) due to migraine was reported by 37/345 (10.7%) of participants with self-reported migraine, resulting in mean of 17.5% (SD 23.0) of time missed in the past 7 days. Impairment while working (presenteeism) due to migraine was reported by 185/345 (53.6%) resulting in a mean of 28.4% (SD 17.2) of work productivity impairment in the past 7 days (Table 3).

Table 3. WPAI-migraine

	Overall (N=345)
Participants who reported missing hours due to migraine in the past 7 days, n (%)	37 (10.7)
WPAI absenteeism	
Mean	17.49
SD	23.05
Participants who reported productivity impairment while working due to migraine in the past 7 days, n (%)	185 (53.6)
WPAI-presenteeism	
Mean	28.38
SD	17.21

Overall, participants with self-reported migraine had a mean work productivity loss and activity loss in the past 7 days of 16.1% (SD 20.4) and 26.4% (SD 30.4). Within this population, those who reported chronic migraine experienced the greatest impact on productivity, with a productivity loss and activity loss of 27.1% and 43.2%, respectively. In addition, participants with a clinician diagnosis presented a slightly greater impact on work productivity compared to self-diagnosed ones (Figure 2; Table 4).

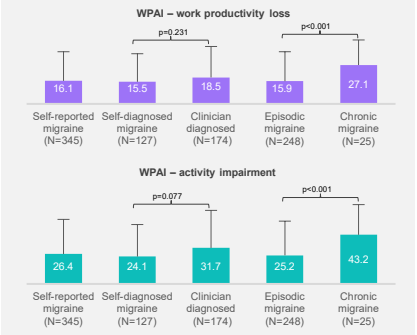

Figure 2. Work productivity loss and activity impairment among participants with self-reported migraine

Table 4: WPAI by migraine status

	MST positive			Migraine type		p-value (Wilcoxon signed-rank test) MST positive	Migraine type
	Self-reported migraine (N=345)*	Self-diagnosed migraine (N=127)	Clinician diagnosed (N=174)	Episodic migraine (N=248)	Chronic migraine (N=25)	Self-diagnosed vs clinician diagnosed	Episodic vs Chronic
WPAI absenteeism						0.112	0.68
Mean	1.88	1.07	2.94	2.01	1.09		
SD	9.22	4.05	12.43	8.73	2.71		
Median	0	0	0	0	0		
Min-Max	0-100	0-25	0-100	0-100	0-10		
Q1-Q3	0-0	0-0	0-0	0-0	0-0		
WPAI-presenteeism						0.292	0.001
Mean	15.22	14.8	17.18	14.72	26.4		
SD	18.96	18.72	19.73	18.81	17.29		
Median	10	10	10	10	30		
Min-Max	0-100	0-70	0-100	0-80	0-60		
Q1-Q3	0-30	0-20	0-30	0-20	20-30		
WPAI-work productivity loss						0.231	0.001
Mean	16.11	15.45	18.49	15.85	27.14		
SD	20.35	19.62	21.64	20.62	17.55		
Median	10	10	10	10	30		
Min-Max	0-100	0-70	0-100	0-100	0-61.9		
Q1-Q3	0-30	0-27.39	0-30	0-27.33	20-37		
WPAI-activity impairment						0.077	0.001
Mean	26.35	24.09	31.67	25.16	43.2		
SD	30.43	28.15	33.02	30.07	26.57		
Median	10	10	25	10	50		
Min-Max	0-100	0-100	0-100	0-100	0-100		
Q1-Q3	0-50	0-45	0-57.5	0-50	30-50		

* Only participants with self-reported migraine completed the WPAI questionnaire; 29 participants were removed from the WPAI analysis due to data inconsistencies

LIMITATIONS

One limitation of this survey study is its reliance on self-reported data, which may introduce recall bias or inaccuracies in participants' reporting of migraine and MST status. Additionally, the cross-sectional design does not allow for assessment of causality between migraine characteristics and productivity impact. Finally, selection bias may occur if individuals with more severe symptoms are more likely to participate, potentially affecting the generalizability of the findings

CONCLUSION

Based on the findings it is evident that migraine affects a substantial portion of Pfizer employees, particular females. The migraine prevalence was higher than observed globally, most probably due to selection bias. Even so, a small proportion of employees without self-reported migraine was MST positive, indicating that migraine is still underdiagnosed. The study highlights the considerable impact of migraine on work productivity, with notable losses due to both absenteeism and presenteeism. These findings underscore the importance of implementing effective workplace migraine awareness and management programs to mitigate the productivity losses and improve the quality of life for affected employees.

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DISCLOSURE

GD, KN, AT, SCC, SP and FD: are employed by Pfizer and may own stocks or hold stock options in Pfizer

ACKNOWLEDGMENTS

This study was supported by Pfizer

Presented at the 19th European Headache Congress (EHC), December 3-6, 2025, Lisbon, Portugal