

DOUTORAMENTO
CIÊNCIAS BIOMÉDICAS

PRESENTEEISM AND QUALITY OF LIFE IN HIGHER EDUCATION
PROFESSIONALS: THE ROLE OF SOCIAL SUPPORT

SÓNIA ISABEL COSTA MAGALHÃES

D
2023



PRESENTEEISM AND QUALITY OF LIFE IN HIGHER EDUCATION
PROFESSIONALS: THE ROLE OF SOCIAL SUPPORT

SÓNIA ISABEL COSTA MAGALHÃES



SÓNIA ISABEL COSTA MAGALHÃES

**PRESENTEEISM AND QUALITY OF LIFE IN HIGHER EDUCATION PROFESSIONALS:
THE ROLE OF SOCIAL SUPPORT**

**Tese de Candidatura ao grau de Doutor em
Ciências Biomédicas**

**Programa Doutoral da Universidade do Porto
(Instituto de Ciências Biomédicas Abel Salazar
da Universidade do Porto)**

**Orientadora - Elisabete Maria das Neves
Borges**

**Categoria - Professora Coordenadora e
Investigadora**

**Afiliação - Escola Superior de Enfermagem do
Porto e CINTESIS - Centro de Investigação
em Tecnologias e Serviços de Saúde,
Universidade do Porto**

Declaração de Honra

Declaro que a presente tese é de minha autoria e não foi utilizada previamente noutro curso ou unidade curricular, desta ou de outra instituição. As referências a outros autores (afirmações, ideias, pensamentos) respeitam escrupulosamente as regras da atribuição, e encontram-se devidamente indicadas no texto e nas referências bibliográficas, de acordo com as normas de referência. Tenho consciência de que a prática de plágio e auto-plágio constitui um ilícito académico.

Porto, 8 de maio de 2023

Sónia Magalhães

Sónia Magalhães

Dedicatória

Eis que chega ao fim um percurso difícil, mas enriquecedor...

Nada teria sido possível sem as melhores, mais queridas, e amorosas pessoas que tenho a sorte de estarem presentes na minha vida, a apoiarem-me incondicionalmente. São o meu sol! Estão no meu coração para sempre... A minha reconhecida Gratidão à minha Mamã, Pedro, Manelzinho e Jusita (maninha), a quem dedico esta tese.

Agradecimentos

À minha Estimada Orientadora, Professora Doutora Elisabete Borges, uma pessoa especial, incansável, paciente, disponível e zelosa, que desde o 1º dia demonstrou empatia, e acreditou que seria possível! Agradeço reconhecidamente a motivação, sabedoria e apoio na construção deste caminho, rumo à concretização do presente trabalho científico.

À Joselina Barbosa, minha Querida colega e Amiga de longa data, um ser humano de Luz, uma mente brilhante, agradeço reconhecidamente todo o apoio pessoal e estatístico.

À Patrícia Foito e Camisão, minha Querida Amiga de infância, uma excelente Pessoa, nem a distância nos separa, agradeço reconhecidamente todo o apoio na revisão do artigo na língua inglesa. Disseste mais uma vez, Presente!

Ao Berto, agradeço o orgulho que tem em mim, pois agrada-lhe que evolua e brilhe nas conquistas da minha vida!

Agradeço a quem direta ou indiretamente teve a amabilidade de me apoiar para que fosse possível a realização deste trabalho.

Publicações

A autora declara que a presente tese de doutoramento inclui dois artigos publicados em revistas internacionais avaliadas por pares, aqui constantes na Parte II. Os artigos publicados são de acesso livre, pelo que justifica poderem ser reproduzidos nesta tese.

A doutoranda, enquanto 1ª autora, participou no desenho, conceção, recolha e análise de dados, bem como na redação dos artigos incluídos na presente tese.

Artigos Incluídos na Tese:

Magalhães S, Barbosa J, Borges E. Presenteeism in non-academic professionals in public university teaching: prevalence, associated factors and reasons to work while sick during the COVID-19 pandemic. *Int J Environ Res Public Health*. 2022; 19(22):14966

Magalhães S, Barbosa J, Borges E. The relationship between Presenteeism, Quality of Life and Social Support in higher education professionals: A cross-sectional path analysis. *Plos One*. 2022; 17(4): e0267514

Poster apresentado em Simpósio Internacional

Magalhães S, Barbosa J, Borges E. Relationship between Presenteeism and Quality of Life: the role of Social Support. Poster. In 28th International Symposium on Epidemiology in Occupational Health. 25-28 de outubro. 2021; Montreal; Canadá.

Resumo em Simpósio Internacional

Magalhães S, Barbosa J, Borges E. Relationship between Presenteeism and Quality of Life: the role of Social Support. P-98. *Occupational and Environmental Medicine*. 2021; London Vol. 78, Iss. Suppl 1, A73-A73. DOI:10.1136/OEM-2021-EPI.197

Contents

List of Abbreviations and Acronyms	ii
Resumo.....	iii
Summary.....	v
PART I - INTRODUCTION	
1. Presenteeism: Concept and Implications	2
2. Presenteeism: Associated Factors	3
3. Presenteeism and Social Support.....	5
4. Presenteeism and Quality of Life.....	8
5. Presenteeism in Higher Education Professionals	9
6. Characterization of Presenteeism: Measuring Instruments	11
7. Rationale of the Study.....	13
8. Objectives	14
PART II - ORIGINAL STUDIES	
Presenteeism in non-academic professionals in public university teaching: prevalence, associated factors and reasons to work while sick during the COVID-19 pandemic	16
The relationship between Presenteeism, Quality of Life and Social Support in higher education professionals: A cross-sectional path analysis	29
PART III - DISCUSSION, RECOMMENDATIONS AND CONCLUSION	
1. Discussion and Recommendations	44
2. Conclusion.....	49
PART IV - REFERENCES	
References	52
PART V - APPENDIX	
Published Abstract	62

List of Abbreviations and Acronyms

AD	Avoided Distraction
CFI	Comparative Fit Index
COPSOQ	Copenhagen Psychosocial Questionnaire
COVID-19	Coronavirus disease 2019
CSS	Social Support from Colleagues
CW	Completed Work
e.g.	For example
et al.	And others
EUROSHIS-QOL-8	Europe Health Interview Surveys Quality of Life Abbreviated Instrument - Version 8 items
EWPS	Endicott Work Productivity Scale
HWQ	Health and Work Questionnaire
i.e.	That is
OR	Ods Ratio
p-value	Probability Value
QoL	Quality of Life
RMSEA	Root Mean Square Error of Approximation
SD	Standard Deviation
SPS-6	Stanford Presenteeism Scale - Version 6 items
SPSS	Statistical package for social sciences
SSS	Social Support from Supervisors
TLI	Tucker Lewis Index
TSS	Total Social Support
WHO	World Health Organisation

Resumo

Introdução: O Presentismo é considerado um comportamento relacionado com o facto de um profissional estar presente no local de trabalho, todavia sem que consiga executar plenamente as suas funções por motivos de saúde. Este afeta o bem-estar da pessoa no trabalho, em termos de desempenho, qualidade de vida e saúde, assim como se reflete na organização, no respeitante à produtividade e consequentes perdas financeiras. O suporte social, habitualmente associado ao bem-estar e à saúde, pode influenciar de modo positivo o presentismo, e por conseguinte, a qualidade de vida. Investigar o presentismo e avaliar quais os fatores protetores deste tipo de fenómeno que alavanquem a atividade das pessoas no contexto laboral, torna-se um contributo essencial para a sua qualidade de vida. Posto isto, com este estudo pretendeu-se i) Determinar a prevalência do presentismo em profissionais não-académicos do ensino superior público, identificar problemas de saúde e fatores associados, bem como explorar as razões que levaram ao presentismo durante a pandemia de COVID-19; ii) Investigar as relações entre presentismo, qualidade de vida e suporte social no trabalho entre profissionais não-académicos do ensino superior público.

Métodos: Participaram neste estudo 332 profissionais não-académicos de uma instituição superior pública do Norte de Portugal. Foi aplicado um questionário *online* para recolha de dados sociodemográficos, profissionais, Presentismo, Suporte Social no Trabalho e Qualidade de Vida. O Presentismo, estimado a partir da versão portuguesa da *Stanford Presenteeism Scale* (SPS-6), abrange as dimensões: trabalho completado e distração evitada. A Qualidade de Vida foi determinada com a versão portuguesa do Índice de Qualidade de Vida (EUROSHIS-QOL-8). Para medir o Suporte Social no Trabalho foram utilizadas as subescalas do suporte social de colegas e suporte social de supervisor incluídas na versão média, do *Copenhagen Psychosocial Questionnaire* (COPSOQ), adaptado ao contexto português. Para identificar fatores sociodemográficos e profissionais associados ao presentismo foi utilizada a regressão multinomial logística e a relação entre presentismo, suporte social e qualidade de vida foi avaliada através de análise de caminhos. Para identificar os motivos que levaram os profissionais a trabalhar mesmo doentes, foi ainda realizada uma análise de conteúdo que decorreu da questão aberta que integrou o questionário.

Resultados: O presentismo foi mencionado por 97 (30,1%) profissionais e destes, 55,7% reportaram baixo desempenho devido ao presentismo. Os profissionais com funções apenas físicas e aqueles que executavam trabalho híbrido revelaram um risco mais elevado de pertencer ao grupo de baixo desempenho devido ao presentismo. O fator mais prevalente na decisão de ir trabalhar mesmo estando doente, relacionou-se com os motivos financeiros. Relativamente às dimensões do presentismo observou-se, nesta população, maior perda de produtividade associada à distração evitada do que ao trabalho completado. Os resultados demonstraram que o presentismo foi influenciado pelo suporte social do supervisor mas não pelo suporte social dos pares, tanto na dimensão trabalho completado como na distração evitada. Por sua vez, a qualidade de vida foi associada tanto ao suporte social do supervisor (de forma indireta) como ao dos pares (de forma direta).

Conclusão: Esta investigação demonstrou a existência de presentismo em profissionais não-acadêmicos do ensino superior público. Os resultados destacam não só o interesse em avaliar o presentismo nestes profissionais, proporcionar condições para que garantam um alto desempenho (não obstante o presentismo) bem como a existência de intervenções quando há baixo desempenho por causa deste. Empreender estratégias que viabilizem o suporte social no cenário profissional, sobretudo o fortalecimento de redes entre supervisores (bem formados e capacitados) e colegas, pode prevenir ou mesmo minimizar o presentismo neste tipo de profissionais, e promover uma melhor qualidade de vida.

Palavras-Chave: Presentismo, Qualidade de Vida, Ensino Superior, Suporte Social.

Summary

Introduction: Presenteeism refers to a situation in which a professional is present in the workplace, despite being unable to fully perform their duties for health reasons. This not only affects the performance and well-being of the professional but also the organization productivity and consequent financial losses. Social support, usually associated with well-being and health, can positively impact presenteeism and, therefore, quality of life. Investigating presenteeism and associated factors is thus an essential contribution to the professionals' quality of life. The aims of this research are therefore to i) Determine the prevalence of presenteeism in non-academic professionals in public higher education, identify health problems and associated factors, as well as explore the reasons that led to presenteeism during the COVID-19 pandemic; ii) Investigate the relationships between presenteeism, quality of life and social support at work among non-academic professionals in public higher education.

Methods: Participated in this study 332 non-academic professionals from a public higher education institution in the north of Portugal. An online questionnaire was applied to collect sociodemographic and professional data, Presenteeism, Quality of Life and Social Support at Work. Presenteeism, estimated from the Portuguese version of the Stanford Presenteeism Scale (SPS-6), covers the dimensions: completed work and avoided distraction. Quality of Life was determined using the Portuguese version of the Quality-of-Life Index (EUROSHIS-QOL-8). To measure Workplace Social Support, the subscales Social Support from Colleagues and Social Support from a Supervisor were used, which are included in the average version, of the Copenhagen Psychosocial Questionnaire (COPSOQ) adapted to the Portuguese context. Multinomial logistic regression was used to identify sociodemographic and professional factors associated with presenteeism, and the relationship between presenteeism, social support and quality of life was evaluated through path analysis. Based on the open question in the questionnaire, a content analysis was also carried out to identify the reasons that led professionals to go to work even though they were sick.

Results: Presenteeism was revealed by 97 (30.1%) professionals and of these, 55.7% reported reduced performance due to presenteeism. In turn, professionals with physical functions and those who performed hybrid

work revealed a higher risk of belonging to the low performance group due to presenteeism. The most prevalent factor in the decision to go to work despite being sick is related to financial issues. Regarding the dimensions of presenteeism, a greater loss of productivity associated with avoided distraction than with completed work was observed in this population. Supervisor Social Support positively influenced presenteeism, both in the completed work and in avoided distraction dimensions. Quality of life was associated both with social support from the supervisor (indirectly) and from colleagues (directly).

Conclusion: This research reveals that presenteeism is prevalent in non-academic professionals in public higher education. The results highlight not only the need to assess presenteeism in these professionals, but also to provide conditions that can promote high performance despite presenteeism. Applying strategies that make social support possible in the professional setting, especially strengthening networks between (well trained and qualified) supervisors and colleagues, may minimize or even prevent presenteeism in this type of professional, and favor a better quality of life.

Keywords: Presenteeism, Quality of Life, Higher Education, Social Support.

Part I.

Introduction

-
- 1. Presenteeism: Concept and Implications**
 - 2. Presenteeism: Associated Factors**
 - 3. Presenteeism and Social Support**
 - 4. Presenteeism and Quality of Life**
 - 5. Presenteeism in Higher Education Professionals**
 - 6. Characterization of Presenteeism: Measuring Instruments**
 - 7. Rationale of the Study**
 - 8. Objectives**
-

1. Presenteeism: Concept and Implications

Presenteeism refers to a situation in which a professional is present in the workplace even when they are unwell and therefore unable to perform their duties to the full extent [1]. Presenteeism should not be confused with appearing to be sick to evade work duties, or even surfing the internet without it being for work purposes [2].

In contrast with absenteeism (easily identified and generally referred to as off work due to illness [1]), presenteeism tends not to be as visible and quantifiable [2]. If, on the one hand, presenteeism implies physical presence, it may on the other hand, indicate psychological absence [3]. It is not immediately possible to perceive how much the sickness or clinical condition influences performance, or any subsequent potential costs for the organization [2].

Presenteeism can lead to dissatisfaction at work, given the professional's difficulty in using their abilities to the full (both mentally and physically). Results that could be expected are thus not achieved [3]. People rarely work to their full potential all the time. According to the literature, it is common for people to occasionally work with a health problem (e.g., a headache), and for their productivity to be very low during this period [4].

Presenteeism began to figure in the literature in the 1990s, associated both with professionals' health and the productivity of organizations [4]. Until then, to minimize productivity costs, organizational policies focused on reducing absenteeism [1]. Although presenteeism was assumed to be harmful (to the organization), there was still the idea that by their physical presence, professionals could be productive [1]. This line of thought is typically North American, with its focus on management and economics and the consequences that the sickness could have on productivity. In contrast, in Europe, the focus is on understanding the causes of presenteeism, related to job insecurity and other occupational issues that affect health [1].

When organizations realized that presenteeism has implications for individual well-being and productivity, they began to show greater concern [5].

It is thus essential to understand both what leads to presenteeism, such as the characteristics of the work and the professional (as a person), and its consequence. When that happens there will be more generalized acknowledgement of this type of behavior, which affects productivity and health [6].

Although it appears that presenteeism involving mild/occasional illnesses [2] implies lower costs to the company, these costs are incurred more frequently and are therefore greater than those incurred by absenteeism [5]. This situation may lead to a clear decrease in production due to the occurrence of more minor health problems, which may become worse over time, causing the worker to be absent from the workplace [7].

In view of this, presenteeism implies significant costs not only for the worker, but also for organizations.

2. Presenteeism: Associated Factors

The health problems associated with presenteeism are generally considered mild because if professionals experience more serious illnesses, they will inevitably have to be absent from work, perhaps even for a considerable period of time (leading to absenteeism) [2].

Indeed, evidence points to several health problems associated with presenteeism, such as chronic or episodic illnesses (e.g. seasonal allergies) [2, 8], asthma [2], flu [8], depression, headaches, gastrointestinal problems [2, 8, 9], increased risk of coronary heart disease [10], back pain [2, 11], fatigue [9], anxiety [8, 9], stress [5, 8, 9], musculoskeletal pain [12], arthritis [2], especially rheumatoid arthritis, and insomnia [11]. The fact that over a period of time the professional is exposed to a high level of psychological demands and other stress factors may also lead to presenteeism [13].

As a dysfunctional behavior, presenteeism is prejudicial to the health of professionals as it contributes to the worsening of existing health problems [1]. For example, in the context of those with low back pain, presenteeism is a predictor of severe pain and increased levels of depression, which greatly affects the quality of life associated with health [14].

Although health is the most important factor in deciding whether to go to work when sick, different occupational and personal factors can contribute to presenteeism. The literature has focused on uncovering the factors associated with this phenomenon [5] both positive and negative in origin [5, 7].

Presenteeism may be associated with situations of job insecurity, namely the fear of losing one's job if work is missed [5], which leads to the need to work longer [15, 16], even while you are sick. This is also a way of demonstrating your personal value and your commitment to the employer, as there is dissatisfaction with being pointed out as being absent due to illness, which can lead to penalties and even dismissal [5, 17]. On the other hand, when absent from work due to illness, the professional sees their monthly salary reduced, so they may choose to make the sacrifice of working while sick [5, 18]. It is sometimes pointed out that despite a loss in productivity when working while sick, professionals prefer to go to work as this may imply more benefits than harmful effects for their life [19, 20].

Additionally, the professional can behave in this way when they intend to attain organizational goals [7], associated for example with performance bonuses, which can lead to an increase, in both working hours and workload [21, 22], and this may sometimes even lead to the professional becoming a workaholic [23, 24], who is more subject to personal and professional demands, which ultimately leads to dissatisfaction [25].

There are also those who are exposed to supervisor pressure (e.g., regarding time/deadlines), and high work demands [5], which leads them to be subject to stress [5, 17]. The literature speaks of low autonomy in controlling one's own work performance [5]. If professionals are subject to less pressure/constraint, they may benefit from greater autonomy, and feel more comfortable with their choices, i.e., whether they make the decision to be present or absent [1, 26]. Other reasons relate to the lack of support from colleagues and supervisors, lack of support in situations of illness, and difficulty in finding a replacement in the work context [5].

This behavior may demonstrate imply a strong sense of responsibility/work commitment [5, 22], fear of overloading colleagues [5], the feeling of being irreplaceable [5, 22], enjoyment of work [5], motivation and satisfaction

corresponding to examples of positive aspects related to presenteeism [5, 7].

Presenteeism also sometimes occurs because professionals wish to avoid discrimination and interpersonal conflicts [5].

On the other hand, the occupational particularities of the work context, especially when dealing with people (whether the target audience or colleagues) lead professionals to fear for their safety as there is a greater possibility of being infected with diseases by colleagues, and of transmitting them to society, especially if we consider, for example, the COVID-19 pandemic, and the risk that presenteeism represents here [27]. According to a systematic review, presenteeism alluding to acute infectious diseases is considered harmful to public health, as it can lead to epidemics in the organization. To provide conditions to prevent the spread of diseases in the workplace due to presenteeism is also a concern [28]. With this pandemic, we were therefore faced with the fear of being present in the workplace and the risk of being infected, which can carry with it the stigma that may negatively affect psychological health [29]. Other factors may influence presenteeism, such as personal factors, related for example to personality, and contextual factors related, for example, to organizational culture [1, 14].

It is the nature of the professional's clinical situation (episodic, acute, or chronic), that defines the existence of presenteeism and their consequent performance [1]. If the worker continues to work while unwell, there is a risk of the disease being aggravated, leading the professional to be no longer able to work [2, 7]. Furthermore, presenteeism can also lead to personal accidents and have a adverse impact on relationships with colleagues and clients/users [30].

3. Presenteeism and Social Support

According to the literature, social support is made up of interrelated components, such as: a relational component (referring to professional and family status, participation in social institutions and the dimension of the social network); a constitutional component (related to needs and cohesion between these needs and effective social support); a functional component

(related to the type of social support available, e.g. instrumental or material (financial support or support with housework), informational (information that may be useful for dealing with situations/problems); a satisfaction component (related to the social support provided and its usefulness); a structural component (related, for example, to the level of existing relationships, reciprocity, physical and psychological proximity) [31, 32].

Social support can also be considered both formal (support from institutions (e.g. hospitals, Non-Governmental Organizations) and professionals (e.g. social workers, doctors) according to needs), and informal (daily support, e.g. from friends, family members, colleagues) [31, 32]. One notion defines social support as the availability of someone who is trustworthy, who shows concern for the person, demonstrating that they like, value, and esteem this person [33]. Overall, social support is considered essential for psychological and physical well-being [34]. One meta-analysis even states that poor health is more common in those who lack social support [32, 35].

Social support, specifically in the workplace, is understood as the support that the person receives from colleagues and the supervisor [36]. For instance, supervisor represents the organization. His support means that the professional can assume a greater commitment to the employer, as this support contributes to making them feel important/necessary, visible, and therefore more zealous and productive. The relationship between colleagues, on the other hand, being more informal and at the same level (on a horizontal plane), is reflected more sharply in the decrease of presenteeism [37]. The social support of both colleagues and supervisor encourages self-fulfillment in the workplace through the satisfaction of needs [38]. This is important in order to minimize the effect of work requirements, improve work skills, and improve social relations in the organization, resulting in a harmonious environment [39].

In this way, social support as a mediator may contribute significantly to the prevention of psychosocial risks at work (e.g. stress), lead to an improvement in labor social relations, and have a favorable impact on the professional's performance [39]. When social support is high, it can also lead to low levels of burnout and help to avoid work overload [38, 40]

regularly associated with a lack of affective commitment to the organization and to the intention of turnover in the place of work [40].

Some research mentions the importance of social support from colleagues and the supervisor in order to prevent work stress and presenteeism, to minimize loss of productivity [37]. Evidence underlines that the result of work control, over tension, in this context is fully mediated by social support from colleagues and supervisor [39, 41]. It can thus be said that social support at work, from both the supervisor and colleagues, directly contributes to the subjective well-being that leads to satisfactory relationships [36].

Evidence shows that at university level, co-workers and supervisors play an important role in minimizing presenteeism, as they can cooperate with each other in health promotion, which is reflected in the improvement of work capacity and in well-being [42].

Both, stress at work and presenteeism, can be reduced if there is social support from colleagues and employer, as well as special attention to organizational procedures. This aims, for example, to provide flexible working hours, and greater care for the interpersonal relationship between employers and their professionals, and an amicable relationship between co-workers is seen as being equally relevant [43]. Thus, supervisors and colleagues, faced with a professional who is ill, can readjust the work within the team, or even get someone to replace them temporarily. The focus here is to provide support in order to motivate professionals to have time available to take care of their health, and to prevent them from working when they are sick [5]. If the professional has greater autonomy/control of their work and social support from the supervisor, presenteeism can be reduced [44].

Social support at work is a key contribution to both psychological development and well-being [38], and may also prevent presenteeism and its adverse effects [45].

In order to assess social support at work, the Copenhagen Psychosocial Questionnaire (COPSOQ II), validated for the Portuguese context [46, 47], is internationally assumed to be consensual and easy to understand when assessing psychosocial dimensions within the labor framework [47]. In the

medium version, among others, the social support scale covers items about support from colleagues and supervisor, evaluated on a 5-point Likert scale, with answers in which the respondents can choose between "Never/almost never " and "Always". The scale score is the average of the items and a higher value is synonymous of a high social support [47].

4. Presenteeism and Quality of Life

Considering the relevance of working conditions in people's global lives, presenteeism adversely affects the well-being of professionals and their quality of life [14, 48]. There is a clear association between psychosocial risk factors and poor quality of life. Continuing to work in a harmful work context, with exposure to factors such as stress and tension may culminate in a reduced quality of life [48].

Some reports have shown that elevated psychological pressure in the work context led to the worsening of symptoms related to mental health, presenteeism, and low quality of professional life [13]. Conversely, a perception of greater security in relation to work may result, for example, in less severe symptoms of anxiety, depression and better quality of life [13].

It should be noted that there are studies that indicate presenteeism as being linked to impairments in quality of life [14, 49, 50]. One of these studies concludes that whether presenteeism is high or low, just because it occurs, most people experience poorer health-related quality of life compared to those who do not report presenteeism [14].

Low quality of life in the work context brings with it consequences for the professional that may lead to apathy, muscle tension, headache, depression, tachycardia, and increased risk of accidents at work. Therefore, both the motivation to carry out their work and the quality of their execution may decrease [24,51].

The World Health Organization's (WHO) presents a range of dimensions for a better understanding of the Quality of life. It states that: "Quality of life is defined as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. It is a broad ranging concept

affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment. (...) For example, the domain of physical health includes the facets Pain and discomfort, Vitality and fatigue and Sensory functions." [52] p.153;154.

The more that is invested in measures that promote quality of life, the lower absenteeism and presenteeism may be. Organizations that are concerned and invest in well-being and the consequent quality life of its professionals may be doubly contributing to the performance of the institution, and to a more balanced society [53].

Thus, quality of life was assessed with the Quality of Life Index (EUROSHIS-QOL-8), a short and adapted version of the WHO quality of life, is considered a reliable instrument, with good internal consistency, used internationally, and also validated for our country. It comprises the psychological, physical, environmental, and social domains [54-56]. It consists of a five-point Likert scale ranging from "Very Bad" to "Very Good" or "Not at all" to "Completely" and between "Very Dissatisfied" and "Very Satisfied". The total result is reached from the sum of the eight items, meaning that the highest value refers to a higher level of perceived quality of life [54].

5. Presenteeism in Higher Education Professionals

There seem to be few studies that address presenteeism related to non-academic higher education professionals [57, 58]. However, it is necessary to reflect on them, because in general, these professionals are the first to contact students directly, and are thus able to play a relevant role in their university experience. Non-academic public higher education professionals are considered essential in institutional integration/hosting and support at the level of care. Thus, there is a responsibility here in the interaction with the target audience that deserves attention [57].

The existing literature on the subject shows that academic and non-academic professionals in higher medical education can be exposed to high work demands and that presenteeism due to illness is not only a risk factor for bullying in the workplace (defined as a form of aggression that can result in negative consequences for the victim and for example for the

organization [59]), but also a consistent predictor of it [60]. In this context, presenteeism is not considered a consequence of bullying, as the fact that the professional continues to work (even when ill) may lead to negative performance, attitudes/behaviors, especially with colleagues, which may, for example, lead to conflicts or harassment [1, 60].

Additionally, telework/remote work (in which information and communication technologies are used), a model increasingly adopted mainly in higher education, not only because it means a reduction in costs, but also because it is the fastest way to adapt to a pandemic context, especially COVID-19, can also cause stress in professionals. This was described at a UK university, where the authors state that 26% of respondents had experienced presenteeism [61]. Teleworking in a domestic context, which offers benefits such as greater flexibility and time saving in travel, is favorable to working regularly when sick, which could increase self-destructive behaviors, thus making professionals more exposed to presenteeism [62]. This situation inevitably entails a challenge for organizations, but there are differences in the assessment of telework in terms of its advantages, disadvantages and particular attributes of the teleworker, depending on sociodemographic characteristics. For example, while younger professionals view technologies in a more friendly way, older professionals give more value to face-to-face work [63].

With regard to public higher education professionals, scientific evidence has also demonstrated that physical activity can prevent and even reduce presenteeism [64]. It is important to reduce a sedentary lifestyle, break university work routines, such as spending long periods using the computer and sitting down, as these are examples of occupational hazards that lead to problems not only in physical health (e.g., low back pain), and mental health (e.g., depressive mood). The organization should pay attention to these aspects for health promotion, and focus on physical activity during working hours, which could also be a relevant contribution to protect against different types of diseases, such as obesity, and cardiovascular problems [65].

According to studies involving academic and non-academic professionals from a German university, suitable collaboration in the promotion of health in the organization (in which colleagues and leaders have a primordial role)

can minimize presenteeism, favor well-being and improve the work performance [42].

In addition, evidence shows that low performance may also be related to the fact that non-academic public higher education professionals deal with personal matters in the workplace, which is not beneficial. This situation demonstrates a negative attitude, lack of knowledge and ethical awareness towards work [57]. Some of the factors are related to the lack of remuneration compatible with professional performance, stress, inadequate supervision, personal and/or family problems and the lack of an organizational policy that does not authorize personal activity during working hours. If professionals have a positive attitude towards work, they may be more productive [57].

Given the relevance and limited number of studies in the scope of presenteeism, namely in non-academic professionals who work in public higher education, mainly in a pandemic context, the challenge of this investigation is to add new contributions to the characterization of this phenomenon, taking into account the issue of quality of life and social support.

6. Characterization of Presenteeism: Measuring Instruments

In contrast with absenteeism, which is relatively easy to quantify by counting only days absent from work, quantifying presenteeism is much more challenging. On the one hand, it is necessary to assess the reduction in productivity and, on the other hand, the impact of this reduction. In addition, there is a diversity of diseases that affect productivity in different ways. There is a shortage of available objective measures that can be used to identify and measure presenteeism, but given the relevance of its detection in organizations, several instruments were created and described in the literature [66]. Generally, presenteeism is evaluated by self-report measures, that may be generic or directed to specific diseases, differing in their complexity, covering individual items or different aspects of the definition of this problem, varying in response format and in the evaluation period [67].

One study evaluated and compared the quality of 21 instruments identified in the literature to assess presenteeism [67]. The study demonstrated that the Health and Work Questionnaire (HWQ) [67, 68], Endicott Work Productivity Scale (EWPS) [67, 69] and Stanford Presenteeism Scale (SPS-6) [67, 70], were the instruments with the highest level of evidence [67, 68].

The HWQ measures the productivity and health of professionals. It is a multidimensional measurement instrument with six domains (productivity, concentration/focus, supervisor relations, non-job satisfaction, job satisfaction, and impatience/irritability) and three items (stress, work control, and ability to finish work) work on time). It has 24 items on a 10-point Likert scale (worst to best) in which respondents rate their performance, relative to the previous week, based on different perspectives: their own, that of their supervisor and that of co-workers [67, 68].

The EWPS assesses the degree to which subjective behaviors and feelings or attitudes reduced productivity and efficiency in work activities during the week preceding the assessment. The scale includes 25 items on a 5-point Likert scale (0 – never, to 4 – almost always) covering four areas of productivity: attendance, quality of work, ability to perform and personal factors (social, mental, physical, and emotional) [67, 69].

The SPS-6 assesses work productivity losses through the professional's perception of their ability to overcome distraction and complete work. The scale includes 6 items on a 5-point Likert scale, from 1 – I totally disagree to 5 – I totally agree, covering two dimensions: work completed and distraction avoided [71].

The SPS-6 stands out from among these instruments because it only makes it possible to assess presenteeism [67, 70-72], and has a positive orientation (higher scores correspond to higher performances) [70, 73]. To date, this remains the most widely used measure of productivity loss in validated studies [74]. As the SPS-6 may be used for different types of professionals and with any health problem, it has been validated in several countries, including Portugal [71]. The version adapted for Portugal showed high internal consistency and discriminated two dimensions, corroborating the theoretical construct of the existence of two independent factors (completed work and avoided distraction) [71]. For the reasons explained in

our study, the SPS-6 scale was used. In addition to the domains of presenteeism, the instrument made it possible to identify associated health problems (e.g. low back pain, anxiety, stress, depression) [75], and whether the professional had symptoms of the same health problem(s) in the month prior to its application.

7. Rationale of the Study

The main reason for this investigation was the widespread concern with presenteeism, particularly among non-academic professionals in public higher education. Presenteeism influences the state of health and quality of life of professionals and the productivity of organizations, but it is also influenced by several individual and professional factors. Identifying factors associated with presenteeism in these professionals will make it possible to reflect/evaluate the development of adaptive strategies, both for prevention and coping.

Social support, considered a measure that promotes general well-being, which is also seen in the workplace through the support of colleagues and supervisors, may positively affect presenteeism, but also the quality of life of the professionals under study.

The conceptual framework underlying this investigation is summarized in Figure 1.

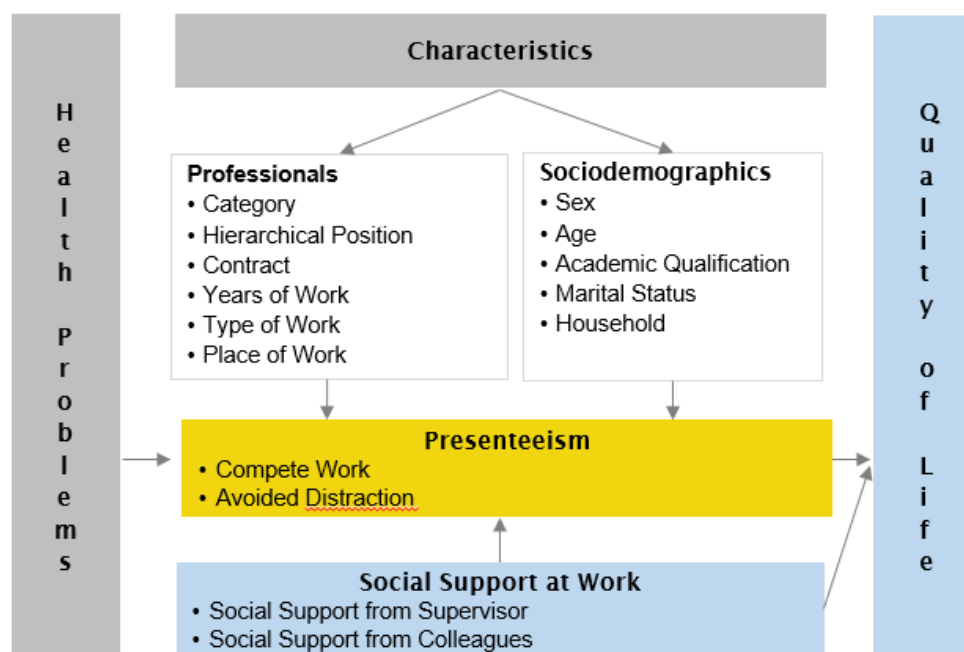


Figure 1. Conceptual Structure of the Study

Based on the above, it is proposed that presenteeism in non-academic public higher education professionals is associated with professional and sociodemographic factors; it affects quality of life, and social support may be a protective factor for presenteeism and quality of life.

8. Objectives

This research intent to contribute to the identification of health problems and factors associated with Presenteeism that affect the quality of life of non-academic professionals in public higher education, as well as to alert Institutions to the importance of promoting Social Support at Work.

Thus, the following objectives were outlined:

- i) to determine the prevalence of presenteeism in non-academic professionals in public higher education, to identify health problems and associated factors, as well as to explore the reasons that led to presenteeism during the COVID-19 pandemic;
- ii) to investigate the relationships between presenteeism, quality of life and social support at work among non-academic professionals in public higher education.

Part II.

Original Studies

-
- 1. Presenteeism in non-academic professionals in public university teaching: prevalence, associated factors and reasons to work while sick during the COVID-19 pandemic**
 - 2. The relationship between Presenteeism, Quality of Life and Social Support in higher education professionals: A cross-sectional path analysis**
-

Presenteeism in non-academic professionals in public university teaching: prevalence, associated factors and reasons to work while sick during the COVID-19 pandemic

Int J Environ Res Public Health. 2022 Nov; 19(22): 14966.

Sónia Magalhães, Joselina Barbosa, Elisabete Borges



Article

Presenteeism in Non-Academic Staff in a Public University Context: Prevalence, Associated Factors, and Reasons to Work While Sick during the COVID-19 Pandemic

Sónia Magalhães ^{1,2,*}, Joselina Barbosa ²  and Elisabete Borges ^{3,4} 

¹ ICBAS—School of Medicine and Biomedical Sciences, University of Porto, 4050-313 Porto, Portugal

² Faculty of Medicine, University of Porto, 4200-319 Porto, Portugal

³ Nursing School of Porto, ESEP, 4200-072 Porto, Portugal

⁴ Center for Health Technology and Services Research—CINTESIS@RISE, 4200-450 Porto, Portugal

* Correspondence: sicm@med.up.pt

Abstract: Presenteeism negatively affects worker performance. We aimed to know the prevalence of presenteeism in non-academic university staff, identify health problems and associated factors, as well as explore the reasons that led to presenteeism during the COVID-19 pandemic. A cross-sectional study was conducted with a convenience sample of 332 non-academic staff. The Portuguese version of the Stanford Presenteeism Scale (SPS-6) was used, and socio-demographic and occupational data were collected. Participants were divided into groups according to the presenteeism cut-off score (no presenteeists, presenteeists with high job performance, presenteeists with low job performance). Multinomial regression was used to identify occupational and demographic characteristics associated with presenteeism. An open question replies analysis made it possible to explore the reasons for going to work while sick. Presenteeism was experienced by 30.1%. Presenteeism with high job performance was not associated with socio-demographic and work factors. Professionals who performed only physical work (OR = 9.4; 95% CI: 1.7; 51.0) and those who conducted hybrid work (OR = 4.1; 95% CI: 1.8; 9.6) showed a higher risk of belonging to the presenteeist group with low job performance. Financial reasons led professionals to work while sick. This study raises the importance of evaluating presenteeism in non-academic staff to create conditions for them to maintain high performance despite presenteeism and to intervene when there is low performance due to presenteeism.

Keywords: presenteeism; non-academic university staff; COVID-19; higher education



Citation: Magalhães, S.; Barbosa, J.; Borges, E. Presenteeism in Non-Academic Staff in a Public University Context: Prevalence, Associated Factors, and Reasons to Work While Sick during the COVID-19 Pandemic. *Int. J. Environ. Res. Public Health* **2022**, *19*, 14966. <https://doi.org/10.3390/ijerph192214966>

Academic Editor: Toni Alterman

Received: 21 October 2022

Accepted: 8 November 2022

Published: 14 November 2022

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Apart from the loss of productivity and other costs associated with absenteeism (normally defined as being absent from work due to illness), which has been widely studied, nowadays, organizations are more and more concerned with the costs associated with presenteeism, defined as going to work in spite of being sick [1]. Previously, organizational policies focused on the minimization of absenteeism, and though presenteeism was seen as harmful, it was considered preferential because it represented a welcome act of organizational citizenship because when workers are physically present they still achieve some productivity when compared to absenteeists [1]. Health issues that lead to presenteeism are generally considered fairly mild or episodic because otherwise, people would be forced to stay at home [2]. Though it seems that these illnesses originate from low direct costs, in reality, indirect costs, which are barely perceptible to employers, must be considered. The literature tells us that presenteeism is approximately twice as expensive as absenteeism [3]. If, on the one hand, it can lead to a steep lowering of production due to the prevalence of health problems that can occur for years, on the other hand, over time, it becomes a risk factor, leading to the aggravation of the illness and, even, absence from work (absenteeism) [4].

For these reasons, there has been an increased interest in the study of presenteeism, which is seen as a global phenomenon [5].

Health issues and functional limitations are the main factors in the decision to go to work or not while ill [6–8]. It is well-known, for example, that there are workers who, in spite of being ill, consider themselves more resistant and stronger and who give less importance to the situation. They assume there is no danger involved and thus increase presenteeism [4,7].

However, other reasons may lead to this decision, such as financial difficulties, considering that he/she is irreplaceable, the desire not to overload colleagues with work, and feeling that the atmosphere at work sanctions absenteeism [3,4]. In a previous study, presenteeism was found to be a purposeful and adaptive behavior given the need to harmonize work demands and health limitations [6].

Past findings also suggested that socio-demographic and occupational characteristics might be associated with presenteeism, for example, sex/gender [3,9] and age [9], while others suggest no association or that the evidence was inconsistent [10–13]. In the context of university staff work, for example, the incidence of back pain in women was higher than that in men [14]. Regarding occupational characteristics, evidence was found of an association with presenteeism [11,15]. One of the reasons to work while sick is the achievement of organizational goals [4]. Added to this, the COVID-19 pandemic that is affecting the world population could be an even more accentuated problem for presenteeism [15] because, first, several risk factors, associated with presenteeism [1,3,15] may have worsened, such as, history of illness, concerns about financial and job insecurity [3,16]; second, organizations, having to maintain productivity, exert greater pressure on working hours and increase stress; it is also necessary to replace colleagues who are debilitated or sick, which leads to an aggravation of the risk of presenteeism, and of future problems of disease [16,17]; third, the pandemic leading in some cases to organizational adjustments which led to a reconfiguration of the workplace [18,19], such as telework (e.g., working outside the organization) [19,20] and increase in level of demand regarding self-management, which in turn could lead to the risk of presenteeism, and; finally, as diseases are circulating in organizations, presenteeism can be a risk factor contributing to the transmission of infectious diseases among professionals and to the pandemic situation [11]. Thus, organizations must strive for a culture of absence due to illness and minimize presenteeism [11].

There is a growing body of literature that recognizes the significance of presenteeism as a problem of public health. However, much of the research so far has focused on healthcare professionals on the front line, those most exposed to risk and health problems, with the most recent example being the pandemic [21,22]. A systematic review indicates the need to amplify studies in related organizational contexts [11]. For instance, the higher education sector has been the focus of great growth in recent decades, and university management is becoming increasingly competitive [23]. To compete successfully, universities need constantly changing and technically demanding work environments, which translates into a more qualified and highly skilled workforce [24]. The contribution of non-academic staff in supporting services is part of the quality of services provided by the Institution. Often, the implementation of new policies falls on these professionals, who are the first to feel the challenges institutions faces that translate into limited financial resources, an increasing number of students, new legislation and regulations, increasing bureaucracy, new technologies, and responsibilities. In addition, they play an important role in the university experience of students, as they are the first professionals with whom they deal directly, who contribute to their integration into the institution and provide them with assistance at different levels [25]. Adaptation to the COVID-19 pandemic has also brought transformations to the academic context [26]. A considerable number of university professionals (academic and non-academic) present a high level of exhaustion and work while ill for at least eight days. These circumstances do not benefit well-being [27]. However, if the staff indicated a satisfactory level of well-being, both the institution and students would benefit from this favorable context in terms of the support they would be offered.

Typically, the focus of higher education research is academic staff and students rather than the support staff that work in academia. Given the significant changes in the profession, as described above, non-academic staff are potentially negatively affected by the work context. Valuing non-academic staff is crucial for the mission of universities, and an integrated culture of well-being must be promoted for all who work and study at the university [23]. The demands on non-academic staff are increasing to reflect the quality of services provided by institutions, but they can also lead to greater presenteeism. Up to now, far too little attention has been paid to presenteeism among these professionals. We have found one study that investigated presenteeism among non-academic staff. Family commitments and the unavailability of time to achieve specific goals were reported as important determinants of presenteeism among non-academics [25]. Therefore, we are convinced that it is relevant to expand knowledge about presenteeism in this population in order to envision a diagnosis and a possible intervention.

This study aimed to determine the prevalence of presenteeism in non-academic university staff, identify health problems and associated factors, as well as explore the reasons that led to presenteeism during the COVID-19 pandemic. Based on the theoretical evidence described above, we hypothesized, first, that non-academic staff are at high risk of presenteeism and, second, that compared with non-presenteeism workers, those with decreased performance due to presenteeism are affected by demographic and occupational characteristics.

2. Methods

2.1. Study Design

A cross-sectional observational study was conducted among a sample of Portuguese non-academic university staff by collecting data through an online questionnaire.

2.2. Subjects

The subjects were 322 non-academic staff from a Portuguese public university who voluntarily participated in the study between April and June of 2021.

2.3. Measures

Demographic (sex, age, academic qualifications, marital status, and household) and occupational characteristics (professional category, supervisor (yes/no), labor contract, years of work at institution, type of work, and place of work (previous month)) were collected.

Presenteeism was evaluated from the Portuguese version [28] of the Presenteeism Scale (Stanford Presenteeism Scale—SPS-6) [29], which evaluated losses in work productivity due to health problems via two distinct domains: completed work (CW), which is the amount of work conducted under the effects and the causes of presenteeism, and avoided distraction (AD), which is the amount of concentration needed to work effectively while sick. They were both assessed via three items with five responses on a Likert scale from options “totally disagree” to “totally agree” [28,29]. In CW, the score 5, “totally disagree”, corresponds to the most unfavorable condition, and in the AD domain, it corresponds to the score 1, “totally agree”. For the latter, each numerical value of response was converted into the opposite value.

The total score on SPS-6, which can vary from 6 to 30, is obtained by the sum of all the responses to all items of the two domains. Lower scores (from 6 to 18) denote reduced performance in work activities due to presenteeism; higher scores (from 19 to 30) denote better performance despite presenteeism [30]. The literature confirms good psychometric properties of this scale, including for the Portuguese population, the version we used in this study [28]. The results showed good internal consistency with a Cronbach’s α coefficient for the scale of 0.821 and for the subscales AD and CW of 0.774 and 0.832, respectively.

2.4. Statistical Analyses

The internal consistency of the scales was validated with Cronbach's α coefficient.

To compare the groups that displayed presenteeism with the group which did not display presenteeism, participants were divided according to presenteeism cut-off score: no presenteeism (the group that reported no health problem in the previous month and not having missed work) vs. lower presenteeism score (SPS-6 cut-off score ≤ 18) vs. higher presenteeism score (SPS-6 cut-off score > 18). This will allow institutions to better identify the group of people with lower performance due to presenteeism and to intervene as a priority. Participants' characteristics between presenteeism groups were summarized with mean and standard deviation (SD) and absolute and relative frequency, as appropriate. Differences between groups were assessed using ANOVA and Pearson's chi-square test or Fisher's Exact test. Multinomial logistic regression was used in order to investigate the association between occupational characteristics and demographic presenteeism. The "no presenteeism" group was used as a reference category. All variables with p value < 0.2 at univariate analysis were included in the multivariable model. A level of 5% was considered significant. Furthermore, to confirm the direction of the odds ratios, a sensitivity analysis was performed by bootstrapping with 2000 replication.

In the above-mentioned survey, there is also an open question for professionals to indicate the main motive for going to work in spite of feeling ill. The treatment of the collected data was conducted using the method of content analysis proposed by Bardin [31]: organization of the analysis, exploration of the collected material (analysis of the text in regards to categories), treatment, and interpretation of results [31]. For the analysis of the individual replies, a grid was created (with a view to presenting data in an objective, organized and simplified manner) where we defined categories and subcategories, frequency of replies and their respective percentage, as well as the registration units followed with the letter P (participant) and the coding number assigned to the participant [31].

3. Results

3.1. Participants' Characteristics

In Table 1 are described the participants' characteristics. The mean age was 46 (SD 9), and 75.5% were female. Regarding academic qualifications, 68.9% had higher education, and most were married or were in an unmarried partnership (64.3%). Household consists on average of 2.8 people (SD 1.1). Regarding participants' occupational characteristics, the group included 26 (8.1%) Operational Assistants, 89 (27.6%) Technical Assistants, 195 (60.6%) Senior Technicians, and 6 (1.9%) Informatics or Other. Most participants had a public contract 173 (53.7%), were not supervisors, 264 (82.0%), and the work type was mainly mental (61.8%). In the previous month, 105 (32.6%) mostly teleworked (at home), 79 (24.5%) worked at home and at the institution, and 138 (42.9%) worked mostly at the institution. The average length of employment at the institution was about 15 years. Presenteeism was experienced by 97 (30.1%) workers. For 54 (55.7%) of these workers, the global score on SPS-6 was equal to or lower than 18, that is, with an impaired performance at work due to presenteeism. Table 1 shows that groups did not differ in sex, age, academic qualifications, marital status, household, professional category, being a supervisor, labor contract, and years at the institution.

Table 1. Participants' Characteristics by Groups of Presenteeism.

Characteristics	Presenteeism			<i>p</i> Value	Total (N = 322)
	No (N = 225)	Higher Score (N = 43)	Lower Score (N = 54)		
Sex, N (%)				0.362	
Female	174 (77.3)	29 (67.4)	40 (74.1)		243 (75.5)
Male	51 (22.7)	14 (32.6)	14 (25.9)		79 (24.5)
Age, Mean (SD)	45.9 (9.3)	45.4 (9.2)	46.7 (7.7)	0.748	46.0 (9.0)
Academic Qualifications N (%)				0.087	
≤3rd Cycle	12 (5.3)	7 (16.3)	5 (9.3)		24 (7.5)
Secondary	50 (22.2)	11 (25.6)	15 (27.8)		76 (23.6)
Higher Education	163 (72.4)	25 (58.1)	34 (63.0)		222 (68.9)
Marital Status, N (%)				0.788	
Divorced, Separated, Widow/er, or Single	83 (36.9)	14 (32.6)	18 (33.3)		115 (35.7)
Married or unmarried partnership	142 (63.1)	29 (67.4)	36 (66.7)		207 (64.3)
Household, Mean (SD)	2.9 (1.2)	2.8 (1.2)	2.7 (1.1)	0.688	2.8 (1.2)
Occupational Category, N (%)				0.240	
Operational Assistant	13 (5.8)	6 (14.0)	7 (13)		26 (8.1)
Technical Assistant	61 (27.1)	13 (30.2)	15 (27.8)		89 (27.6)
Informatics	6 (2.7)	0 (0.0)	0 (0.0)		6 (1.9)
Senior Technician	142 (63.1)	23 (53.5)	30 (55.6)		195 (60.6)
Other	3 (1.3)	1 (2.3)	2 (3.7)		6 (1.9)
Supervisor, N (%)				0.694	
No	182 (80.9)	37 (86.0)	45 (83.3)		264 (82.0)
Yes	43 (19.1)	6 (14.0)	9 (16.7)		58 (18.0)
Labor Contract, N (%)				0.299	
Public	118 (52.4)	21 (48.8)	34 (63.0)		173 (53.7)
Private	107 (47.6)	22 (51.2)	20 (37.0)		149 (46.3)
Years of work at the institution, Mean (SD)	15.3 (10.0)	14.8 (10.3)	16.1 (7.2)	0.800	15.4 (9.6)
Type of Work, N (%)				0.001	
Mostly physical	3 (1.3)	2 (4.7)	5 (9.3)		10 (3.1)
Mostly mental	146 (64.9)	18 (41.9)	35 (64.8)		199 (61.8)
Physical and mental	76 (33.8)	23 (53.5)	14 (25.9)		113 (35.1)
Place of Work (previous month), N (%)				0.002	
Mostly or always at home (telework)	87 (38.7)	8 (18.6)	10 (18.5)		105 (32.6)
Same time at home as at Institution	48 (21.3)	10 (23.3)	21 (38.9)		79 (24.5)
Mostly or always at Institution	90 (40.0)	25 (58.1)	23 (42.6)		138 (42.9)

3.2. Factors Associated with Presenteeism

Academic qualifications, type, and place of work (that reached the significance level of $p < 0.2$ at univariate analysis) were included in a multivariable model to identify independent factors associated with presenteeism. The results of the multivariate model are displayed in Table 2. In the multivariable model, type and place of work remained significantly associated with presenteeism. Professionals working both at the Institution and at home (OR = 4.1; 95% CI: 1.8; 9.6) were more likely to have reduced performance of work activities due to presenteeism (Presenteeism ≤ 18) compared with those that worked mostly or always in telework. Those whose work was only physical (OR = 9.4; 95% CI: 1.7; 51.0) were also more likely to have reduced performance of work activities due to presenteeism (Presenteeism ≤ 18) compared with workers in a mental and physical job.

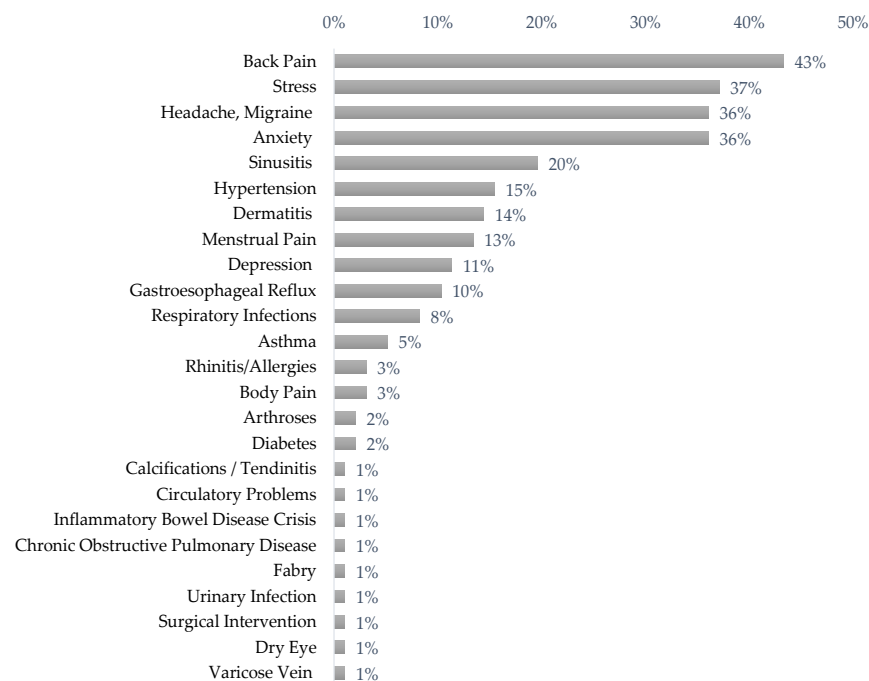
Table 2. Multinomial logistic regression analysis of socio-demographic and work factors associated with presenteeism.

No Presenteeism (Reference Category)	Presenteeism > 18		Presenteeism ≤ 18	
Characteristics	OR (95% CI)	p Value	OR (95% CI)	p Value
Academic Qualifications				
Up to 3rd cycle	2.2 (0.7; 7.2)	0.183	1.4 (0.3; 5.8)	0.672
Up to Secondary	1.0 (0.4; 2.3)	0.960	1.3 (0.6; 2.7)	0.549
Higher Education	1 (Ref.)		1 (Ref.)	
Place of Work (previous month)				
Mostly or always at home (telework)	1 (Ref.)		1 (Ref.)	
Same time at home as at Institution	2.0 (0.7; 5.6)	0.171	4.1 (1.8; 9.6)	0.001
Mostly or always at Institution	2.3 (0.9; 5.7)	0.070	2.1 (0.9; 5.0)	0.081
Work Type				
Physical and Mental	1 (Ref.)			
Physical	1.4 (0.2; 10.1)	0.723	9.4 (1.7; 51.0)	0.009
Mental	0.6 (0.3; 1.2)	0.161	1.7 (0.8; 3.7)	0.190

Note: Reference category for dependent variables is the group that reported not having any health problems in the previous month and who were present at work.

3.3. Health Problems

The most common health problems reported by participants at work in spite of illness were back pain (42.3%), stress (37.1%), headache, and anxiety (36.1%) (Figure 1).

**Figure 1.** Prevalence of common health problems reported by presenteeist participants.

3.4. Reasons for Presenteeism

From the participants who stated they attended work while ill ($n = 97$), we obtained a total of 115 answers. We identified three broad categories that support the reasons associated with presenteeism: personal, work, and health, as well as 11 subcategories. “Financial difficulty” was the most frequent reason (48.5%) for going to work ill. The subcategories “to avoid compromising the productivity of the organization” (13.4%) and “work commitment” (11.3%) also stand out. The positive reasons associated with presenteeism, such as “motivation/appreciation of work” (5.2%) or psychological motives (5.2%), should also be mentioned (Figure 2).

Categories	Subcategories	Registration Units (examples)	Responses	
			N	%
Personal motives	Financial difficulties	"I often work while sick, because I need to earn my salary to live and pay the bills (rent, water, electricity, etc.)." (P63)	47	48.5%
	Motivation/appreciation of work	"As I like what I do and enjoy doing it, it is a motivation to come to work though often with sacrifice" (P21)	5	5.2%
	Worried about performance evaluation	"Evaluation also depends on assiduity" (P42)	4	4.1%
Work-related motives	To avoid compromising the productivity of the organisation	"Finish tasks within deadlines" (P31)	13	13.4%
	Work commitment	"Having a middle-management job and the professional commitment with the Institution's management and the team I lead" (P7)	11	11.3%
	Associated with leadership/supervisor	"So I correspond to the will of my boss, so he is not upset with me" (P82)	9	9.3%
	Social support linked to colleagues	"My colleagues support me" (P4)	7	7.2%
Health motives	Undervaluing symptoms	As a principle I do not miss work days and because it I can bear, I pu up with the illness and deal with the situation. (P91)	9	9.3%
	Psychological motives	"For me it was very important to continue working because it was a way to clear my mind" (P55)	5	5.2%
	Controlled illness, in spite of symptoms	"It is an autoimmune illness that is controlled though without a cure" (P49)	4	4.1%
	Difficulty to Schedule medical appointments	"Difficulties in scheduling a medical appointment to request sick leave" (P42)	1	1.0%

Figure 2. Categories, subcategories, registration units, and frequency of the Reasons for Presenteeism.

4. Discussion

Being present at work in spite of being ill implies a future risk, not only because it may make it necessary to be absent due to illness for longer periods, but it may also lead to undervaluation of illness [32]. Thus, it is necessary to understand, recognize, and prevent this behavior. This study provided new information about the global phenomenon of presenteeism, confirming its existence among non-academic staff. It also provided further evidence of the effect of demographic and occupational characteristics on presenteeism in these professionals.

This study showed a prevalence of presenteeism of 30.1%, which confirms that it is a problem that may affect various professional groups, including public university non-academic staff. Moreover, 55.7% of the professionals who reported working while sick were included in the low presenteeism group, i.e., who reported decreased performance at work due to presenteeism. This demonstrates the importance of assessing presenteeism in a university context but also of identifying and monitoring high- and low-performance presenteeism groups, given the risk of the latter condition developing into more serious situations for both professionals and organizations. The management of presenteeism (highlighting the health of the professionals) may provide organizations with a competitive advantage by investing in measures to protect their valuable human resources [2].

One review expressed concern about presenteeism, showing rates ranging from 30% to more than 90% [33]. These results mean that professionals work while feeling sick and, therefore, with health conditions that may worsen over time [32], which can lead to high costs for organizations and professionals. In our study, among the main physical symptoms of presenteeism, we highlight back pain and headaches; among the main psychological symptoms, we highlight anxiety and stress. Other problems previously identified in other studies and in other areas of activity which led to presenteeism were rheumatoid arthritis, insomnia conditions, and back pain [34]. Another study carried out among university professionals point to the prevalence of back pain; Their more sedentary work exposed them to occupational risks, such as long hours of sitting, which is related to back pain

that affects their well-being [14]. The authors also add that due to this situation, they are more prone to depression [14]. Additionally, stress at the university workplace and in other areas of activity has negative consequences for the well-being of academic staff, their families, the organization, and their work colleagues [35]. Some of these problems may originate from the work context itself. There is evidence that stress and sleep, for example, are among the most common factors (alone or together) associated with primary headaches [36]. Professionals experience stress when there are strong work demands compared to their personal capacity to cope with them. Due to prolonged stress, workers may develop severe mental and physical health problems (e.g., musculoskeletal disorders and cardiovascular diseases) [37]. In turn, professionals with mental health problems are expected to present a high prevalence of presenteeism due to the fear of being stigmatized in the work context [4].

Identifying factors associated with presenteeism, especially those related to work, may have a dual benefit in reducing presence at work while sick but also in absence. This study also assessed the socio-demographic and work-related factors between the high and low presenteeism groups (higher and lower performance perception) and the group of professionals who did not report presenteeism. This may help to better identify factors associated with presenteeism and specifically with low and high presenteeism groups. Interestingly, none of these factors were associated with the highest-performing group despite presenteeism when compared to the group without presenteeism. This means that socio-demographic and work factors in high presenteeism do not increase the perception of lower performance even when working while ill. In this respect, there is recent evidence, in the context of the COVID-19 pandemic, that, for example, Swedish self-employed workers did not show a significant relationship between sickness presenteeism and age, gender, and education [13]. Conditions should be created to allow professionals to maintain high performance even when they are sick. On the other hand, we see that sex is the socio-demographic characteristic that the literature draws attention to [3,14,38]. According to a review of the literature, one reason could be associated with the traditional role of women, which still exists in various societies. Apart from paid employment, [women in these societies] also do housework, take care of the children, and have little time to care for themselves [14,39].

In turn, socio-demographic and work-related factors were associated with presenteeism with low performance. The type and place of work were identified as factors that may influence the perception of performance due to presenteeism. Specifically, professionals with only physical jobs are more likely to belong to the low presenteeism group than those with both physical and mental work. This demonstrates that physical work can be associated with greater presenteeism [40]. In our study, physical work is more evident in the occupational categories of operatives and assistants. Similarly, professionals who perform hybrid work, that is, who work remotely and also go into the workplace, compared to those who perform only telework, presented a higher risk of belonging to the group of low performance due to presenteeism. This new work format, the hybrid model, can be perceived as being poorly structured and ambiguous if compared to full-time face-to-face or remote work [41]. This might explain our participants' sudden change of conditions due to COVID. There were inevitable necessary adaptations to a new context. The literature indicates that academic professionals recounted stressful situations and some lack of clarity at the organizational level [26]. A study conducted with professionals from three Swedish public institutions reported that there are challenges regarding risks of contagion from COVID-19, which put pressure on organizations to ensure a better physical environment. Distancing between professionals is needed increasing safety at the workplace, as well as organizations are expected to assist professionals with guidelines and means to meet the needs for appropriate ergonomics of the home office. Other challenges included the decision concerning the days when professionals go to work to carry out the tasks adapted to face-to-face or remote work [41]. In another study conducted during the COVID-19 pandemic with students and professionals (teaching and staff) at a Finnish university, staff

members reported being excited to have learned new working practices related to remote work. However, this also led to pressures and exhaustion [42]. The hybrid model could be seen as a favorable format for higher education professionals. Interestingly, a study conducted during the COVID-19 quarantine with Lithuanian professionals in the public sector, which includes school and higher education teachers, points out that doing telework two days a week may be synonymous with motivation, and may not be detrimental to the quality of relationship and work produced by the professional which does not occur with those who work remotely most of the time [43]. If, on the one hand, working in person in the organization is favorable because there is a better ergonomic configuration of the workplace, face-to-face socialization with colleagues, and natural physical activity due to various types of travel (e.g., to and from the organization) [41], on the other hand, according to a review, working at home means being able to reconcile professional and personal life, work flexibility, lower health risks (e.g., because of contagion), and saving travel time [44]. Thus, hybrid working, a model with a future, makes it possible to balance the advantages of working at home and in the organization and consequently increase productivity [45]. However, as it is more difficult to identify, organizations should be aware of the probable risks of this type of work (home-based telework) [20].

It is important to bear in mind other potential variables that may demonstrate differences between the groups belonging to our study. Another study in a university context suggests the need to adopt procedures to avoid psychosocial risks among university professionals and not only consider the well-being of students [23]. According to evidence, organizations must privilege a culture of absence due to illness and minimize presenteeism [11]; equally relevant is occupational health, focusing on the promotion of better work contexts that protect the health of professionals [46]. Social support in the workplace, including that of supervisors and co-workers, may help to prevent presenteeism as it favors interpersonal relations, a positive environment in the workplace, and the possibility of flexible timetables, where this is possible [47], and having time for self-care, avoiding going to work when ill (because a member of the group may be temporarily substituted by reorganization of the team) [3].

The results of the qualitative analysis allowed us to identify the underlying reasons why non-academic university staff work even if they are ill. Personal, work, and health-related motivations were the categories identified in this study. Experiencing financial difficulties was the most frequently mentioned reason. Professionals cannot afford to have their salaries reduced, and this situation overlaps with health problems [48]. Other more prevalent reasons were to avoid compromising the organization's productivity and work commitment. Organizations that are short of human resources may need to extend not only their time but also their workload. This might have been reinforced during the aforementioned COVID-19 pandemic due to colleagues being sick. Thus, pressure and stress may lead to a higher risk of presenteeism [17]. It was interesting to note that professionals may present therapeutic presenteeism, as it can be positive for self-esteem to have a favorable work environment, to enjoy the social support of the team, and create a reputation as a conscientious professional with a sense of responsibility (however not very productive). For example, when professionals are aware of a consistent threat to their own health, they may demonstrate presenteeism if they consider that the negative effects of it may be less than the positive consequences [6,7]. Some of the statements found in our study indicating a preference for working were: "For me it was very important to continue working, because it was a way to clear my mind."; "My colleagues support me." Presenteeism can be a sustainable option to ensure performance, even under adverse health conditions, if the workplace is favorable and there is flexibility in terms of labor resources that enable adaptation. In this way, there is a necessary balance between the demands of professional performance and health limitations (adaptive presenteeism) [6]. On the other hand, work motivation can also lead to presenteeism, for example, when the professional is involved in work and its performance demands while feeling ill, but without increasing the burden on his/her health (functional presenteeism) [6]. Both work demands and personal

and work resources lead to presenteeism; this is due to the existence of health problems and motivation, with positive attitudes being synonymous with commitment, satisfaction, and engagement [4].

5. Limitations and Future Research

With opportunities for future research, our study has some limitations. First, the participants in our study are limited to a single public university. Hence, it is not clear whether the results are general among other higher education institutions, even though it includes the participation of big universities. Additionally, being carried out during the period of the COVID-19 pandemic constitutes a comparative framework for future investigations. Second, the cross-sectional design and the convenience sample do not allow us to draw conclusions concerning the causal relationship between factors. Third, our results on presenteeism are based on a self-perception measure. Nevertheless, SPS-6 was applied previously, and it is a reliable and widely used scale. Finally, even though a wide confidence interval was noted in the final analysis due to the low numbers of participants exposed to physical work, the direction of the ORs was also confirmed through bootstrap analysis.

While we believe our results provide the starting point for any discussion of non-academic staff, presenteeism also raises a number of other important questions to be addressed in further research. In future research, it is important to expand the sample to other universities, and further relations can be tested by integrating other domains such as university size and type of professional career. On the other hand, any analysis of presenteeism must consider other potential factors that influence the phenomenon and can better characterize professionals with high and low presenteeism. This development will help higher education institutions to minimize presenteeism and to introduce new opportunities for the non-academic university staff. In addition, prospective studies are needed to evaluate possible causes of presenteeism.

6. Conclusions

The existence of presenteeism in non-academic staff in public universities, as well as the presence of low and high-performance groups due to presenteeism is a reality. The comparison between groups allowed us to demonstrate the similarity of the high-performing presenteeism group with the group without health problems in the demographic and work factors considered. However, the same is not true in the low performance due to presenteeism (condition). Performing only physical tasks and hybrid work may increase perceptions of lower performance due to presenteeism. It is necessary for public university institutions to rethink the working conditions that should be adjusted to the needs of professionals, especially those needs which emerged in a pandemic context, such as face-to-face and hybrid work, where social support at work can minimize health problems and attenuate the reasons that lead professionals to work even if they feel ill, avoiding or alleviating presenteeism.

Going to work while ill depends mainly on financial difficulties, responsibility, and devaluation of symptoms. Curiously, this study demonstrates the relevance of considering the positive effects of presenteeism, such as helping to forget and overcome problems—until now, the focus has mainly been on its negative effects and how to reduce the behavior.

These findings raise the importance of evaluating presenteeism in non-academic staff to create conditions to maintain high performance despite presenteeism and intervene in low performance due to presenteeism.

Author Contributions: Conceptualization, S.M., J.B. and E.B.; Methodology, S.M., J.B. and E.B.; Validation, S.M., J.B. and E.B.; Formal Analysis, J.B.; Investigation, S.M., J.B. and E.B.; Resources, S.M., J.B. and E.B.; Data Curation, J.B.; Writing—Original Draft Preparation, S.M.; Writing—Review and Editing, J.B. and E.B.; Visualization, S.M., J.B. and E.B.; Supervision, E.B.; Project Administration, S.M. and E.B. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: This study was approved by the Ethics Committee of the Institute of Biomedical Sciences Abel Salazar, University of Porto, Portugal (approved code: 2021/CE/P012(P352/CETI/ICBAS)).

Informed Consent Statement: All the participants were previously informed about the purpose and the confidentiality principles of the research, and they signed informed consent.

Data Availability Statement: The data are not publicly available due to privacy issues. Requests to the datasets should be directed to Sónia Magalhães, soniamagalhaes73@gmail.com.

Acknowledgments: We are grateful to Patricia Foito e Camisão for proofreading the article.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Johns, G. Presenteeism in the workplace: A review and research agenda. *J. Organ. Behav.* **2010**, *31*, 519–542. [[CrossRef](#)]
2. Hemp, P. Presenteeism: At work-but out of it. *Harv. Bus. Rev.* **2004**, *82*, 49–58. [[PubMed](#)]
3. Miraglia, M.; Kinman, G. The hidden costs of working when sick. *Psychologist* **2017**, *30*, 36–40.
4. Miraglia, M.; Johns, G. Going to work ill: A meta-analysis of the correlates of presenteeism and a dual-path model. *J. Occup. Health Psychol.* **2016**, *21*, 261. [[CrossRef](#)]
5. Cooper, C.L.; Lu, L. Presenteeism as a global phenomenon: Unraveling the psychosocial mechanisms from the perspective of social cognitive theory. *Cross Cult. Strateg. Manag.* **2016**, *23*, 1–40. [[CrossRef](#)]
6. Karanika-Murray, M.; Biron, C. The health-performance framework of presenteeism: Towards understanding an adaptive behaviour. *Hum. Relat.* **2020**, *73*, 242–261. [[CrossRef](#)]
7. Lohaus, D.; Habermann, W.; Kertoubi, I.E.; Röser, F. Working while ill is not always bad—positive effects of Presenteeism. *Front. Psychol.* **2020**, *11*, 4059. [[CrossRef](#)]
8. Keramat, S.A.; Alam, K.; Gow, J.; Biddle, S.J. A longitudinal exploration of the relationship between obesity, and long term health condition with presenteeism in Australian workplaces, 2006–2018. *PLoS ONE* **2020**, *15*, e0238260. [[CrossRef](#)]
9. Chambers, C.; Frampton, C.; Barclay, M. Presenteeism in the New Zealand senior medical workforce—a mixed-methods analysis. *N. Z. Med. J.* **2017**, *130*, 10–21.
10. De Perio, M.A.; Wiegand, D.M.; Brueck, S.E. Influenza-like illness and presenteeism among school employees. *Am. J. Infect. Control* **2014**, *42*, 450–452. [[CrossRef](#)]
11. Webster, R.K.; Liu, R.; Karimullina, K.; Hall, I.; Amlot, R.; Rubin, G.J. A systematic review of infectious illness presenteeism: Prevalence, reasons and risk factors. *BMC Public Health* **2019**, *19*, 799. [[CrossRef](#)] [[PubMed](#)]
12. Chiu, S.; Black, C.L.; Yue, X.; Greby, S.M.; Laney, A.S.; Campbell, A.P.; de Perio, M.A. Working with influenza-like illness: Presenteeism among US health care personnel during the 2014–2015 influenza season. *Am. J. Infect. Control* **2017**, *45*, 1254–1258. [[CrossRef](#)] [[PubMed](#)]
13. Vinberg, S.; Landstad, B.J.; Tjulin, Å.; Nordenmark, M. Sickness Presenteeism Among the Swedish Self-Employed During the Covid-19 Pandemic. *Front. Psychol.* **2021**, *12*, 723036. [[CrossRef](#)] [[PubMed](#)]
14. Hanna, F.; Daas, R.N.; El-Shareif, T.J.; Al-Marridi, H.H.; Al-Rojoub, Z.M.; Adegbeye, O.A. The relationship between sedentary behavior, back pain, and psychosocial correlates among university employees. *Front. Public Health* **2019**, *7*, 80. [[CrossRef](#)] [[PubMed](#)]
15. Baker, M.G.; Peckham, T.K.; Seixas, N.S. Estimating the burden of United States workers exposed to infection or disease: A key factor in containing risk of COVID-19 infection. *PLoS ONE* **2020**, *15*, e0232452. [[CrossRef](#)] [[PubMed](#)]
16. Probst, T.M.; Lee, H.J.; Bazzoli, A.; Jenkins, M.R.; Bettac, E.L. Work and non-work sickness presenteeism: The role of workplace COVID-19 climate. *J. Occup. Environ. Med.* **2021**, *63*, 713. [[CrossRef](#)]
17. Kinman, G.; Grant, C. *Presenteeism during the COVID-19 Pandemic: Risks and Solutions*; Oxford University Press UK: Oxford, UK, 2021; Volume 71, pp. 243–244.
18. Surma, M.J.; Nunes, R.J.; Rook, C.; Loder, A. Assessing Employee Engagement in a Post-COVID-19 Workplace Ecosystem. *Sustainability* **2021**, *13*, 11443. [[CrossRef](#)]
19. Cuerdo-Vilches, T.; Navas-Martín, M.Á.; Oteiza, I. Working from home: Is our housing ready? *Int. J. Environ. Res. Public Health* **2021**, *18*, 7329. [[CrossRef](#)]
20. Steidelmüller, C.; Meyer, S.-C.; Müller, G. Home-based telework and presenteeism across Europe. *J. Occup. Environ. Med.* **2020**, *62*, 998. [[CrossRef](#)]
21. Mosteiro-Díaz, M.P.; Baldonado-Mosteiro, M.; Borges, E.; Baptista, P.; Queirós, C.; Sánchez-Zaballos, M.; Felli, V.; Abreu, M.; Silva, F.; Franco-Correia, S. Presenteeism in nurses: Comparative study of Spanish, Portuguese and Brazilian nurses. *Int. Nurs. Rev.* **2020**, *67*, 466–475. [[CrossRef](#)]
22. Das Neves Borges, E.M.; Queirós, C.; Vieira, M.R.F.S.P.; Teixeira, A.A.R. Percepções e Vivências de Enfermeiros sobre o seu Desempenho na Pandemia da COVID-19. *Rev. Rene.* **2021**, *22*, e60790.

23. Brewster, L.; Jones, E.; Priestley, M.; Wilbraham, S.J.; Spanner, L.; Hughes, G. 'Look after the staff and they would look after the students' cultures of wellbeing and mental health in the university setting. *J. Furth. High. Educ.* **2022**, *46*, 548–560. [\[CrossRef\]](#)
24. Nawi, N.C.; Ismail, M.; Ibrahim, M.A.H.; Raston, N.A.; Zamzamin, Z.Z.; Jaini, A. Job satisfaction among academic and non-academic staff in public universities in Malaysia: A review. *Int. J. Bus. Manag.* **2016**, *11*, 148–153. [\[CrossRef\]](#)
25. Samarasinghe, J.N. Determinants of Presenteeism: A Study on Non-Academics in State Higher Educational Institutions in Sri Lanka. *Sri Lankan J. Hum. Res. Manag.* **2021**, *11*, 1–11. [\[CrossRef\]](#)
26. Watermeyer, R.; Crick, T.; Knight, C.; Goodall, J. COVID-19 and digital disruption in UK universities: Afflictions and affordances of emergency online migration. *High. Educ.* **2021**, *81*, 623–641. [\[CrossRef\]](#) [\[PubMed\]](#)
27. Aboagye, E.; Björklund, C.; Gustafsson, K.; Hagberg, J.; Aronsson, G.; Marklund, S.; Leineweber, C.; Bergström, G. Exhaustion and impaired work performance in the workplace: Associations with presenteeism and absenteeism. *J. Occup. Environ. Med.* **2019**, *61*, e438–e444. [\[CrossRef\]](#)
28. Ferreira, A.I.; Martinez, L.F.; Sousa, L.M.; Cunha, J.V.d. Validation into Portuguese language of presenteeism scales WLQ-8 and SPS-6. *Avaliação Psicológica* **2010**, *9*, 253–266.
29. Koopman, C.; Pelletier, K.R.; Murray, J.F.; Sharda, C.E.; Berger, M.L.; Turpin, R.S.; Hackleman, P.; Gibson, P.; Holmes, D.M.; Bendel, T. Stanford presenteeism scale: Health status and employee productivity. *J. Occup. Environ. Med.* **2002**, *44*, 14–20. [\[CrossRef\]](#)
30. Brborović, H.; Brborović, O.; Brumen, V.; Pavleković, G.; Mustajbegović, J. Are nurse presenteeism and patient safety culture associated: A cross-sectional study. *Arh. Za Hig. Rada I Toksikol.* **2014**, *65*, 149–155. [\[CrossRef\]](#)
31. Bardin, L. *Análise de Conteúdo*. 3ª. reimp. da 1ª; São Paulo: Edições 70: Lisboa, Portugal, 2016.
32. Skagen, K.; Collins, A.M. The consequences of sickness presenteeism on health and wellbeing over time: A systematic review. *Soc. Sci. Med.* **2016**, *161*, 169–177. [\[CrossRef\]](#)
33. Lohaus, D.; Habermann, W. Presenteeism: A review and research directions. *Hum. Resour. Manag. Rev.* **2019**, *29*, 43–58. [\[CrossRef\]](#)
34. Kigozi, J.; Jowett, S.; Lewis, M.; Barton, P.; Coast, J. The estimation and inclusion of presenteeism costs in applied economic evaluation: A systematic review. *Value Health* **2017**, *20*, 496–506. [\[CrossRef\]](#) [\[PubMed\]](#)
35. Kinman, G. Doing more with less? Work and wellbeing in academics. *Somatechnics* **2014**, *4*, 219–235. [\[CrossRef\]](#)
36. Pellegrino, A.B.W.; Davis-Martin, R.E.; Houle, T.T.; Turner, D.P.; Smitherman, T.A. Perceived triggers of primary headache disorders: A meta-analysis. *Cephalalgia* **2018**, *38*, 1188–1198. [\[CrossRef\]](#) [\[PubMed\]](#)
37. Safety, E.A.F.; Work, H.A. *Psychosocial Risks and Stress at Work*; European Agency for Safety and Health at Work Bilbao: Bilbao, Spain, 2018. Available online: <https://osha.europa.eu/en/themes/psychosocial-risks-and-stress> (accessed on 18 June 2022).
38. Janssens, H.; Clays, E.; De Clercq, B.; De Bacquer, D.; Casini, A.; Kittel, F.; Braeckman, L. Association between psychosocial characteristics of work and presenteeism: A cross-sectional study. *Int. J. Occup. Med. Environ. Health* **2016**, *29*, 331–344. [\[CrossRef\]](#) [\[PubMed\]](#)
39. Benjamin, K.; Donnelly, T.T. Barriers and facilitators influencing the physical activity of Arabic adults: A literature review. *Avicenna* **2013**, *2013*, 8. [\[CrossRef\]](#)
40. Lima, J.; Queirós, C.; Borges, E.; Abreu, M. Saúde dos enfermeiros: Presentismo e stress no trabalho. *Int. J. Work. Conditions* **2019**, *17*, 90–107.
41. Babapour Chafi, M.; Hultberg, A.; Bozic Yams, N. Post-Pandemic Office Work: Perceived Challenges and Opportunities for a Sustainable Work Environment. *Sustainability* **2022**, *14*, 294. [\[CrossRef\]](#)
42. Uusiautti, S.; Hyvärinen, S.; Björkman, S. The Mystery of Remote Communality: University Students' and Teachers' Perceptions during the COVID-19 Pandemic. *Hum. Arenas* **2021**, 1–18. [\[CrossRef\]](#)
43. Raišienė, A.G.; Rapuano, V.; Varkulevičiūtė, K.; Stachová, K. Working from home—Who is happy? A survey of Lithuania's employees during the COVID-19 quarantine period. *Sustainability* **2020**, *12*, 5332. [\[CrossRef\]](#)
44. Moglia, M.; Hopkins, J.; Bardoel, A. Telework, hybrid work and the United Nation's Sustainable Development Goals: Towards policy coherence. *Sustainability* **2021**, *13*, 9222. [\[CrossRef\]](#)
45. Bloom, N. *Hybrid is the Future of Work*; Stanford Institute for Economic Policy Research (SIEPR): Stanford, CA, USA, 2021. Available online: <https://siepr.stanford.edu/publications/policy-brief/hybrid-future-work> (accessed on 28 June 2022).
46. Kim, J.-H.; Yoon, J.; Bahk, J.; Kim, S.-S. Job insecurity is associated with presenteeism, but not with absenteeism: A study of 19 720 full-time waged workers in South Korea. *J. Occup. Health* **2020**, *62*, e12143. [\[CrossRef\]](#) [\[PubMed\]](#)
47. Yang, T.; Shen, Y.-M.; Zhu, M.; Liu, Y.; Deng, J.; Chen, Q.; See, L.-C. Effects of co-worker and supervisor support on job stress and presenteeism in an aging workforce: A structural equation modelling approach. *Int. J. Environ. Res. Public Health* **2016**, *13*, 72. [\[CrossRef\]](#) [\[PubMed\]](#)
48. Mekonnen, T.H.; Tefera, M.A.; Melsew, Y.A. Sick at work: Prevalence and determinants among healthcare workers, western Ethiopia: An institution based cross-sectional study. *Ann. Occup. Environ. Med.* **2018**, *30*, 2. [\[CrossRef\]](#)

**The relationship between Presenteeism, Quality of Life and Social Support
in higher education professionals: A cross-sectional path analysis**

Plos One. 2022 April; 17(4): e0267514

Sónia Magalhães, Joselina Barbosa, Elisabete Borges

RESEARCH ARTICLE

The relationship between presenteeism, quality of life and social support in higher education professionals: A cross-sectional path analysis

Sónia Magalhães^{1,2*}, Joselina Barbosa², Elisabete Borges^{3,4}

1 Institute of Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal, **2** Faculty of Medicine of the University of Porto, Porto, Portugal, **3** Nursing School of Porto, ESEP, Porto, Portugal, **4** Center for Health Technology and Services Research—CINTESIS@RISE, Porto, Portugal

* soniamagalhaes73@gmail.com



Abstract

Presenteeism is the practice of being present at workplace, but not being able to carry out all the tasks due to health problems. Social support globally associated with health and well-being might positively influence presenteeism and consequently, the quality of life of these professionals. With this in mind, the aim of this study was to investigate the relationships between presenteeism, quality of life and social support in the work of non-teaching and non-research professionals within the context of higher education. A cross-sectional study was conducted, in which sociodemographic data were collected and the Portuguese versions of the Stanford Presenteeism Scale (SPS-6) (which includes the dimensions work-completed and distraction avoided) and Quality of Life Index (EUROSHIS-QOL-8) and the subscales of Supervisor's Social Support and Peers' Social Support of the Copenhagen Psychosocial Questionnaire (COPSOQ) were used. The questionnaire was applied online, and 322 professionals from a public university higher education institution in Northern Portugal participated in the study. Presenteeism was reported by 97 (30.1%) professionals. The peers' social support was positively associated with quality of life. The supervisor's social support was positively associated with distraction avoided and work completed and positively indirectly associated with quality of life, and the association was mediated by distraction avoided. We conclude that implementing strategies that can promote social support in the work context, namely strengthening networks between colleagues and competent and well-trained supervisors may prevent or reduce presenteeism in higher education professionals, as well as, provide a better quality of life.

OPEN ACCESS

Citation: Magalhães S, Barbosa J, Borges E (2022) The relationship between presenteeism, quality of life and social support in higher education professionals: A cross-sectional path analysis. PLoS ONE 17(4): e0267514. <https://doi.org/10.1371/journal.pone.0267514>

Editor: Rogis Baker, Universiti Pertahanan Nasional Malaysia, MALAYSIA

Received: January 5, 2022

Accepted: April 10, 2022

Published: April 21, 2022

Copyright: © 2022 Magalhães et al. This is an open access article distributed under the terms of the [Creative Commons Attribution License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Data Availability Statement: All relevant data are within the paper and its [Supporting Information](#) files.

Funding: The author(s) received no specific funding for this work.

Competing interests: The authors have declared that no competing interests exist.

Introduction

Presenteeism, being the opposite of absenteeism, is generically defined as the practice of being present at the workplace but not being able to carry out all of the tasks due to health problems,

with implications for the productivity of organisations and people's health [1]. Presenteeism negatively affects work satisfaction and person's wellbeing [2], in terms of health, performance and quality of life, as well as affecting the employer, in terms of productivity and consequent financial losses [3]. This situation worsens over the years of work [4].

The literature has shown that besides not being a recent phenomenon [1], it is clearly a globally observed phenomenon [3], which covers all sectors of activity, although it is more prevalent in the areas of care or welfare services, education and health [5]. While, for example, in the United States of America, research focuses more on the impact of the disease on productivity [6], in Europe it has focused more on the disease and the organisational conditions [1], with the latter being the basis for the development of the present study.

In Portugal, although there are few published studies on presenteeism, it can be observed in our institutions [7–9]. One of the most recent studies shows a 55% prevalence of presenteeism among Portuguese nurses [8]. This study also showed that the levels of presenteeism were less pronounced in young and less experienced nurses. In addition, female professionals were able to complete their work when they were ill than male professionals. Compared to other countries, Brazil (36%) and Spain (30%), Portugal had a higher presenteeism prevalence (55%) [8].

There are several health problems that may be at the root of presenteeism, from the least to the most severe, leading the latter to absenteeism and overall activity impairment [10]. These problems include chronic or episodic illnesses, such as seasonal allergies [11], headaches [11,12], musculoskeletal pains [12], gastro-intestinal problems [11], stress [10,11], depression [10] among others.

A review study points to a diversity of factors that may contribute to workplace presenteeism, ranging from personal (e.g., attitudes and orientations towards work, intrinsic motivation, feelings of satisfaction and accomplishment, involvement and commitment to work), to organizational (e.g., work overload, time pressure, lack of resources, job insecurity, availability of substitution, job demands, stress, strict absence management policies, competitive culture, limited promotion prospects). These factors appear to influence the decision to continue working even though ill [13], which results in a worse quality of life for the professional [14]. Regarding academic professionals, there has been evidence that the level of commitment to work is quite high [15]. This could mean that they would resist any interventions that would motivate them to withdraw from it, even when they suffer from serious illnesses. Hence, organisational factors outweigh personal ones [15].

With the emergence of the pandemic by COVID-19, presenteeism became an even bigger problem. Institutions had to adapt to remote working, teleworking, and embrace this new model as the norm. Virtual presenteeism, which means working virtually at home when you are ill, but not to the point of preventing you from working, has become a somewhat silent issue. At first, it is thought that autonomy and flexibility can help to reconcile work with personal and family life. However, it can have the opposite effect and lead to the compromise of the supposed balance. Continually working in the domestic space, with constant interruptions, makes it difficult to establish a boundary with work, which leads to excessive involvement in work activities [16,17]. Over-commitment to work can also lead to workaholism, which can hinder mental wellbeing and work-family balance [18].

In addition, after a period of confinement due to the COVID-19 pandemic, people resumed their work. Evidence suggests that in the post-pandemic phase (COVID-19), in the face of the precarious environment, workers chose to engage in more excessive work behaviours in order to protect their jobs and keep up with the demands of their jobs [16,17].

Although previous studies have significantly contributed to our understanding of presenteeism, it becomes essential to identify protective factors of this phenomenon that promote the positive functioning of professionals at the workplace and, consequently, improve their quality

of life. Cumulatively, workers with the same health problems, despite presenting presenteeism, may reveal different levels of productivity loss. The characteristics of the professional and the organisational context interfere in presenteeism [19].

There is evidence that social support is positively associated with health and well-being at work [20]. In this context, social support can be an important factor in reducing presenteeism. Various sources of social support (e.g. informal support network), particularly the supervisor's support, seem to be significant resources of health and well-being at work, and are considered key factors in promoting health at the workplace [20]. The supervisor's social support and the establishment of a good relationship between leader and employee become relevant to decrease the levels of presenteeism and promote quality of life [21].

Working sick can also be considered an act of organisational citizenship, a sign of commitment and loyalty to employers and colleagues [19]. It is in this context that work can be beneficial, since it provides opportunities for involvement and social support, both of which are determining factors in coping with job stress and can replace or reinforce other absent resources, thus, work and personal resources can cushion the negative effects of work stressors, such as time pressure, work overload, and task uncertainty [20].

If supervisor support is lacking, colleagues can play a compensatory role in coping with difficulties (e.g., readiness to help and interpersonal relationships), as a protector of the negative impacts of presenteeism [17]. Social support from colleagues is termed as mutual help between co-workers in performing their duties, sharing both information and know-how, encouraging attitudes and camaraderie [22]. In this sense, social support refers to useful and available social interactions in the workplace from supervisors and colleagues [17,23].

Social support is the target of research in Portugal in organisational contexts due to its effects on quality of life. The same is not true for presenteeism.

Given the scarcity of studies on presenteeism, in Portugal, and the importance of this phenomenon in the organisational context, we believe that it is important to understand to what extent presenteeism and quality of life are related, as well as the influence that social support at work may have in these two domains. This will allow to equate adaptive strategies, not only of coping, but also of prevention.

Thus, the aim of this study is to investigate the relationships between presenteeism, quality of life and social support at work among non-teaching and non-researching professionals in university higher education.

Materials and methods

Study design and ethical standards

A cross-sectional study was designed and implemented in a Portuguese University School, in the North of Portugal. The study's population consisted of all the University's technical professionals. The data was collected between April and June of 2021 using a mailed self-administered questionnaire. The study was formally approved by the Ethics Committee of the Institute of Biomedical Sciences Abel Salazar, University of Porto, Porto, Portugal, and obtained a formally favourable opinion from the Data Protection Unit of the same University. All the participants were informed, before the survey, of the research's purpose and the confidentiality principles. In addition, participants voluntarily signed informed consents online. They could withdraw from answering the questionnaire at any time.

Measurements and data collection

A structured questionnaire was used in order to elicit information on participants characteristics, presenteeism, quality of life and social support. We collected data on demographic

characteristics (age, sex, academic qualification, marital status, household) and labour characteristics (professional category, supervisor, labour contract, years of work at the institution, type of work and place of work (at home telecommuting or in the workplace)).

Presenteeism was evaluated using the Stanford Presenteeism Scale (SPS-6) which assesses the ability of workers to complete their work tasks despite health problems [24]. The literature shows that this is one of the most widely used instruments to measure presenteeism and confirmed good psychometric properties in the Portuguese population [7]. In this study the Portuguese version was adopted. The original scale [24] and version adapted to Portugal [7] discriminated two dimensions: completed work (CW) and avoided distraction (AD). The first factor focuses on the physical causes of presenteeism and corresponds to the amount of work done under the effect of the causes of presenteeism. The second factor is related to psychological aspects and corresponds to the amount of concentration mobilised to produce when there is a presenteeism effect. Each of these factors is assessed by three items, which totals six questions anchored on a scale with five response modalities (1- strongly disagree to 5- strongly agree) [7,24]. In the CW factor, the worst condition is to score "5—strongly disagree" on all three questions, indicating that the health condition interfered with work. In the AD factor, the worst condition consists of marking "1—I totally agree", where each numerical response value is converted into the opposite value. The total score of the SPS-6 corresponds to the sum of the values obtained in both dimensions. A higher value corresponds to a high level of presenteeism, i.e. higher performance at work. Health problems will be asked, in relation to the last month, based on the validation work of the scale for the Portuguese population [7].

Assessment of presenteeism was first calculated separately (each subscale) and then added together to obtain the global score. The resulting Cronbach's α coefficient for this scale was 0.821 and for the subscales AD and CW it was 0.774 and 0.832, respectively, showing a good internal consistency.

Quality of life (Qol) was assessed using the Quality of life index (EUROSHIS- QOL-8) [25,26], an eight-item measure adapted from the World Health Organization Quality of Life—shortened version. The EUROHIS-QOL 8-index provides a generic measurement of quality of life covering four domains: physical, psychological, social, and environmental. This instrument showed good reliability and validity across a range of countries, and a universal one-factor structure with a good fit [27]. The psychometric properties of the EUROHIS-QOL 8-index validate its use in Portugal [26]. The internal consistency in the current sample was very good (Cronbach's $\alpha = 0.829$). Each item is answered through a Likert-type scale (five points), varying between "Very Bad" and "Very Good" or "Not at all" and "Completely" and also between "Very Dissatisfied" and "Very Satisfied". The sum of the eight items gives a total result, and a higher value corresponds to a better perception of the quality of life [25].

Social support at work was assessed using the Portuguese medium version of the Copenhagen Psychosocial Questionnaire (COPSOQ II) [28,29]. The COPSOQ is a validated and comprehensive questionnaire that gathers international consensus regarding its validity and comprehensibility in the evaluation of many of the most relevant psychosocial dimensions inherent to the work context [28]. The scales from the Interpersonal Relations and Leadership of the Portuguese medium version of COPSOQ II regarding Social Support from Supervisors (SSS) and Social Support from Colleagues (CSS) were used in this study. These scales are composed of three items each, assessed on a Likert-type scale (five points), ranging from "Never/almost never" to "Always". The score of the scales corresponds to the average of the respective items. A higher value corresponds to a high level of social support.

Assessment of social support was first calculated separately (each subscale) and then added together to obtain the global score (TSS). The resulting Cronbach's α coefficient for this scale, TSS, was 0.857 and for the subscales CSS and SSS was 0.808 and 0.888 respectively showing a good internal consistency.

In this study, the total score of all scales was converted into a scale from 0 to 100.

Statistical analysis

To summarize continuous variables, mean and standard deviation (SD) were used; for the categorical variables, absolute and relative frequency were calculated. T-test was used for comparison of study outcomes between groups.

The internal consistency of the scales was validated with Cronbach's α coefficient.

The relationship between scores on the social support, presenteeism and quality of life were first examined using Pearson correlation analysis. To determine whether these significant correlations continued after controlling for confounding factors (age, sex, academic qualification, marital status, household, professional category, supervisor, labour contract, years of work at institution, type and place of work) backward stepwise multiple linear regression analyses were conducted. Finally, the relation between the study measures was examined through path analysis using the Maximum Likelihood method. Standardized regression weights were used to represent path coefficients between variables with p-values less than 0.05. Due to the exploratory nature of the model, we inspected the modification indices in order to see whether the addition of a new path would improve the overall fit of the model. To investigate the significance of indirect effects, this study used the bootstrapping method. A complete case population was used in this analysis. No variables showed values of skewness and kurtosis indicators of severe violations to the normal distribution. Model fit was determined by the following multiple indices: Chi-square statistic, comparative fit index (CFI values ≥ 0.9), Tucker Lewis Index (TLI values ≥ 0.9), root mean square error of approximation (RMSEA values ≤ 0.08) and PClose values ≥ 0.05 [30]. The significance level alpha was set to 5%. The software packages IBM SPSS Statistics 26.0 and AMOS 26.0 were used for the data analysis.

Results

Participants

There are 1658 employees of a public higher education institution in northern Portugal who were invited to participate in the study, of whom 325 (20%) fully responded to the sociodemographic questionnaire. Of these, three didn't work last month and so they were excluded. According to the presenteeism scale criteria, from this group, only the ones who reported having gone to work ill in the last month were asked to respond to the second part of SPS-6. As a result, the final study population was built with a total of 97 (of 322) participants. This means that 30.1% professionals experienced presenteeism.

Table 1 shows the characteristics of the participants with presenteeism. The mean age was 46.1 (SD 8.4) and 71.1% were females. Most participants (60.8%) had higher school education and were married or are in an unmarried partnership (67.0%). Household consists on average of about 3 people (SD 1.1).

Regarding participants' labour characteristics, the group included 13 (13.4%) Operational Assistants, 28 (28.9%) Technical Assistants, 53 (54.6%) Senior Technicians and 3 (3.1%) had another category. Most of the participants were in a public contract (56.7%) and were not supervisors (84.5%). The average length of work at the institution was of 15.5 years (SD 8.7). The type of work was mostly mental work (54.6%) and in the last month 18.6% worked mostly

Table 1. Participants characteristics.

Participants Characteristics	N (%)
Sex	
Female	69 (71.1)
Male	28 (28.9)
Age, Mean (SD)	46.1 (8.4)
Academic Qualifications	
≤ 3 rd Cycle	12 (12.4)
Secondary	26 (26.8)
Higher Education	59 (60.8)
Marital Status	
Married or unmarried partnership	65 (67.0)
Divorced. Separated. Widow/er or Single	32 (33.0)
Household, Mean (SD)	2.8 (1.1)
Professional Category	
Operational Assistant	13 (13.4)
Technical Assistant	28 (28.9)
Senior Technician	53 (54.6)
Other	3 (3.1)
Supervisor	
No	82 (84.5)
Yes	15 (15.5)
Labour Contract	
Public	55 (56.7)
Private	42 (43.3)
Years of work at the institution, Mean (SD)	15.5 (8.7)
Type of Work	
Most physical	7 (7.2)
Most mental	53 (54.6)
Physical and mental	37 (38.1)
Last month worked	
Mostly or always at home, in telework	18 (18.6)
Same at home as at workplace	31 (32.0)
Mostly or always at workplace	48 (49.5)

Note: Data are presented as N (%) unless otherwise indicated.

<https://doi.org/10.1371/journal.pone.0267514.t001>

at home, teleworking, while 32.0% worked half-half, at home and workplace, and 49.5% worked mostly at their workplace (Table 1).

Distribution and correlations of study variables. The presenteeism was self-declared by 97 (30.1%) workers, with a mean score of 50.0 (SD 21.3) on the global score of the SPS-6, ranging from 0 to 100. The CW dimension had a mean of 64.1 (SD 23.6). In AD the mean was 35.9 (SD 25.2). The mean score for TSS was 44.8 (SD 22.1), for CSS was 47.7 (21.7) and SSS was 41.8 (SD 26.0). The mean score for QoL was 49.2 (SD 15.4). Presenteeism, Social Support and Quality of Life are significantly and positively correlated (Table 2).

Among the participants who responded to the questionnaire but did not report presenteeism the mean score for CSS was 55.4 (SD 23.2), for SSS was 48.6 (24.4), for TSS was 52.0 (SD 20.0) and for QoL was 63.7 (SD 12.8) (S1 Table).

Table 2. Bivariate correlations and descriptive statistics of main study variables.

Outcomes	Mean (SD)*	1	2	3	4	5	6	7
1. AD	35.9 (25.2)	1						
2. CW	64.1 (23.6)	0.525*	1					
3. SPS-6	50.0 (21.3)	0.882*	0.864	1				
4. CSS	47.7 (21.7)	0.375*	0.299*	0.377*	1			
5. SSS	41.8 (26.0)	0.400*	0.325*	0.416*	0.710*	1		
6. TSS	44.8 (22.1)	0.413*	0.339*	0.432*	0.910*	0.938*	1	
7. QoL	49.2 (15.4)	0.537*	0.532	0.532*	0.478*	0.461*	0.509*	-

^a Score from 0 to 100.

* Significant at the $p < 0.05$ level.

<https://doi.org/10.1371/journal.pone.0267514.t002>

Relations among presenteeism, quality of life and social support

To determine whether significant correlations continued after controlling for confounding factors stepwise multivariate linear regression analysis were conducted using social support and presenteeism domains to predict quality of life, adjusted to participants' characteristics. Also, stepwise multivariate linear regression analysis was used to test the association between social support and presenteeism.

Quality of life remained significantly associated with AD ($\beta = 0.267$; $p < 0.001$) and CSS ($\beta = 0.217$; $p = 0.001$). In turn, AD was associated with SSS ($\beta = 0.331$; $p < 0.001$) and CW with SSS ($\beta = 0.245$; $p = 0.006$) (S2 Table). As a result, path analysis was used to evaluate the relationships between social support, presenteeism and quality of life at a multivariate level.

Fig 1 shows the relationships proposed and the magnitude of effects among studied variables. The study model had good fit: $X^2(4) = 5.3$; $p = 0.262$; CFI = 0.990; TLI = 0.976; RMSEA = 0.059, PClose = 0.371. Only significant trajectories were considered. CSS was not associated with AD or CW; in turn CW was not associated with QoL. SSS had significant positive association with AD ($\beta = 0.35$; $p < 0.001$) and CW ($\beta = 0.27$; $p = 0.009$); CSS was positively

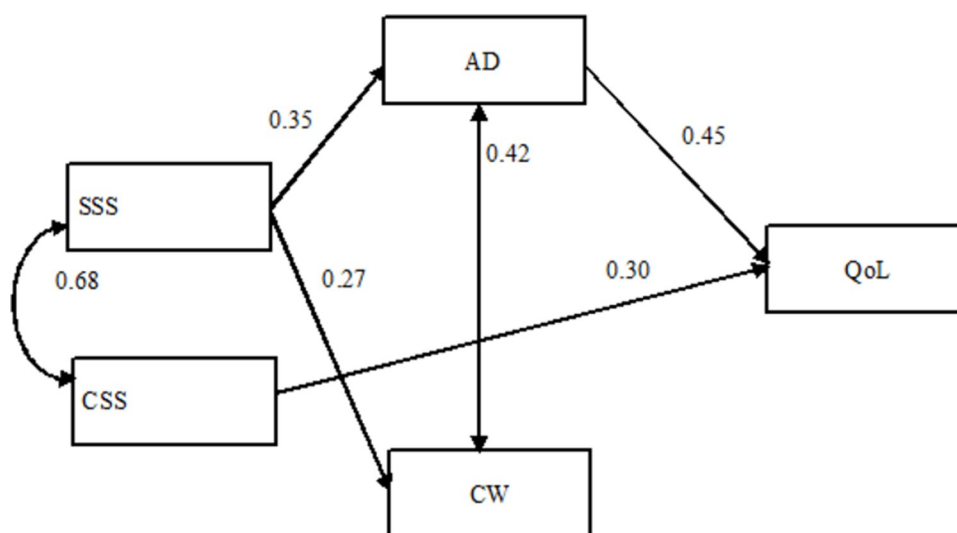


Fig 1. Path model depicting direct and indirect association between social support, presenteeism and quality of life. Values on single-headed arrows are standardized regression coefficients; values on the double-headed arrow are correlation coefficients. All paths are significant ($p < 0.05$).

<https://doi.org/10.1371/journal.pone.0267514.g001>

Table 3. Summary of the direct, indirect and total effects of significant factors on social support, frailty and quality of life among haemodialysis patients.

Endogenous variables	Exogenous variables	Direct effect (p)	Indirect effect (p)	Total effect (p)
QoL	AD	0.45 (0.002)		0.45 (0.002)
	CSS	0.30 (0.003)		0.30 (0.003)
	SSS		0.15 (0.001)	0.15 (0.001)
AD	SSS	0.35 (0.002)		0.35 (0.002)
CW	SSS	0.27 (0.028)		0.27 (0.0028)

<https://doi.org/10.1371/journal.pone.0267514.t003>

associated with QoL ($\beta = 0.30$; $p < 0.001$). Also, AD was positively associated with QoL ($\beta = 0.45$; $p < 0.001$).

Table 3 shows the estimates of standardized direct, indirect and total effects of social support, presenteeism and quality of life. The indirect pathway from SSS to QoL ($\beta = 0.15$; $p = 0.001$) mediated by AD was significant.

Discussion

The aim of this study was to investigate the relationships between presenteeism, quality of life and social support at work in non-teaching and non-researching professionals in university higher education. The results showed that presenteeism was influenced by supervisor social support but not by peer social support. In turn, quality of life was directly influenced by peer social support and indirectly by supervisor social support through presenteeism.

Although literature shows that social support from colleagues and supervisors can minimise the influence of more demanding and competitive work situations [31,32], in our study only social support from supervisors was associated with presentism, not only in work completed, that is, the amount of work done under the influence of presentism that manifests itself from physical causes [7,24], but also in the avoided distraction, related to the professional's capacity to complete the required tasks, and to remain focused despite the effects that presenteeism may have at a psychological level [7,24]. This result is corroborated by yet another study in health professionals showing that supervisor support had a positive effect on presenteeism, but that of co-workers did not [33]. There are authors who tell us that even if the social support of the colleague has a significant impact on distributive justice, the social support of the supervisor manages to have an even more relevant effectiveness in improving this justice because it is related to the allocation of rewards in an organization, considered very useful for the existence of balance effort-reward [33,34]. In this case, it can be said that high or low levels of perceived social support from colleagues do not promote presenteeism.

The literature refers us to the importance of the leader's role, his/her ability to be attentive to the professionals' needs, the respect for each worker's limitations, adapting them to activities compatible with their work capacity [35], thus, with justification for adapting work to less serious health problems [36] and it is therefore important to support the redistribution of workloads and team planning [35,37]. Alertness is needed to prevent an insidious long-term deterioration in the health of the majority of the workforce, especially given the current COVID-19 pandemic context [36]. The associations between work characteristics and mental illness are well established [38]. Therefore, positive feedback from the supervisor is important as it leads to greater predictability, minimising role conflicts [37].

In addition, the results of the present study show that the relationship between quality of life and social support at work differ according to the type of social support. The relationship between supervisor social support and quality of life was fully mediated by distraction avoidance, i.e. workers with higher levels of supervisor social support may have higher levels of

distraction avoidance, which may contribute to a better perception of quality of life. Within this framework, the evidence suggests that the supervisor's social support functions as a moderator, being assumed as relevant for stimulating autonomy in work performance, and positive self-perception of well-being at work [32,39]. Despite the existence of presenteeism, which in this case leads us to the theory of a more positive side to it—can be synonymous with motivation at work—the latter can be conceptualised as beneficial for health, and convey a sense of significance [36,40]. Positively perceived organisational support leads to favourable psychological wellbeing, which has repercussions both on improving the quality of customer service and on job satisfaction [41].

A study with geriatric nurses reports that the fact that they do not consider their disease to be serious, or not aggravated because they choose to work, leads to an increase in presenteeism, which translates into a positive perspective. These professionals show satisfaction, pride and responsibility. Taking into account the organisational factors, they point out the incentive/remuneration policies, the connection between the work teams, the satisfactory interpersonal relationships; they also mention the personal factors related to a strong family support and the need to set an example by referring to the act of working [42].

In the case of social support from colleagues, this had a direct effect on quality of life, i.e. workers who have the support of colleagues perceive a better quality of life. This can be explained by the fact that social support from colleagues gives rise to social and confiding relationships, promoting personal well-being [43]. It is difficult to achieve this type of relationship with the supervisor, because he/she represents the organisation [44]. In this framework, the relationship between social support at work and quality of life is an important point arising from our study because it shows that the consequences of social support at work extend beyond the place where it is exercised. When social support at the workplace is high, quality of life outside the work environment also increases.

With regard to presenteeism, and based on the results obtained from the SPS-6 sub-scales, the score of 64.1 in the completed work dimension and 35.9 in the avoided distraction dimension, is synonymous with a higher level of presenteeism in one dimension compared to the other. Here, the psychological aspects are underlined [7,24]. There is a greater difficulty in concentrating and a higher psychological, rather than physical impairment [7,45,46]. This presupposes an intervention of the higher education organisations in the mental health of the professionals—otherwise, this might lead to an increase in the probability of occurrence of errors due to the performance of their functions with less ability to concentrate. It is necessary to consider that presenteeism, by being associated with the person who works, while feeling ill [14,47], worsens your quality of life [14,47,48].

Based on the sample of all professionals who participated in this study, we observed that participants without presenteeism obtained higher scores of social support and quality of life. Some literature defends that regardless of presenteeism being high or low, workers present worse health-related quality of life than those without presenteeism [14].

Implementing strategies that can promote social support in the work context, namely strengthening networks between colleagues, and having competent and well-trained supervisors, may prevent or reduce presenteeism among higher education professionals, as well as, provide a better quality of life. This context brings us back to policies aimed at increasing national well-being that should take into consideration the quality of working conditions and the factors that facilitate positive personal relationships [38]. In this sense, our target population could benefit from the implementation of a project based on the "3 in Line Programme" developed by the XXI Constitutional Government of the Portuguese Republic, which aims to promote a better balance between professional, personal and family life, and true equality between women and men to enjoy a citizenship that allows free choices in the various spheres

of life. Otherwise, and as an example, there is evidence that poor health, the time spent at work, and the existence of presentism should be diagnosed and monitored by organisations in order to reduce the impact of work-family conflict. There are programmes that, for example, include flexible working hours, part-time work, and school holidays that make organisations more competitive in attracting and retaining professionals [49]. The importance of balance/conciliation is recognised as one of the fair working conditions and assumed in the “The European Pillar of Social Rights: An Assessment of its Meaning and Significance” [50] which, according to the literature, is a high-level political reaffirmation of social rights and principles. Its implementation is based on the entire governance acquis of the European Union established, for example, on regulations, funding actions and country-specific recommendations [51], that might be relevant contributions in the context presented in our study.

Limitations

This study has some limitations. If on the one hand, the data collection may have been hampered by the pandemic period, this situation might be useful as a point of comparison for a post-pandemic period; on the other hand, the target population has been frequently asked to answer questionnaires and therefore there is some difficulty in having their support. This situation justifies the sample size and limits the generalisation and accuracy of our conclusions. Consequently, future studies should assess the relations of this study by professional class and focus on a longitudinal study. This would allow for a more specific intervention. In addition, and although this public university in the north of Portugal includes institutions in different areas of education, it would be useful in the future to expand the results to other organisations.

Conclusions

The results obtained in this study provide valid information to university higher education institutions in terms of intervention to prevent or reduce presenteeism. We can conclude that social support at work is an important resource to deal with presenteeism and promote better quality of life. The supervisor’s social support can directly promote better levels of presenteeism and indirectly, quality of life, the latter being directly favoured by colleagues’ social support. Frontline supervisors should support professionals who attend work while ill, outlining clear goals and responsibilities so that professionals can focus on their priorities and remain effective despite health problems. On the other hand, taking into account the low value in the avoided distraction dimension, institutions should be more concerned with psychological aspects. This might increase awareness of the importance of implementing well-being measures. Specifically, we consider that the existence of counselling, social work and occupational medicine offices, working as a team, may plan a concerted intervention aimed not only at training supervisors, but also at preserving the health of the worker (with or without presenteeism).

Supporting information

S1 Table. Quality of life and social support among participants with and without presenteeism.

(DOCX)

S2 Table. Stepwise multivariate linear regression to predict associations between QoL, AD, CW, SSS and CSS.

(DOCX)

S1 Dataset. Study outcomes—Presenteeist participants. (PDF)

Acknowledgments

We would like to thank all the participants who voluntarily participated in this study. We must finally thank to Patrícia Foito e Camisão for proofreading the article.

Author Contributions

Conceptualization: Sónia Magalhães, Joselina Barbosa, Elisabete Borges.

Data curation: Joselina Barbosa.

Formal analysis: Joselina Barbosa.

Investigation: Sónia Magalhães, Joselina Barbosa, Elisabete Borges.

Methodology: Sónia Magalhães, Joselina Barbosa, Elisabete Borges.

Project administration: Sónia Magalhães, Elisabete Borges.

Supervision: Elisabete Borges.

Visualization: Sónia Magalhães, Joselina Barbosa, Elisabete Borges.

Writing – original draft: Sónia Magalhães, Elisabete Borges.

Writing – review & editing: Sónia Magalhães, Joselina Barbosa, Elisabete Borges.

References

1. Johns G. Presenteeism in the workplace: A review and research agenda. *Journal of organizational behavior*. 2010; 31(4):519–42.
2. Cooper Cary L., Lu L. Presenteeism as a global phenomenon: Unraveling the psychosocial mechanisms from the perspective of social cognitive theory. *Cross Cultural & Strategic Management*. 2016.
3. Lohaus D, Habermann W. Präsentismus: verständnis und Einflussfaktoren. *Praxis Klinische Verhaltensmedizin Rehabil*. 2020; 109:5–15.
4. Skagen K, Collins AM. The consequences of sickness presenteeism on health and wellbeing over time: a systematic review. *Social Science & Medicine*. 2016; 161:169–77. <https://doi.org/10.1016/j.socscimed.2016.06.005> PMID: 27310723
5. Aronsson G, Gustafsson K, Dallner M. Sick but yet at work. An empirical study of sickness presenteeism. *Journal of Epidemiology & Community Health*. 2000; 54(7):502–9.
6. Hemp P. Presenteeism: at work-but out of it. *Harvard business review*. 2004; 82(10):49–58. PMID: 15559575
7. Ferreira AI, Martinez LF, Sousa LM, Cunha Jvd. Validation into Portuguese language of presenteeism scales WLQ-8 and SPS-6. *Avaliação Psicológica*. 2010; 9(2):253–66.
8. Mosteiro-Díaz MP, Baldonado-Mosteiro M, Borges E, Baptista P, Queirós C, Sánchez-Zaballos M, et al. Presenteeism in nurses: comparative study of Spanish, Portuguese and Brazilian nurses. *International Nursing Review*. 2020; 67(4):466–75. <https://doi.org/10.1111/inr.12615> PMID: 32844446
9. Cooper Cary L., Santos dos MJH, Dinis A, Sousa L, et al. Psychosocial Determinants of Presenteeism at the Workplace in the Pre-COVID-19 Era in A Southern European Country-The Mediating Role of Mental Health and Wellbeing. *Journal of Psychiatry and Behavioral Sciences*. 2021:1–10.
10. Enns MW, Bernstein CN, Kroeker K, Graff L, Walker JR, Lix LM, et al. The association of fatigue, pain, depression and anxiety with work and activity impairment in immune mediated inflammatory diseases. *PLoS one*. 2018; 13(6):e0198975. <https://doi.org/10.1371/journal.pone.0198975> PMID: 29879231
11. Lima J, Queirós C, Borges E, Abreu M. Saúde dos enfermeiros: presentismo e stress no trabalho. *International Journal on Working Conditions*. 17. 2019:90–107.

12. Monzani L, Zurriaga R, Espí López GV. Anxiety and the severity of tension-type headache mediate the relation between headache presenteeism and workers' productivity. *PloS one*. 2018; 13(7):e0201189. <https://doi.org/10.1371/journal.pone.0201189> PMID: 30024973
13. Miraglia M, Johns G. Going to work ill: A meta-analysis of the correlates of presenteeism and a dual-path model. *Journal of occupational health psychology*. 2016; 21(3):261. <https://doi.org/10.1037/ocp0000015> PMID: 26550958
14. Tsuji T, Matsudaira K, Sato H, Vietri J, Jaffe DH. Association between presenteeism and health-related quality of life among Japanese adults with chronic lower back pain: a retrospective observational study. *BMJ open*. 2018; 8(6):e021160. <https://doi.org/10.1136/bmjopen-2017-021160> PMID: 29950467
15. Kinman G, Wray S. Presenteeism in academic employees—occupational and individual factors. *Occupational Medicine*. 2018; 68(1):46–50. <https://doi.org/10.1093/occmed/kqx191> PMID: 29351632
16. SADLER J. CIGNA COVID-19, Global Impact Study. Future Uncertainty Hangs Heavy. Cigna Published December. 2020:1–16.
17. Chen JW, Lu L, Cooper CL. The Compensatory Protective Effects of Social Support at Work in Presenteeism During the Coronavirus Disease Pandemic. *Frontiers in Psychology*. 2021; 12:689. <https://doi.org/10.3389/fpsyg.2021.643437> PMID: 33833723
18. Tahir S, Aziz S. Workaholism as predictor of work-family conflict and mental well-being of public and private sector employees. *Pakistan Journal of Commerce and Social Sciences (PJCSS)*. 2019; 13(2):419–35.
19. Giæver F, Lohmann-Lafrenz S, Løvseth LT. Why hospital physicians attend work while ill? The spiraling effect of positive and negative factors. *BMC health services research*. 2016; 16(1):1–7. <https://doi.org/10.1186/s12913-016-1802-y> PMID: 27716317
20. Brunner B, Igic I, Keller AC, Wieser S. Who gains the most from improving working conditions? Health-related absenteeism and presenteeism due to stress at work. *The European Journal of Health Economics*. 2019; 20(8):1165–80. <https://doi.org/10.1007/s10198-019-01084-9> PMID: 31309366
21. Shimabuku RH, Mendonça H. Moderating role of social support on the relationship between job demand and presenteeism. *Paidéia (Ribeirão Preto)*. 2018;28.
22. Zhou J, George JM. When job dissatisfaction leads to creativity: Encouraging the expression of voice. *Academy of Management journal*. 2001; 44(4):682–96.
23. Boas MV, Cerqueira A. Assessing stress at work: The Portuguese version of the Job Content Questionnaire. *Avaliação Psicológica: Interamerican Journal of Psychological Assessment*. 2017; 16(1):70–7.
24. Koopman C, Pelletier KR, Murray JF, Sharda CE, Berger ML, Turpin RS, et al. Stanford presenteeism scale: health status and employee productivity. *Journal of occupational and environmental medicine*. 2002; 44(1):14–20. <https://doi.org/10.1097/00043764-200201000-00004> PMID: 11802460
25. Pereira M, Melo C, Gameiro S, Canavarro MC. Estudos psicométricos da versão em Português Europeu do índice de qualidade de vida EUROHIS-QOL-8. *Laboratório de Psicologia*. 2011; 9(2):109–23.
26. Power M. Development of a common instrument for quality of life. In Nosikov A. & Gudex C. (Eds.), *EUROHIS: Developing Common Instruments for Health Surveys*. Amsterdam: IOS Press. 2003 Epub 159.
27. Schmidt S, Mühlen H, Power M. The EUROHIS-QOL 8-item index: psychometric results of a cross-cultural field study. *The European Journal of Public Health*. 2006; 16(4):420–8. <https://doi.org/10.1093/eurpub/cki155> PMID: 16141303
28. Silva C, Amaral V, Pereira A, Bem-Haja P, Pereira A, Rodrigues V, et al. Copenhagen Psychosocial Questionnaire-COPSOQ-Portugal e países africanos de língua oficial portuguesa. *Análise Exacta Universidade de Aveiro*. 2012:1–51. Available from: <https://usermanual.wiki/Document/Manual20COPSOQIIversC3A3o20portuguesa.23024659/html>.
29. Kristensen TS, Hannerz H, Høgh A, Borg V. The Copenhagen Psychosocial Questionnaire—a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian journal of work, environment & health*. 2005:438–49. <https://doi.org/10.5271/sjweh.948> PMID: 16425585
30. Li Hu, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*. 1999; 6(1):1–55.
31. Blanch A. Social support as a mediator between job control and psychological strain. *Social Science & Medicine*. 2016; 157:148–55. <https://doi.org/10.1016/j.socscimed.2016.04.007> PMID: 27086104
32. Mach M, Ferreira AI, Martinez LF, Lisowska A, Dagher GK, Perez-Nebra AR. Working conditions in hospitals revisited: A moderated-mediated model of job context and presenteeism. *PloS one*. 2018; 13(10):e0205973. <https://doi.org/10.1371/journal.pone.0205973> PMID: 30346986
33. Yang T, Lei R, Jin X, Li Y, Sun Y, Deng J. Supervisor support, coworker support and presenteeism among healthcare workers in China: the mediating role of distributive justice. *International journal of*

- environmental research and public health. 2019; 16(5):817. <https://doi.org/10.3390/ijerph16050817> PMID: 30845703
34. Saijo Y, Yoshioka E, Nakagi Y, Kawanishi Y, Hanley SJ, Yoshida T. Social support and its interrelationships with demand-control model factors on presenteeism and absenteeism in Japanese civil servants. *International archives of occupational and environmental health*. 2017; 90(6):539–53. <https://doi.org/10.1007/s00420-017-1218-y> PMID: 28357607
 35. Pousa PCP, Lucca SRd. Psychosocial factors in nursing work and occupational risks: a systematic review. *Revista Brasileira de Enfermagem*. 2021;74. <https://doi.org/10.1590/0034-7167-2020-0198> PMID: 33503207
 36. Lohaus D, Habermann W, Kertoubi IE, Röser F. Working while ill is not always bad—positive effects of Presenteeism. *Frontiers in Psychology*. 2020; 11:4059.
 37. Chanchai W, Songkham W, Ketsomporn P, Sappakitchanchai P, Siri Wong W, Robson MG. The impact of an ergonomics intervention on psychosocial factors and musculoskeletal symptoms among Thai hospital orderlies. *International journal of environmental research and public health*. 2016; 13(5):464. <https://doi.org/10.3390/ijerph13050464> PMID: 27153076
 38. Stansfeld SA, Shipley MJ, Head J, Fuhrer R, Kivimaki M. Work characteristics and personal social support as determinants of subjective well-being. *PLoS One*. 2013; 8(11):e81115. <https://doi.org/10.1371/journal.pone.0081115> PMID: 24260545
 39. Wu C-H, Luksyte A, Parker SK. Overqualification and subjective well-being at work: The moderating role of job autonomy and culture. *Social Indicators Research*. 2015; 121(3):917–37.
 40. Miraglia M, Johns G. Presenteeism and well-being at work. *Presenteeism at Work*. 2018:183–218.
 41. Pahlevan Sharif S, Ahadzadeh AS, Sharif Nia H. Mediating role of psychological well-being in the relationship between organizational support and nurses' outcomes: A cross-sectional study. *Journal of advanced nursing*. 2018; 74(4):887–99. <https://doi.org/10.1111/jan.13501> PMID: 29117444
 42. Fiorini LA, Griffiths A, Houdmont J. Reasons for presenteeism in nurses working in geriatric settings: A qualitative study. *Journal of Hospital Administration*. 2018; 7(4):9–16.
 43. Chou P. The effects of workplace social support on employee's subjective well-being. *European Journal of Business and Management*. 2015; 7(6):8–19.
 44. Yang T, Ma T, Liu P, Liu Y, Chen Q, Guo Y, et al. Perceived social support and presenteeism among healthcare workers in China: the mediating role of organizational commitment. *Environmental health and preventive medicine*. 2019; 24(1):1–9. <https://doi.org/10.1186/s12199-018-0752-x> PMID: 30611201
 45. Laranjeira CA. Validation of the Portuguese version of the Stanford Presenteeism Scale in nurses. *International Journal of Nursing Practice*. 2013; 19(6):644–50. <https://doi.org/10.1111/ijn.12117> PMID: 24330216
 46. Palha C, Borges E. Presentismo em enfermagem. *Revista ROL de Enfermería*. 2019; 42(11–12):110.
 47. Lopes SL, Ferreira AI, Passos AM, Neves M, Sousa C, Sá MJ. Depressive symptomatology, presenteeism productivity, and quality of life: a moderated mediation model. *Journal of occupational and environmental medicine*. 2018; 60(4):301–8. <https://doi.org/10.1097/JOM.0000000000001253> PMID: 29252917
 48. Toyoshima K, Inoue T, Shimura A, Uchida Y, Masuya J, Fujimura Y, et al. Mediating roles of cognitive complaints on relationships between insomnia, state anxiety, and presenteeism in Japanese adult workers. *International Journal of Environmental Research and Public Health*. 2021; 18(9):4516. <https://doi.org/10.3390/ijerph18094516> PMID: 33923141
 49. Ferreira AI, Mach M, Martinez LF, Brewster C, Dagher G, Perez-Nebra A, et al. Working sick and out of sorts: a cross-cultural approach on presenteeism climate, organizational justice and work-family conflict. *The International Journal of Human Resource Management*. 2019; 30(19):2754–76.
 50. XXI Governo Constitucional RP. 3 em Linha—Programa para a Conciliação da Vida Profissional, Pessoal e Familiar 2018–2019. Portal do Governo. 2019:1–30. Available from: <https://www.portugal.gov.pt/downloadficheiros/ficheiro.aspx?v=%3d%3dBAAAAB%2bLCAAAAAABAAZsCxBAC2t1M6BAAAA%3d%3d>.
 51. Garben S. The European pillar of social rights: An assessment of its meaning and significance. *Cambridge Yearbook of European Legal Studies*. 2019; 21:101–27.

Part III.

Discussion, Recommendations and Conclusion

1. Discussion, Recommendations

2. Conclusion

1. Discussion and Recommendations

Presenteeism is currently considered a global phenomenon [76] with consequences for productivity and financial losses for organizations, and may also affect the well-being, and quality of life of professionals [5, 7, 14].

The results of our study demonstrated that presenteeism, widely studied among health professionals, is also prevalent among non-academic professionals in public higher education (Part II, 1). This confirms the need to integrate another target audience in future research on this issue. In the case of higher education, this has been highlighted not only by its increase but also because management in this area is progressively more competitive, and praises productivity and work overload (for long periods) to the detriment of well-being, which has become part of the organizational culture [77].

These professionals play a relevant role in terms of the services provided by the higher education institution, in a context of competitive work in constant change [77, 78] and often accompanied by mental [77] and physical [65] health problems, even sometimes exhaustion (associated with presenteeism), which does not favor well-being [79].

The health problems that usually lead to presenteeism are understood to be mild or sporadic because with more serious illnesses (e.g., Cancer) people would not be able to continue to exercise their functions [2]. It is important to note that presenteeism, which is associated with lower performance, may be the result of attitude towards the disease, because even if the professional wants to produce more, they are limited. As in previous studies [2, 11, 65, 80], the most prevalent physical symptoms of presenteeism reported in our sample include headaches and back pain, and among the most prevalent psychological symptoms, they include stress and anxiety (Part II, 1).

Bearing in mind that over time these problems may lead to serious health conditions [81] and constitute high costs for organizations and even for professionals [5], it is worth questioning what motivates people to continue to work even though they feel sick? Clearly, functional limitations and health problems are the main reasons for deciding whether to go to work [19, 20, 82]. However, other reasons may influence this decision. Personal,

health-related, work-related, and motivations were the explanations identified in non-academic public higher education professionals (Part II, 1). Among these, we highlight financial difficulty. The possibility of monetary loss or even being unemployed makes professionals persist indefinitely in this situation. Other important reasons were to avoid harming the productivity of the work and organization.

It was interesting to find that presenteeism can be seen as positive if the workplace is favorable. For example, when professionals assume that work helps them to forget about problems, especially the disease. Thus, work motivation can lead to presenteeism in a positive way, as is the case of the professional being dedicated to the exercise of their work and the demands related to their performance, but without running the risk of increasing the burden on their health [19].

Another important result of our study was that most professionals who worked while sick reported a decrease in performance due to presenteeism (Part II, 1). Here, not only is the relevance of evaluating this phenomenon in the context of public higher education reinforced, but also of recognizing high and low performance groups. The need to intervene is highlighted so that conditions are created in which the high-performance group can maintain the same performance and the low group can increase and be included in the previous group. Often the prevention or reduction of presenteeism involves creating a work context in which the professional feels valued. Improving the quality of life of professionals by assuming a clear connection between the different spheres of life could be the way forward.

There is evidence that public higher education institutions are committed to being certified in terms of Professional, Personal and Family Life Balance, in line with the provisions of the *3 em Linha Programa*, created by the XXI Constitutional Government of the Portuguese Republic, and the balance between these areas of professionals' lives is highlighted by the European Pillar of Social Rights as desirable in the labor environment [83].

Consequently, growth in demographic sustainability and productivity is envisaged, as well as the minimization of absenteeism and the retention of talent in organizations. To this end, the focus must be on changing

mentalities and improving well-being, which is reflected in a commitment to work/life balance [83]. For example, professionals have access to: gymnastics in the workplace, flexibility of schedules, meetings that respect normal working hours, telework, training, sharing of leave between parents, protocols with various entities (e.g. hospitality, sports, health, culture, kindergartens) social service offices, mediation and counseling for results [83, 84].

In the context of this *Programa Conciliação*, (Work/Life Balance) a digital platform was recently created and made available to professionals at a public higher education institution, which makes available a variety of services, news, labor legislation (to minimize illiteracy), activities, events, and benefits in favor of professionals that may also be expressed through the Idea Bank in matters of Work/Life Balance [84].

It is important, however, to monitor these measures regularly and seek the opinion of professionals on work contexts and methods, clearly define objectives, recognition and incentive practices, meetings, and activities.

In the university world importance is given to measures directed at students, but these must be complemented with a focus on the well-being of its professionals, as this is a way to prevent and/or minimize psychosocial risks, thus achieving a more favorable global environment, and consequently for the Institution itself [77].

Policies aimed at promoting well-being must consider not only aspects that foster positive personal relationships, but also the quality of working conditions. In the professional context, a high level of well-being can be supported by the existence of low tension, high work control, and social support [85].

The results also showed that public higher education professionals tend to have more difficulty concentrating (distraction avoided scores) than physical damage (work completed score) (Part II, 2). This is perhaps because the work of most university professionals is mental, not physical, which presupposes a study of mental health at these institutions and a consequent intervention, developing well-being policies.

In practice, the existence of services that respond to the needs of professionals at this level, such as counseling and psychology appointments, can help to minimize anxiety and stress (the most prevalent in our study), preventing the need to work while unwell. The literature suggests that sometimes this happens in organizations due to the fear of being stigmatized for having a mental illness [7]. We also found literature that addresses the importance of paying attention to those who work when they are sick, as this is one of the risk factors that can worsen their health, especially leading to anxiety and depression [5].

Pointing out the factors related to presenteeism, particularly those associated with the work context, can have benefits not only in reducing absence, but also reducing presenteeism. In this study, a comparison was made between sociodemographic and professional factors between the high and low performance groups due to presenteeism, and the group who did not report presenteeism (Part II, 1). Interestingly, no association was demonstrated between sociodemographic and professional factors in the group of high-performing professionals who attend work while sick, and those who did not report presenteeism. This emphasizes, once again, the importance of intervening in these professionals so that they can maintain the same level of performance as other workers, even when they are sick.

In turn, presenteeism with low performance was affected by the place and type of work. Those who perform only physical work compared to professionals with physical and mental work are most likely to be part of the low performance group due to presenteeism. Thus, performing only physical work can lead to lower performance due to presenteeism [8]. In the same sense, professionals who perform hybrid work (corresponding to working in person and telecommuting), when compared to those who only telecommute, are more likely to be part of the low performance group, of non-academics, related to presenteeism.

Evidence points to the need to clarify and restructure the hybrid work format [86], especially if we bear in mind its unforeseen adoption, in the circumstances of the COVID-19 pandemic, to which professionals (our respondents) had to adapt. Some even indicated that this type of situation can generate stress [87]. The literature argues that working conditions and characteristics differ depending on the type of occupational group, so the

factors that predict presenteeism may therefore be disparate [5]. It is necessary to promote a multidisciplinary approach in the workplace [88]. One review underlines the fact that technological and other alterations in the workplace changes have led to increased mental workload [88].

From an ergonomic perspective, the changes inherent in the work context must be monitored, and the biggest challenge is to achieve a balance between performance and well-being [88]. Thus, presenteeism should be addressed using an intervention based on physical activity, sleep hygiene, minimizing stress and improving the balance between personal and professional life [89]. There must be attention to self-care, for example, professionals should have access to: gymnastics in the workplace, flexibility of schedules, meetings that respect normal office hours, telework, training, sharing of leave between parents, protocols with various entities (e.g. in the areas of hotels, sports, health, culture, nurseries), social service offices, mediation and counseling to improve results, which is already visible in some institutions [83, 90], mainly public higher education institutions that provide access to goods and services through a portal for this purpose [90].

Additionally, social support, previously described as associated with well-being at work [36, 85, 91, 92], proved to be an important resource that can be optimized for the prevention and reduction of presenteeism, in order to provide a better quality of life for professionals (Part II, 2). The social support from the supervisor, which is directly associated with presenteeism, is very effective because it is related to the rewards that professionals can obtain in the work context, which is vital for there to be a balance between effort and reward [93, 94].

Previous studies describe the relevance of the leader's capability to be vigilant regarding the professionals under them, and with respect for their limitations [95]. The supervisor can be decisive in preventing presenteeism as, together with Human Resources, they are able to identify the best solutions for each professional. Thus, the training of leaders able to influence and motivate professionals daily is one of the ways to prevent presenteeism. In turn, social support from colleagues was associated with the professionals' quality of life but not with presenteeism. Support from colleagues generates social relationships of trust, leveraging personal well-

being [36]. This type of relationship with the supervisor is unlikely to be achieved given that they represent the employer [37].

As a global measure, we believe that promoting social support at work, namely from supervisors and colleagues, combined with the existence of social service offices, conflict mediation, counseling to obtain results (in the work context), and occupational health services, could be the basis of an intervention aimed at preserving of the professional's health, whether or not the professional works while sick.

2. Conclusion

The practice of presenteeism brings consequences that affect both the professional and the institution. The results obtained provide valid information for public higher education institutions to prevent or mitigate presenteeism.

A high frequency of non-academic professionals who reported working despite health problems was observed. In addition, the majority reported low performance due to their ill health. Personal, work and health-related motivations were alleged for continuing to work despite being sick. However, financial conditions highlighted by the difficulty in being able to support a decrease in salary, were the most prevalent reason.

Improving the professionals' quality of life by accepting the clear connection between personal, family and professional life, the necessary balance between these dimensions, and fighting for the creation of a work context in which the professional feels valued, can prevent or even reduce presenteeism.

The results also showed that the loss of productivity due to presenteeism is generally greater in the distraction avoided than in the work completed, and this can be explained by the type of functions that most professionals perform. This also demonstrates the relevance of implementing policies focused on well-being in public higher education institutions.

Additionally, if the work is physical or hybrid, the perception of lower performance because of presenteeism may be increased. It is therefore essential that public higher education institutions reconsider working

conditions so that there is a greater and more effective equilibrium between the demands corresponding to professional performance and limits in terms of health.

Thus, without ignoring the multidisciplinary work between Occupational Health, Psychology and Social Work, the role of the supervisor is essential in identifying the best and most appropriate solution for each case. It follows that the relationship with the supervisor is one of the most important, considering the influence it has on the professional's behavior. Social support at work, provided by both the supervisor and colleagues, proved to be an essential resource for preventing and reducing presenteeism, as well to improve the quality of life of professionals.

Part IV.
REFERENCES

References

1. Johns G. Presenteeism in the workplace: A review and research agenda. *Journal of organizational behavior*. 2010;31(4):519-42.
2. Hemp P. Presenteeism: at work-but out of it. *Harvard business review*. 2004;82(10):49-58.
3. Karanika-Murray M, Pontes HM, Griffiths MD, Biron C. Sickness presenteeism determines job satisfaction via affective-motivational states. *Social Science & Medicine*. 2015;139:100-6.
4. Shamansky SL. Presenteeism... or when being there is not being there. *Public Health Nursing (Boston, Mass)*. 2002;19(2):79-80.
5. Miraglia M, Kinman G. The hidden costs of working when sick. *The Psychologist*. 2017;30(8):36-40.
6. Lohaus D, Habermann W. Presenteeism: A review and research directions. *Human Resource Management Review*. 2019;29(1):43-58.
7. Miraglia M, Johns G. Going to work ill: A meta-analysis of the correlates of presenteeism and a dual-path model. *Journal of occupational health psychology*. 2016;21(3):261.
8. Lima J, Queirós C, Borges E, Abreu M. Saúde dos enfermeiros: presentismo e stress no trabalho. *International Journal on Working Conditions* 17. 2019:90-107.
9. Enns MW, Bernstein CN, Kroeker K, Graff L, Walker JR, Lix LM, et al. The association of fatigue, pain, depression and anxiety with work and activity impairment in immune mediated inflammatory diseases. *PLoS one*. 2018;13(6):e0198975.
10. Kivimäki M, Head J, Ferrie JE, Hemingway H, Shipley MJ, Vahtera J, et al. Working while ill as a risk factor for serious coronary events: the Whitehall II study. *American journal of public health*. 2005;95(1):98-102.
11. Kigozi J, Jowett S, Lewis M, Barton P, Coast J. The estimation and inclusion of presenteeism costs in applied economic evaluation: a systematic review. *Value in Health*. 2017;20(3):496-506.
12. Monzani L, Zurriaga R, Espí López GV. Anxiety and the severity of tension-type headache mediate the relation between headache presenteeism and workers' productivity. *PloS one*. 2018;13(7):e0201189.
13. Guay S, Lemyre A, Geoffrion S. Work-related predictors of mental health, presenteeism, and professional quality of life following exposure to a

potentially traumatic event in child protection workers. *European journal of psychotraumatology*. 2022;13(1):2037904.

14. Tsuji T, Matsudaira K, Sato H, Vietri J, Jaffe DH. Association between presenteeism and health-related quality of life among Japanese adults with chronic lower back pain: a retrospective observational study. *BMJ open*. 2018;8(6):e021160.

15. Heponiemi T, Kouvonen A, Sinervo T, Elovainio M. Is the public healthcare sector a more strenuous working environment than the private sector for a physician? *Scandinavian journal of public health*. 2013;41(1):11-7.

16. Lui JNM, Andres EB, Johnston JM. Presenteeism exposures and outcomes amongst hospital doctors and nurses: a systematic review. *BMC health services research*. 2018;18(1):1-15.

17. Kinman G, Grant C. Presenteeism during the COVID-19 pandemic: risks and solutions. Oxford University Press UK; 2021. p. 243-4.

18. Mekonnen TH, Tefera MA, Melsew YA. Sick at work: prevalence and determinants among healthcare workers, western Ethiopia: an institution based cross-sectional study. *Annals of occupational and environmental medicine*. 2018;30(1):1-10.

19. Karanika-Murray M, Biron C. The health-performance framework of presenteeism: Towards understanding an adaptive behaviour. *Human Relations*. 2020;73(2):242-61.

20. Lohaus D, Habermann W, Kertoubi IE, Röser F. Working while ill is not always bad-positive effects of Presenteeism. *Frontiers in Psychology*. 2020;11:4059.

21. Oliveira de JM, Gonçalves LdSB, da Fonseca ALS, dos Santos LF, Bresser M, Chehuen-Neto JA, et al. Physicians' quality of life, illness and presenteeism: a cross-sectional epidemiological study. *Rev Bras Med Trab* 2022;20(3):401-411

22. Johansen V, Aronsson G, Marklund S. Positive and negative reasons for sickness presenteeism in Norway and Sweden: a cross-sectional survey. *BMJ open*. 2014;4(2):e004123.

23. Giannini M, Scabia A. Workaholism: an addiction or a quality to be appreciated. *J Addict Res Ther*. 2014;5(3):1-9.

24. Azevedo WFd, Mathias LAdST. Work addiction and quality of life: a study with physicians. *Einstein (São Paulo)*. 2017;15:130-5.

25. Gillet N, Austin S, Fernet C, Sandrin E, Lorho F, Brault S, et al. Workaholism, presenteeism, work-family conflicts and personal and work outcomes: Testing a moderated mediation model. *Journal of Clinical Nursing*. 2021;30(19-20):2842-53.
26. Johns G. Attendance dynamics at work: the antecedents and correlates of presenteeism, absenteeism, and productivity loss. *Journal of Occupational Health Psychology*. 2011;16(4):483.
27. Baker MG, Peckham TK, Seixas NS. Estimating the burden of United States workers exposed to infection or disease: a key factor in containing risk of COVID-19 infection. *PloS one*. 2020;15(4):e0232452.
28. Webster RK, Liu R, Karimullina K, Hall I, Amlot R, Rubin GJ. A systematic review of infectious illness presenteeism: prevalence, reasons and risk factors. *BMC public health*. 2019;19(1):1-13.
29. Kisely S, Warren N, McMahon L, Dalais C, Henry I, Siskind D. Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis. *bmj*. 2020;369.
30. Kinman G. Sickness presenteeism at work: prevalence, costs and management. 2019.
31. Dunst CJ, Trivette CM. Assessment of social support in early intervention programs. 1990.
32. Ribeiro JLP. Escala de satisfação com o suporte social (ESSS). 1999.
33. Sarason IG, Levine HM, Basham RB, Sarason BR. Assessing social support: the social support questionnaire. *Journal of personality and social psychology*. 1983;44(1):127.
34. Thoits PA. Mechanisms linking social ties and support to physical and mental health. *Journal of health and social behavior*. 2011;52(2):145-61.
35. Schwarzer R, Leppin A. Social support and health: A theoretical and empirical overview. *Journal of social and personal relationships*. 1991;8(1):99-127.
36. Chou P. The effects of workplace social support on employee's subjective well-being. *European Journal of Business and Management*. 2015;7(6):8-19.
37. Yang T, Ma T, Liu P, Liu Y, Chen Q, Guo Y, et al. Perceived social support and presenteeism among healthcare workers in China: the mediating role

of organizational commitment. *Environmental health and preventive medicine*. 2019;24(1):1-9.

38. Schoofs L, Hornung S, Glaser J. Prospective effects of social support on self-actualization at work–The mediating role of basic psychological need fulfillment. *Acta psychologica*. 2022;228:103649.

39. Blanch A. Social support as a mediator between job control and psychological strain. *Social Science & Medicine*. 2016;157:148-55.

40. Bowling NA, Alarcon GM, Bragg CB, Hartman MJ. A meta-analytic examination of the potential correlates and consequences of workload. *Work & stress*. 2015;29(2):95-113.

41. Uchino BN, Bowen K, Carlisle M, Birmingham W. Psychological pathways linking social support to health outcomes: A visit with the “ghosts” of research past, present, and future. *Social science & medicine*. 2012;74(7):949-57.

42. Komp R, Kauffeld S, Ianiro-Dahm P. The Concept of Health-Promoting Collaboration—A Starting Point to Reduce Presenteeism? *Frontiers in Psychology*. 2022;12:782597.

43. Yang T, Shen Y-M, Zhu M, Liu Y, Deng J, Chen Q, et al. Effects of co-worker and supervisor support on job stress and presenteeism in an aging workforce: a structural equation modelling approach. *International journal of environmental research and public health*. 2016;13(1):72.

44. Shimabuku RH, Mendonça H. Moderating Role of Social Support on the Relationship Between Job Demand and Presenteeism1. *Paidéia (Ribeirão Preto)*. 2018;28.

45. Xi X, Lu Q, Lu M, Xu A, Hu H, Ung COL. Evaluation of the association between presenteeism and perceived availability of social support among hospital doctors in Zhejiang, China. *BMC health services research*. 2020;20:1-11.

46. Silva C, Amaral V, Pereira A, Bem-Haja P, Pereira A, Rodrigues V, et al. Copenhagen Psychosocial Questionnaire-COPSOQ-Portugal e países africanos de língua oficial portuguesa. *Análise Exacta Universidade de Aveiro*. 2012:1-51.

47. Kristensen TS, Hannerz H, Høgh A, Borg V. The Copenhagen Psychosocial Questionnaire-a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian journal of work, environment & health*. 2005:438-49.

48. Asante JO, Li MJ, Liao J, Huang YX, Hao YT. The relationship between psychosocial risk factors, burnout and quality of life among primary healthcare workers in rural Guangdong province: a cross-sectional study. *BMC health services research*. 2019;19(1):1-10.
49. Nakata K, Tsuji T, Vietri J, Jaffe DH. Work impairment, osteoarthritis, and health-related quality of life among employees in Japan. *Health and Quality of Life Outcomes*. 2018;16(1):1-11.
50. Toyoshima K, Inoue T, Shimura A, Uchida Y, Masuya J, Fujimura Y, et al. Mediating roles of cognitive complaints on relationships between insomnia, state anxiety, and presenteeism in Japanese adult workers. *International journal of environmental research and public health*. 2021;18(9):4516.
51. Andrade KO, Andrade PO, Leite LF. Qualidade de vida dos trabalhadores da área de saúde: revisão de literatura. *Revista Científica do ITPAC*. 2015;8(1):1-5.
52. Group W. Study protocol for the World Health Organization project to develop a Quality of Life assessment instrument (WHOQOL). *Quality of life Research*. 1993;2:153-9.
53. Merchant JA, Kelly KM, Burmeister LF, Lozier MJ, Amendola A, Lind DP, et al. Employment Status Matters: A Statewide Survey of Quality-of-Life, Prevention Behaviors, and Absenteeism and Presenteeism. *Journal of occupational and environmental medicine*. 2014;56(7):686-98.
54. Pereira M, Melo C, Gameiro S, Canavarro MC. Estudos psicométricos da versão em Português Europeu do índice de qualidade de vida EUROHIS-QOL-8. *Laboratório de Psicologia*. 2011;9(2):109-23.
55. Power M. Development of a common instrument for quality of life. In A. Nosikov & C. Gudex (Eds.), *EUROHIS: Developing Common Instruments for Health Surveys*. Amsterdam: IOS Press. 2003 145-59.
56. Schmidt S, Mühlhan H, Power M. The EUROHIS-QOL 8-item index: psychometric results of a cross-cultural field study. *The European Journal of Public Health*. 2006;16(4):420-8.
57. Samarasinghe JN. Determinants of Presenteeism: A Study on Non-Academics in State Higher Educational Institutions in Sri Lanka. 2021.
58. Shimabuku RH, Mendonça H. Moderating role of social support on the relationship between job demand and presenteeism. *Paidéia (Ribeirão Preto)*. 2018;28.

59. Nielsen MB, Einarsen SV. What we know, what we do not know, and what we should and could have known about workplace bullying: An overview of the literature and agenda for future research. *Aggression and violent behavior*. 2018;42:71-83.
60. Björklund C, Vaez M, Jensen I. Early work-environmental indicators of bullying in an academic setting: A longitudinal study of staff in a medical university. *Studies in Higher Education*. 2021;46(12):2556-67.
61. Van Der Feltz-Cornelis CM, Varley D, Allgar VL, De Beurs E. Workplace stress, presenteeism, absenteeism, and resilience amongst university staff and students in the COVID-19 lockdown. *Frontiers in psychiatry*. 2020;11:588803.
62. Steidelmüller C, Meyer S-C, Müller G. Home-based telework and presenteeism across Europe. *Journal of Occupational and Environmental Medicine*. 2020;62(12):998.
63. Raišienė AG, Rapuano V, Varkulevičiūtė K, Stachová K. Working from home—Who is happy? A survey of Lithuania's employees during the COVID-19 quarantine period. *Sustainability*. 2020;12(13):5332.
64. Walker TJ, Tullar JM, Diamond PM, Kohl III HW, Amick III BC. The longitudinal relation between self-reported physical activity and presenteeism. *Preventive medicine*. 2017;102:120-6.
65. Hanna F, Daas RN, El-Shareif TJ, Al-Marridi HH, Al-Rojoub ZM, Adegboye OA. The relationship between sedentary behavior, back pain, and psychosocial correlates among university employees. *Frontiers in public health*. 2019;7:80.
66. Mattke S, Balakrishnan A, Bergamo G, Newberry SJ. A review of methods to measure health-related productivity loss. *American Journal of Managed Care*. 2007;13(4):211.
67. Ospina MB, Dennett L, Waye A, Jacobs P, Thompson AH. A systematic review of measurement properties of instruments assessing presenteeism. *Am J Manag Care*. 2015;21(2):e171-85.
68. Shikiar R, Halpern MT, Rentz AM, Khan ZM. Development of the Health and Work Questionnaire (HWQ): an instrument for assessing workplace productivity in relation to worker health. *Work*. 2004;22(3):219-29.
69. Endicott J, Nee J. Endicott Work Productivity Scale (EWPS): a new measure to assess treatment effects. *Psychopharmacology bulletin*. 1997;33(1):13.

70. Koopman C, Pelletier KR, Murray JF, Sharda CE, Berger ML, Turpin RS, et al. Stanford presenteeism scale: health status and employee productivity. *Journal of occupational and environmental medicine*. 2002;44(1):14-20.
71. Ferreira AI, Martinez LF, Sousa LM, Cunha JVd. Validation into Portuguese language of presenteeism scales WLQ-8 and SPS-6. *Avaliação Psicológica*. 2010;9(2):253-66.
72. Paschoalin HC, Griep RH, Lisboa MTL, Mello DCBd. Adaptação transcultural e validação para o português brasileiro do Stanford Presenteeism Scale para avaliação do presenteísmo. *Revista Latino-Americana de Enfermagem*. 2013;21:388-95.
73. Cicolini G, Della Pelle C, Cerratti F, Franza M, Flacco ME. Validation of the Italian version of the Stanford Presenteeism Scale in nurses. *Journal of nursing management*. 2016;24(5):598-604.
74. Hubens K, Krol M, Coast J, Drummond MF, Brouwer WB, Uyl-de Groot CA, et al. Measurement instruments of productivity loss of paid and unpaid work: a systematic review and assessment of suitability for health economic evaluations from a societal perspective. *Value in Health*. 2021;24(11):1686-99.
75. Martinez LF, Ferreira AI, Sousa LM, Cunha JVd. A esperança é a última a morrer?: Capital psicológico positivo e presentismo¹. *Comportamento organizacional e gestão*. 2007;13(1):37-54.
76. Cooper CL, Lu L. Presenteeism as a global phenomenon: unraveling the psychosocial mechanisms from the perspective of social cognitive theory. *Cross Cultural & Strategic Management*. 2016;23(2). doi: 10.1108/CCSM-09-2015-0106.
77. Brewster L, Jones E, Priestley M, Wilbraham SJ, Spanner L, Hughes G. 'Look after the staff and they would look after the students' cultures of wellbeing and mental health in the university setting. *Journal of Further and Higher Education*. 2022;46(4):548-60.
78. Nawi NC, Ismail M, Ibrahim MAH, Raston NA, Zamzamin ZZ, Jaini A. Job satisfaction among academic and non-academic staff in public universities in Malaysia: A review. *International Journal of Business and Management*. 2016;11(9):148-53.
79. Aboagye E, Björklund C, Gustafsson K, Hagberg J, Aronsson G, Marklund S, et al. Exhaustion and impaired work performance in the workplace:

- associations with presenteeism and absenteeism. *Journal of occupational and environmental medicine*. 2019;61(11):e438-e44.
80. European Agency for Safety and Health at Work. Psychosocial risks and stress at work. Available online: <https://osha.europa.eu/en/themes/psychosocial-risks-and-stress> (accessed on 18 June 2022).
81. Skagen K, Collins AM. The consequences of sickness presenteeism on health and wellbeing over time: a systematic review. *Social Science & Medicine*. 2016;161:169-77.
82. Keramat SA, Alam K, Gow J, Biddle SJ. A longitudinal exploration of the relationship between obesity, and long term health condition with presenteeism in Australian workplaces, 2006-2018. *PLoS One*. 2020;15(8):e0238260.
83. República Portuguesa. XXI Governo Constitucional. 3 em Linha, programa para a conciliação da vida profissional, pessoal e familiar. 2018-2019:1-29.
84. Universidade do Porto. Conciliação4UPorto: o projeto que vai trazer qualidade de vida a quem trabalha na Universidade. Notícias Universidade do Porto. 2022. Available online: <https://noticias.up.pt/conciliacao4uporto-o-projeto-que-vai-trazer-qualidade-de-vida-a-quem-trabalha-na-universidade/> (accessed on 4 december 2022).
85. Stansfeld SA, Shipley MJ, Head J, Fuhrer R, Kivimaki M. Work characteristics and personal social support as determinants of subjective well-being. *PLoS One*. 2013;8(11):e81115.
86. Babapour Chafi M, Hultberg A, Bozic Yams N. Post-Pandemic Office Work: Perceived Challenges and Opportunities for a Sustainable Work Environment. *Sustainability*. 2022;14(1):294.
87. Watermeyer R, Crick T, Knight C, Goodall J. COVID-19 and digital disruption in UK universities: Afflictions and affordances of emergency online migration. *Higher Education*. 2021;81(3):623-41.
88. Bentley T, Green N, Tappin D, Haslam R. State of science: the future of work–ergonomics and human factors contributions to the field. *Ergonomics*. 2021;64(4):427-39.
89. Winona Pit S, Hansen V. The relationship between lifestyle, occupational health, and work-related factors with presenteeism amongst general practitioners. *Archives of environmental & occupational health*. 2016;71(1):49-56.

90. Universidade do Porto. Portal Conciliação da Universidade do Porto. 2022. Available online: <https://conciliacao.up.pt/en/> (accessed on 4 december 2022).
91. Silva Gottardo LF da, Ferreira MC. Suporte social, avaliações autorreferentes e bem-estar de profissionais de saúde. *Arquivos brasileiros de Psicologia*. 2015;67(1):146-60.
92. Thoits PA. Conceptual, methodological, and theoretical problems in studying social support as a buffer against life stress. *Journal of Health and Social behavior*. 1982:145-59.
93. Saijo Y, Yoshioka E, Nakagi Y, Kawanishi Y, Hanley SJ, Yoshida T. Social support and its interrelationships with demand-control model factors on presenteeism and absenteeism in Japanese civil servants. *International archives of occupational and environmental health*. 2017;90(6):539-53.
94. Yang T, Lei R, Jin X, Li Y, Sun Y, Deng J. Supervisor support, coworker support and presenteeism among healthcare workers in China: the mediating role of distributive justice. *International journal of environmental research and public health*. 2019;16(5):817.
95. Pousa PCP, Lucca SRd. Psychosocial factors in nursing work and occupational risks: a systematic review. *Revista Brasileira de Enfermagem*. 2021:1-74.

Parte V.

APPENDIX - Published Abstract

Relationship between Presenteeism and Quality of Life: the role of Social Support

P-98. Occupational and Environmental Medicine. 2021; London Vol. 78, Iss.

Suppl 1, A73-A73. DOI:10.1136/OEM-2021-EPI.197

Sónia Magalhães, Joselina Barbosa, Elisabete Borges

needed to safeguard the health of Syrian refugee child workers.

P-93

HOW CAN WE GET COMPARABLE EXPOSURE DATA ACROSS COUNTRIES? A WORKERS' SURVEY ON EXPOSURE TO CANCER RISK FACTORS IN EUROPE – AN INNOVATIVE APPROACH

¹Nadia Vilahur, Marine Cavet. ¹EU-OSHA, Spain

10.1136/OEM-2021-EPI.196

Introduction With cancer accounting for an estimated 53% of all work-related deaths in the European Union, data on exposure to known cancer risk factors at work are essential to improve the safety and health of workers, support the evaluation of existing policies and foster a productive and sustainable economy.

Objective Recognising the lack of harmonised figures at European level, and having carried out a feasibility study, the European Agency for Safety and Health at Work (EU-OSHA) has started a workers' survey on exposure to cancer risk factors following the Australian Workplace Exposure Studies (AWES) model. The objective of this initiative, which plans to publish first findings in 2023, is to identify the most prevalent cancer risk factors across occupations and sectors in Europe.

Methods EU-OSHA will initially carry out the survey in six European countries, interviewing a representative sample of workers about their current job. Based on the respondent information on specific tasks performed at work, exposure data to one or more cancer risk factors will be derived for each worker, using the occupational exposure assessment tool for epidemiological studies (OccIDEAS), an algorithm using epidemiological data, workplace measurements and expert assessment, which EU-OSHA is adapting to the European context.

Results The survey looks into the number and characteristics of the workers exposed to a range of cancer risk factors, including asbestos, benzene, chromium, diesel exhaust, nickel, silica dust, UV radiation, wood dust, among others. Information on workers' multiple exposures and the use of control and protective measures at work will be available. Results can be analysed by activity sector, occupation, country, gender, etc.

Conclusion To provide an overview of the methodology and adaptations of the Australian model to Europe, and to discuss the limitations of the survey and the challenges in adapting it to national contexts.

P-98

RELATIONSHIP BETWEEN PRESENTEEISM AND QUALITY OF LIFE: THE ROLE OF SOCIAL SUPPORT

¹Sónia Isabel Costa Magalhães, Joselina Maria Pinto Barbosa, Elisabete Maria Neves Borges. ¹ICBAS, Portugal

10.1136/OEM-2021-EPI.197

Presenteeism is defined as the practice of being present at work, but unable to fully perform tasks due to physical and/or mental health problems. Research on presenteeism highlights its consequences for people's health and quality of life, as well as the loss of productivity of organizations. Social support at work by supervisors and colleagues, can contribute to

the minimisation of the wear and health risks of these professionals.

Thus, the purpose of this research is to i) explore the prevalence of presenteeism in higher education professionals, ii) identify the main health problems behind it, and iii) identify personal, professional and social support factors associated with the phenomenon. Additionally, it is intended to evaluate the role of social support at work in relation to presenteeism and quality of life.

The target population will be made up of higher education technicians and it will be developed at the University of Porto, a Portuguese public university located in Porto. The study will be conducted in the form of a survey, with data being gathered via email. We will apply the validated versions for the Portuguese population, the Presenteeism Scale (SPS-6), the subscales, 'social support from supervisors' and 'social support from colleagues' of the Copenhagen Psychosocial Questionnaire, COPSOQ (to measure social support at work) and the Quality of Life Index (EUROSHIS-QOL-8). A sociodemographic questionnaire (with personal and work-related variables) will also be collected.

We expect with this study to contribute to the identification of reduced activity professional patterns associated with presenteeism and that affect professionals quality of life, as well as alerting institutions to the relevance of promoting social support at work.

P-99

RESPIRATORY, AUDITORY AND VISUAL IMPAIRMENT AMONG SPONGE IRON PLANT WORKERS IN GOA, INDIA: A COMPARISON STUDY

¹Vishwaraj Mhalshekar, Jagdish Cacodcar, Annet Oliveira, Sweta Mhalshekar. ¹Goa Shipyard Limited, India

10.1136/OEM-2021-EPI.198

Sponge iron plant workers are exposed to excessive dust at raw material handling section, fumes emitted during the burning process, and to the noise generated throughout till the formation of final product poured in moulds to form sponge iron.

Objective The study was done to compare the respiratory, auditory and visual impairment among the workers exposed to the dust, fumes and noise with those less likely to be exposed to these hazards in the same work place.

Methods The present study was carried out among all the 578 workers in a sponge iron plant in Goa. The spirometry, audiometry and the near and far vision findings were obtained from the routine annual medical examination records for the year 2019. Data was analyzed to compare the morbidity among the exposed group (n=359) i.e., the workers directly exposed to dust, fumes and noise with those less likely to be exposed (n=219) i.e., the executives and the office staff working in closed air-conditioned offices segregated from the site of hazards.

Results Respiratory impairment among those exposed to dust and fumes was 1.6 times higher than the unexposed. The hearing impairment among those exposed to noise was 1.8 times higher than the unexposed. The impairment in near vision in the exposed was 1.3 times higher than the non-exposed whereas the impairment in far vision was 1.3 times higher among the non-exposed as compared to the exposed.