



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

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Abstract

Introduction: The impact of organizational stressors on presenteeism at individual and organizational levels, mediated by workers Psychological Wellbeing (PWB) acting as a buffering effect, in the pre-COVID-19 era, is reported. We hypothesize that individual wellbeing is the pathway through which organizational stress affects presenteeism.

Methods: A study was conducted between November 2012 and June 2013 and data correspond to a non-randomised sample of 405 employees at a private financial institution in Lisbon area. The Portuguese version of ASSET (A Shortened Stress Evaluation Tool), a self-report instrument validated for the Portuguese population, measuring individual's perceptions regarding stress, and Psychological Wellbeing (PWB) at work, was applied. ASSET's Work Relationships (WR), Aspects of the Job (YJ), Overload (OL), Control (CL), Job Security (JS), Resources and Communication (RC) and Work-Life Balance (WLB) dimensions were used, and PWB of ASSET health scale was used as mediator. Presenteeism was obtained with an item measure from the World Health Organization's Health and Work Performance Questionnaire. Mediation analysis was tested using Structural Equation Modelling with AMOS software.

Received: Mar 09, 2021

Accepted: Apr 07, 2021

Published Online: Apr 13, 2021

Journal: Journal of Psychiatry and Behavioral Sciences

Publisher: MedDocs Publishers LLC

Online edition: <http://meddocsonline.org/>

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Keywords: Organizational stressors; Presenteeism; Psychological wellbeing; ASSET; Structural equation modelling; Pre-COVID-19 era.

Cite this article: Heitor MJ, Dinis A, Sousa L, Moreira S, Carreiras J, 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. *J Psychiatry Behav Sci.* 2021; 4(1): 1056.



Results: The results suggest that RC have a positive impact on absolute presenteeism strongly mediated by PWB. In addition, the effect of WLB and YJ, respectively a positive and negative effect on presenteeism, partially occurs through PWB. Finally, JS has a significant negative effect on presenteeism that is not mediated by PWB. Other dimensions such as CL, WR and OL did not reveal as significant predictors.

Conclusions: Implications are discussed on mental health promotion and mental disorder prevention at the workplace within public mental health. The role of PWB on presenteeism and productivity and the need of further studies in the pandemic and post-COVID-19 era are highlighted.

Introduction

The traditional standardized organization of work, based on a predictability and security logic, became part of the past and the de-standardization of labour (translated in the emergence of flexible forms of work) has been producing a wide range of job demands and psychosocial risks. Specifically, regarding to mental health and wellbeing there are contributory factors so-called determinants, which work in interconnection with an individual's mental health state [1]. In this way, determinants which work against individual's mental health state may be considered as risk factors. The interplay of risk and protective factors generate an increased vulnerability in the individuals to move from a mental problem to ultimately, a disorder [2].

According to World Health Organization reports [3,1], psychosocial environment is an important context of socialization and personal development. Risk factors related to that environment may be analysed taking into account several social conditions that determine a higher risk exposure levels, namely, low social class, social disadvantage, loneliness, bereavement, family conflict or family disorganization, and stressful life events, to name a few.

Among various settings, the idea that environmental work conditions significantly influence people's wellbeing is already established in the literature. On this regard, different branches of science have studied and described specific labour related variables that play a relevant role [4,5,6].

In fact, a large amount of individuals' life time is spent at the workplace and due to the contemporary work organization, labour environmental conditions tend to be experienced by employees as stressful and psychologically demanding [7]. A continuous exposure to stressful factors at the workplace has serious implications on both physical and mental health. For this reason, work-related stress is determined by different hazards to which employees are exposed in their work activity and their work environment. In this sense it is important to mention some aspects which incorporate the notion of job demands, seen as burdens or strains, and may constitute a hazard to employees' health related to job design, team and group relationships, organizational factors and work-family conflict. The psychosocial hazards at the workplace may be defined as "those aspects of work design and the organization and management of work, and their social and environmental contexts, which have the potential for causing psychological, social or physical harm" [8].

An approach to this phenomenon is related to aspects within the work content such as low value of work, low use of skills,

lack of task variety and repetitiveness in work, uncertainty, lack of opportunity to learn, high attentional demands, conflicting demands and insufficient resources, which are experienced as stressful and carry the potential for harm [9].

Finally, although there are various established models of stress at the workplace, the Job Demand Control (JDC) is one of the most significant models, it has more than 30 years and it has provided very important insights and positive results [10,11,12]. Grounded in a psychosocial perspective of work, the JDC drives the attention to the health consequences of an adverse psychosocial environment at work, particularly produced by the following dimensions: The psychological demands of work (workload and time pressure, or role conflicts) faced by employees and the degree of control available to perform their work activities (also referred in the model as decision latitude) [13]. The job demands which are focused in this model correspond to the existing psychosocial risks at work. Employees are exposed to some hazards entailed in their work activity and their work environment, which incorporate the notion of job demands and may constitute a hazard to employees' health. On the other hand, high levels of commitment and job satisfaction may moderate the effects of these hazards [14].

In this study we are interested in the particular set of risk conditions that operate in work environment, influencing stress levels and impacting on mental health in the pre-COVID-19 era.

Presenteeism, organizational stressors, health and productivity

A situation in which an employee attends work but is unable to work at his full capacity as a result of an illness is referred as presenteeism [15]. It has been described either as an outcome and a behavioural consequence of organizational stressors or as an antecedent and detrimental factor on physical and mental health.

If an individual continues to work while sick this may lead to an accumulation of workload due to reduced efficiency, which favours the development of burnout [16,17] and diminishing satisfaction [18]. Therefore, working whilst ill becomes seriously demanding, and also does not allow a complete recovery of resources to overcome the illness, thus perpetuating the presenteeism. Sickness presenteeism affects negatively job satisfaction and individual wellbeing [19]. Evidence has demonstrated that peer social support may act as a protective factor that contributes to reduce the impacts of presenteeism [20]. Similarly, supervisory support can have a buffering effect on preventing exhaustion [17]. On the other hand, detrimental effects of presenteeism on health if employees go to work in spite of physical or psychological problems, resulting from the accumulating tiredness and fatigue and the lack of recovery opportunities, have been described [17]. Mood disorders, such as depression, bipolar disorder, mania, or dysthymia, as well as chronic physical conditions (arthritis, back pain, diabetes, heart disease, and hypertension) have an impact on presenteeism. Interventions towards these conditions may reduce presenteeism, in order to optimize the labour market, improve wellbeing and reduce loss productivity.

Finally, stress research should include both absenteeism and presenteeism as outcome indicators [21]. Still, presenteeism association with mental health problems is 1.8 times more prevalent than absenteeism. Also, some studies report that 22.3% of the workers have mental health problems (15.4% if excluding

alcohol dependence and drugs) and 1 in 5 workers suffer from depression, anxiety or other mental health problem [22]. Comorbid psychological distress contributes to an increased risk of productivity loss whilst associated with physical health conditions.

Proposed model

The model we have based our research was embedded in already well established models of stress [22]. Considering a triangle composed by organizational stressors as determinants, mental health and presenteeism, in this study workers psychological wellbeing, which is an indicator of positive mental health, acts as a mediator variable of the effect of organizational stressors on presenteeism. Here, presenteeism is described itself as an outcome of organizational stressors. What this model implies is that presenteeism is an expression, a consequence of poor mental health, and in its turn poor mental health is a consequence of working conditions. In other words, we propose that the effect of those environmental conditions on a behavioral measure such as presenteeism occurs via mental wellbeing. These various aspects of our 'Research problem' are addressed and bring a specific theoretical and practical contribution in the field of occupational wellbeing.

Materials and methods

An observational cross-sectional study was conducted between November 2012 and June 2013 in a private financial organization in Lisbon metropolitan area. The inclusion criteria in the study were males and females, aged between 18 and 69, being able to understand Portuguese and that have signed the informed consent. Data protection was granted using an ID linked to a name and an email address as an identification. To guarantee confidentiality, only ID was used for data analysis.

This study was approved by two institutional ethical committees: Ethics Committee for Health of the National Institute of Health Doutor Ricardo Jorge, Public Institute (INSA, IP) and Ethics Committee for Health of the Lisbon / North Hospital Center of Faculty of Medicine of the University of Lisbon (CHLN/FMUL). It was also approved by the National Commission of Data Protection (CNPD). An informed consent was signed by all the participants. This research was conducted under the Helsinki declaration code of ethics.

Participants and procedure

An overall population of 1385 employees assembled by the organization were invited to participate, resulting 405 complete responses recorded (response rate of approximately 29%). The questionnaire with ASSET and other scales included in this particular study were sent by email to each participant and administered electronically.

The option for this kind of sampling represents an obligation introduced by the organization where the study was conducted. This kind of non-probability sampling, known as convenience sampling, is operationally easy and low cost, but has as a consequence the inability to make general statements with statistical accuracy on the population of the organization in Lisbon metropolitan area. However, given that in this sample there are employees from a variety of job functions and these workers come from different agencies, the results obtained may be considered an approximate picture of the universe to be studied.

The average age of the participants is 41.2 years (SD=8.3 years), approximately half are males, and the majority is graduated (46.6% bachelors and 21.8% masters); 14.8% have management roles, 32.3% technical, 34.8% commercial, and 18.0% perform administrative roles (Table 1).

Table 1: Sample characterization.

| Age | Sex | Habilitations | Functional group | Work regime |
|----------|---------------|----------------------|----------------------|-----------------|
| M=41.2 | 48.6% males | 31.6% undergraduates | 14.8% managers | 99.0% full time |
| SD=8.3 | 51.4% females | 46.6% graduates | 32.3% technicians | 1.0% part-time |
| Min=22.0 | | 21.8% postgraduates | 34.8% commercials | |
| Max=64.0 | | | 18.1% administrative | |

Measures

The Portuguese version of ASSET [23,24] (*A Shortened Stress Evaluation Tool*), a self-report instrument validated for the Portuguese population, that measures among other dimensions individual's perceptions regarding stress, wellbeing and engagement at work, was used and the obtained measures were Work Relationships (WR), Work-Life Balance (WLB), Overload (OL), Job Security (JS), Control (CL), Resources and Communication (RC), Aspects of the Job (YJ) and Pay and Benefits (PA). In our study we have used the Psychological Wellbeing (PWB) dimension of the Employee healthscale. The presenteeism was a single item measure [25]. A more detailed description of the measures involved for this analysis is given [14].

ASSET section 'Perceptions of your job' measures possible sources of workplace stress, and job, home and social life related pressures. It comprises 37 items divided into eight sub-scales, to assess possible sources of stress identified by the AS-

SET model. Each of these eight sub-scales are briefly commented on below. However, in the reported analysis, we have not used the 'Pay and Benefits' sub-scale.

Work Relationships

Perceived poor and inadequate relationships and unfairness can be a potential source of stress Kahn et al. [26]. On the contrary, appropriate relationships can protect individuals and help them to cope with stress.

Work Life Balance

Potential spillover or interference between work and individual or family life can have an impact on the level of experienced stress [27], and consequently on health and commitment. According to the Industrial Society survey (2001), this may be the primary cause of occupational stress.

Overload

It reflects high workloads, frequent time pressures and unrealistic deadlines as sources of stress as described by TUC's survey (2000) and cited by the Industrial Society survey (2001). French and Caplan [28] identified overload as a source of psychological distress.

Job security

The fear of losing a job remains a potential source of stress for employees [29].

Control

Perceptions of control are linked to the low influence in organising and performing the tasks at work. This subscale measures the individual's perception of lack of control as a source of stress. Those individuals who perceive that they can control their work are less likely to present psychological distress than those who do not [30].

Resources & communication

Some literature (e.g. NIOSH, 1999; British Industrial Society, 2001) has described that appropriate training, equipment and resources as well as adequate information and the recognition of employee's value by the organization are relevant for the workers. Poor communication is one of the most rated sources of stress in the British Industrial Society report.

Aspects of the Job (Your Job)

Other potential sources of stress are related to the nature of the job, including type of tasks, physical working conditions and job satisfaction. Job dissatisfaction can be either an outcome of job stress or a source of stress in itself [31].

Pay and benefits

The financial aspects related with work are important as they influence the lifestyle that a person can lead. They often have an impact on individuals' self-worth and perceived value to the organization.

Psychological wellbeing

Subjective Wellbeing (SWB) is defined as "A Person's cognitive and affective evaluations of his or her life" [32]. Mental health is strongly linked to this concept of wellbeing. This positive dimension of mental health is highlighted in WHO's definition of health "Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (WHO). This subscale of ASSET list several items of stress-induced psychological ill health and does not pretend to give a clinical diagnosis.

Presenteeism

The presenteeism measure applied is an item of the questionnaire used in this study and it is one of the presenteeism questions of the World Health Organization's Health and Work Performance Questionnaire (HPQ) [33]. More specifically, in this study we use absolute presentism that, according to Kessler et al [25], is conceptualized as "A measure of actual performance in relation to possible performance". Using a 0-to-10 scale, indicating percent of performance, the item is "how would you rate your overall job performance on the days you worked during the past 4 weeks (28 days)?" Simple scoring assumes that absolute presenteeism has a lower bound of 0 (to-

tal lack of performance during time on the job) and an upper bound of 100 (no lack of performance during time on the job).

Analytic procedure

The IBM SPSS statistics (SPSS, Chicago Inc. v22) was used to conduct descriptive statistics. To explore the linear association between the variables, Pearson correlation coefficients were calculated using the same statistical software. Preliminary data analyses were conducted to assess the normality, linearity, and homoscedasticity of the variables under study [35]. The collected data showed to be appropriate for further analyses. The Cohen's [14] guidelines were used to interpret the magnitude of the linear associations between variables.

Based on previous literature review, the major aim of this study was to test the mediating effect of psychological wellbeing in the relationship between organizational stress perception and the absolute presenteeism reported by the employees. More specifically, we proposed a mediation model composed by seven exogenous variables (RC, WLB, YJ, CL, WR, JS and OL), and two endogenous variables (PWB and absolute presenteeism), with PWB also acting as a mediator.

To simultaneously analyze the direct and indirect paths hypothesized in our model we considered a form of Structural Equation Model (SEM) named path analysis using AMOS software (version 22.0, SPSS Inc. Chicago, IL). The parameters estimation method used was Maximum Likelihood (ML), because this is a widely used estimation method in this type of statistical procedures (Brown 2006). The plausibility of the overall model was assessed on the basis of the Chi-Squared test (χ^2) goodness-of-fit test and several goodness-of-fit measures, specifically: Normed Chi-Square ($\chi^2/d.f.$), Tucker Lewis Index (TLI), Comparative Fit Index (CFI), and the Root-Mean Square Error of Approximation (RMSEA) with 90% confidence interval. The following reference values were considered to assess the goodness-of-fit of the model under investigation: A non-significant Chi-Square value (is indicative of a good fit; a value of Normed Chi-Square "Close to 1" is demonstrative of a perfect model fit, "Between 2 and 3" is indicative of a good fit and "Between 3 and 5" is representative of an acceptable fit (according to Arbuckle, 2008); a CFI and a TLI "Greater than .90" or ".95" is indicative of an acceptable and good fitting, respectively; and a RMSEA "Under .05" as indicative of an excellent model fit, ranging "Between .05 and .08" as indicative of an acceptable fit, "between .08 and .10" as indicative of mediocre fit, and "above .10" as an unacceptable fit [35].

Since all the possible direct and indirect paths were included, the initial model was a saturated/ just-identified (with zero degrees of freedom) and fitted perfectly. As the adjustment indices for the initial model did not add any useful information for model interpretation, they were not analyzed or reported. To test the mediation effects we used boot strap procedure, appointed as one of the most valid and powerful methods for testing mediation effects [36] with 2000 resamples to create 95% bias-corrected confidence intervals around the standardized estimates of total, direct and indirect effects, because this resampling method has been suggested to have greater capacity of detecting indirect effects in small samples. With bootstrap procedure, we can conclude that the effect tested is significantly different from zero (significance level of .05), if there is not a zero between the lower and the upper bound of the 95% confidence interval found. The strongest demonstration of the indirect effect existence occurs when we find a significant standardized

indirect effect but not a significant standardized direct effect. Preliminarily to these analyses, we applied a statistical test based on the Mahalanobis' distance (DM2) to detect the possible presence of multivariate outliers. Considering a significance level of 0.001 as the criteria for the presence of multivariate outliers [37] ($p < 0.001$), we found few multivariate outliers. However, we have decided not to eliminate them from our sample, since they represent a considerable number and thus possible observations within general population, providing us with results that can be generalized for the population in study (for further explanation see. Data were also screened for asymmetry and multivariate kurtosis to ensure the normality of the variables [37]. Using Kline [37] guidelines ($|Sk| < 3$ and $|Ku| < 8-10$) we did not find severe violations of normal distribution. All variables also showed acceptable values of multicollinearity ($VIF < 5$), assessed on SPSS.

Results descriptive statistics and correlation analysis

The pattern of associations between organizational stressors, psychological wellbeing and absolute presenteeism can be observed at Table 2. Results showed that all six organizational stressors dimensions have statistically significant correlations in the expected direction (i.e., from aspects of the job. work-life balance =.23 up to work relationships. resources and communication =.65, all $p < .01$). Furthermore, results also indicate the expected significant positive association between psychological wellbeing and all the organization stressors, ranging between psychological wellbeing. Job security =.30 and psychological wellbeing. Resources and communication =.39 (all $p < .01$), and a significant negative association with absolute presenteeism ($r = -.23$, $p < .01$). The correlation coefficients found between absolute presenteeism and organizational stressors are also statistically significant (i.e., overload =-.11 and aspects of the job =-.25, both $p < .01$), with exception of work life balance in which a non-significant correlation was found.

Table 2: Means, standard deviations, skewness and kurtosis for each variable. Pearson correlations between variables (n=399).

| | M | SD | Ske | Kur | WLB | YJ | WR | OL | CL | RC | JS | PWB |
|---------|-------|-------|-------|-------|-------|--------|--------|-------|--------|--------|--------|--------|
| WLB | 2.76 | 0.95 | 0.34 | -0.27 | 1 | | | | | | | |
| YJ | 2.33 | 0.85 | 0.84 | 1.12 | .23** | 1 | | | | | | |
| WR | 2.36 | 0.81 | 0.71 | 0.41 | .38** | .50** | 1 | | | | | |
| OL | 2.92 | 1.06 | 0.42 | -0.20 | .48** | .40** | .49** | 1 | | | | |
| CL | 2.84 | 1.17 | 0.58 | -0.20 | .25** | .55** | .53** | .43** | 1 | | | |
| RC | 2.74 | 0.99 | 0.50 | -0.07 | .26** | .53** | .65** | .39** | .62** | 1 | | |
| JS | 2.84 | 0.79 | 0.12 | -0.35 | .28** | .38** | .38** | .29** | .39** | .41** | 1 | |
| PWB | 1.91 | 0.63 | 0.49 | -0.27 | .31** | .37** | .37** | .31** | .31** | .39** | .30** | 1 |
| Ab. Pr. | 74.89 | 13.52 | -0.96 | 1.02 | ns | -.25** | -.15** | -.11* | -.20** | -.22** | -.22** | -.23** |

* $p < 0.05$; ** $p < 0.01$

WLB: Work Life Balance; YJ: Aspects of the Job; WR: Work Relationships; OL: Overload; CL: Control; RC: Resources and Communication; JS: Job Security; PWB: Psychological Wellbeing; Ab, Pr: Absolute presenteeism.

Path analysis

Our initial model was designed to test the effect of PWB in the relation between work stressors dimensions (RC, WLB, YJ, CL, WR, JS and OL), and absolute presenteeism. The mediational model tested explained 24% of the variance of PWB and 12% of the variance of absolute presenteeism in our sample. The results indicated that eight of direct paths included in our initial model were not statistically significantly different from zero, and by that reason were progressively removed. Specifically, path analysis results indicated that the test statistics representing the paths overload → absolute presenteeism ($b = -0.177$; S.E. = 0.767; $p = .817$; $\beta = -0.014$), CL → absolute presenteeism ($b = -0.414$; S.E.=0.749; $p = .581$; $\beta = -0.036$), WR → absolute presenteeism ($b = 0.646$; S.E.=1.107; $p = .559$; $\beta = 0.039$), CL → PWB ($b = -0.021$; S.E.=0.033; $p = .531$; $\beta = -0.038$), WR → PWB ($b = 0.044$; S.E. =0.049; $p = .372$; $\beta = 0.056$), OL → PWB ($b = 0.036$; S.E. =0.032; $p = .267$; $\beta = 0.060$), RC → absolute presenteeism ($b = -1.073$; S.E. =0.806; $p = .183$; $\beta = -0.078$) and, for last, JS → PWB ($b = 0.071$; S.E. =0.040; $p = .077$; $\beta = 0.088$) did not achieve the critical value of 1.96 for two-tailed statistical significance at the .05 significance level.

The global goodness-of-fit indices indicate that our final model after removing the non-significant paths has a very good fit: $\chi^2 = 7.997$ (g.l.=8, N=399), $p = .434$, Normed Chi-Square ($\chi^2/g.l.$) = 1.000, Comparative Fix Index (CFI)=1.000, Tucker Lewis Index (TLI) =1.000, Root-mean-square error of approximation (RMSEA) =.000 (90% CI = [0.000;0.059]). In our final model, all individual paths were statistically significant and explained 23% of the variance of psychological wellbeing and 11% of the variance of absolute presenteeism.

With the bootstrap procedure we found evidence for an indirect effect between RC and absolute presenteeism through PWB, that is negative $\beta = -.036$ (95%CI [-.073; -.011]; $p < .01$). Additionally, our results indicate that the effect of WLB on absolute presenteeism occur, partially, indirectly through PWB $\beta = -.033$ (95% CI [-.067; -.010]; $p < .01$) The indirect effect found explained 33% (.033/.100=.33) of the non-significant total effect found ($\beta = .100$, 95% CI: [.000; .200], $p = .051$). Because WLB shows a significant direct effect ($\beta = .133$, 95% CI: [.032; .233], $p < .05$) on absolute presenteeism, this could suggest it is possible that this relationship can also be mediated by other variables not included in our model. Although β is different from zero, its value is low, thus it has a reduced practical impact on presenteeism.

teism. We did not find evidence for an indirect effect of JS and absolute presenteeism through PWB. In fact, we only found a standardized direct effect from JS on absolute presenteeism ($\beta = -.142$, 95% CI: [-.248; -.031], $p < .05$).

Our results also showed that the standardized indirect effect (with PWB acting as a mediation) between YJ and absolute presenteeism is negative and statistically significant ($\beta = -.039$, 95% CI: [-.078; -.012], $p < .01$). However, because the standardized direct effect from is also statistically significant ($\beta = -.161$, 95% CI: [-.290; -.041], $p < .01$) we only can consider the existence of a partial mediation. The total effect, that represents the sum of the standardized indirect effect with standardized direct effect was $\beta = -.199$ (95% CI: [-.315; -.079], $p < .01$), and the indirect effect found explained 20% (.039/.199=.196) of the total effect found.

Finally, we simultaneously analyzed the effect of all organizational stressors in the model and study the single effect of each of them to explain absolute presenteeism. In comparison with the remaining stressors and by controlling them as predictors, the results indicate that RC do not directly impact on absolute presenteeism, their effect being mediated by PWB. WLB and YJ have respectively a positive and negative direct effect on presenteeism, decreased by the presence of the mediated variable (PWB). JS has a direct impact, although a negative one (-0.14) on absolute presenteeism, this means that if there is a high JS the presenteeism is low.

Some of those dimensions (CL, WR and OL) theoretically hypothesized as having a unique effect did not reveal themselves as significant predictors. These results suggest that the effect of these three variables on PWB and absolute presenteeism does not add a relevant value to the model, in addition to the variance that is already explained by the variables WLB, YJ and JS, in what concerns their predictive effect on PWB and absolute presenteeism (Figure 1).

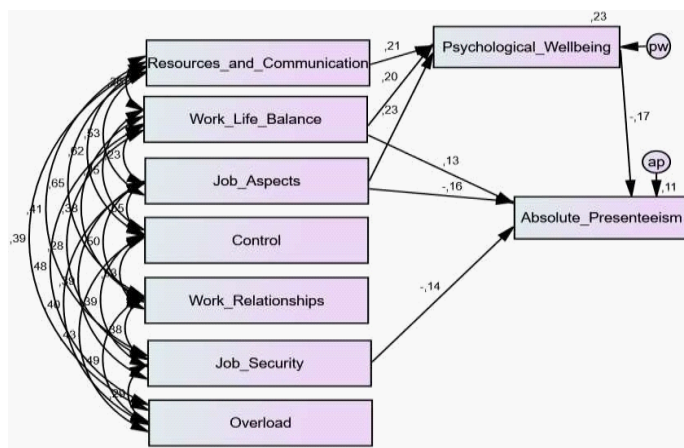


Figure 1: Mediation Model. The mediator effect of psychological wellbeing in the relation between work stressors dimension and absolute presenteeism. Standardized path coefficients among variables are statistically significant at the .05 level.

Discussion

Major findings

The impact of psychosocial determinants such as workplace conditions and WLB on presenteeism, mediated by the effect of workers PWB, as an indicator of positive mental health, is reported. In fact, although the literature shows strong support for

the impacts of organizational stress on presenteeism and for the concomitant negative effects of presenteeism at the individual and organizational level, little is known about the process underlying this relation. Based on the notion that presenteeism can be considered an expression of poor individual wellbeing, here we propose an extension of this phenomena and hypothesize that wellbeing can work as an important pathway through which organizational stress affects presenteeism. A mediation analysis with structural equation modelling was performed by using AMOS software. This kind of analysis has already been used with dimensions of ASSET [38]. However, it was carried out in New Delhi, India, at a different kind of organization, in the context of call center industry, targeting and measuring distinct dimensions of ASSET, namely employee perceptions of stressors, their commitment to the organization, their perception of the organization’s commitment to them, and their health and wellbeing.

Globally, the results are consistent with our proposal and indicate that several psychosocial determinants at the workplace have a mediated impact on absolute presenteeism via PWB. More specifically, RC (meaning that adequate resources and good communication are relevant for the workers) do not directly impact on absolute presenteeism, their effect being mediated by PWB. WLB (a potential spillover or interference between work and individual or family life) and YJ (potential sources of stress related to the nature of the job) have respectively a positive and negative direct effect on presenteeism, decreased by the presence of the mediated variable (PWB). JS has a direct impact, although a negative one on absolute presenteeism, meaning that if there is a high JS the presenteeism is low.

CL, WR and OL did not reveal themselves as significant predictors. This somehow differs from the classical models, namely the above mentioned Karasek and Theorell JDC model in which a perception of low or lack of control at work may constitute a risk of stress and ill health translated in disorders such as, anxiety, depression, and increased incidence of cardiovascular symptoms.

Possible problems with the methods used

Being a non-probabilistic sample, there are biases and the generalization of the results from this study may have some limitations. However, in this sample there are employees from a variety of job functions and the workers come from different agencies, therefore the results obtained may be considered an approximate picture of the organization. As a cross-sectional study, causality cannot be tested but there is a strong theoretical evidence around the association between mental health and presenteeism. Further studies are needed involving other kind of organizations, in various cultural backgrounds and also with other populations, in order to get more scientific evidence about the impact of organizational stressors in presenteeism and productivity.

Longitudinal studies on the impact of mental health and wellbeing promotion interventions will be necessary [39,40,41].

Although the JDC, a two dimensional model, has assumed a prominent role in the field of occupational stress, it has shown some limitations namely: A conceptual overlap between the measure of demands and the psychological outcome under study, susceptibility to self-report bias, and common use of the model in cross-sectional designs, yielding no information on the causality of the relations between work characteristics and

wellbeing [42]; failure in capturing the complexity of work environments [43] as the high simplicity of the model is the most common criticism appointed [44,45] for not including other, equally important, psychosocial work characteristics; and the extreme positive emphasis in job control whereas control may be considered as a stressor when the worker has a low sense of self efficacy [43].

Clinical and scientific implications of the study findings

The workplace organizational conditions as well as WLB have an impact on presenteeism. Our findings show that underlying the relation between those work stressors and presenteeism there is a mediator role of PWB. As such, mental health is a determinant factor in this relationship. Therefore, we claim that mental health promotion interventions will act as buffers in the relation between poor work conditions and presenteeism.

One of the most important settings to address mental health problems and promote mental health and wellbeing is the workplace [46]. Subsequently, the workplace can provide a social context to develop a mentally healthy and supportive environment. Broadly, the aim of mental health promotion goes beyond prevention, it embraces multiple health, social and economic benefits. Mental health promotion is considered a process of reinforcing protective factors for good mental health, in pair with identifying and addressing key risk factors.

An overall strategy within mental health promotion should be implemented to improve workers' wellbeing. In order to promote a sustainable programme it is crucial to address physical and mental health, lifestyle, and job engagement. Additionally, productivity losses could fall by 30% with the implementation of workplace mental health promotion initiatives to overcome undue stress and poor mental health.

It is also important to measure the effect of psychosocial stressors at the workplace on mental ill-health and common mental disorders [47].

At the organizational level, a workplace focused on WLB, health and safety, employee development and recognition, and adequate communication, has been considered a facilitator of mental health and wellbeing [48]. The bottom-up approach ensures the employee's involvement, rather than the top-down (managerial) approach only. This will meet the needs of the worker, and will allow the employees feedback as part of the process (European Agency for Health and Consumers (EAHC) and DG Health and Consumers (SANCO), [49]. Social wellbeing and PWB together are part of employee wellbeing and should become aims of managerial practices [48].

Long working hours may contribute to negative health outcomes and are generally related to high fatigue and low satisfaction however the voluntary feature needs to be taken into consideration because for wellbeing it matters whether employees worked overtime voluntarily or involuntarily, and whether they were rewarded or not. Therefore, those who voluntarily work overtime may not feel fatigued but, instead of it, satisfied even when they receive no rewards for their extra work hours, and this can explain why in our sample overload is not significant as a predictor of presenteeism.

Some literature points out that PWB and resources were found to be predictive of productivity which is according to our results.

Finally, it is important to know which hazards, at a particular workplace, have the most potential to harm workers. By identifying hazards at the workplace and by conducting a thorough hazard assessment of work environments, we will be better prepared to control or eliminate them and prevent consequences through evidence-based and efficacious interventions [50,51,52].

Further work

Although important efforts have been made by European Union (EU) and its Member States to improve the mental health of the populations, there is still much to achieve. At least 30 % of people with severe mental disorders in European countries do not have access to mental healthcare, remaining untreated and the majority of the populations do not benefit from the effective prevention and promotion interventions (*Mental health at the workplace. Situation analysis and recommendations for action. Annex in Joint Action on Mental Health and Wellbeing*. 2016) [53]. Mental health information systems are mainly focused on measuring mental disorders thus failing to measure the impacts of poor wellbeing indicators such as presenteeism. Taken together, the impact of mental disorders and poor mental wellbeing indicators are major threats to EU productivity and to the EU citizen's wellbeing [54].

Actions towards common mental disorders (such as anxiety and depression) prevention is needed. We should target the social conditions of daily life, and the economic and political determinants of health and mental health as well as the treatment improvement of existing physical and mental conditions [55].

In future studies, workplace culture should be taken into account as it is a mediating factor in either reducing or increasing stress and, specifically, there are some workplace characteristics (i.e., high pace and low skill discretion, as well as bullying and mobbing situations, discrimination and abuse of employees) related to higher risks of stress and common mental disorders [56]. Additionally, more studies to assess the gains for productivity in the use of telework [57] and the association between home-based telework and sickness presenteeism [58] should be performed.

Conclusions

In this study we develop the effect of diverse independent variables at the workplace on presenteeism, and the relevance of the mediator role of PWB. This mediation is a possible explanation on how these variables impact on presenteeism.

This article is a contribution for the knowledge of the role of psychosocial organizational determinants on absolute sickness presenteeism ("A measure of actual performance in relation to possible performance" at the workplace, due to health reasons), mediated by the effect of workers PWB. The role of a mediation analysis with structural equation modelling performed by using AMOS software is emphasized. We found no direct impact of dimensions such as CL, WR and OL on presenteeism. On the other hand, our results suggest that RC, as an organizational stressor, have a positive impact on absolute presenteeism strongly mediated by PWB. In addition, the effect of WLB and of YJ, respectively a positive and negative effect on absolute presenteeism, partially occurs through PWB. JS has a significant negative effect on absolute presenteeism that is not mediated by PWB.

The health diagnosis of a Southern European country organization reflects that the presenteeism phenomenon is no doubt related to the workers mental wellbeing.

The results of this study may provide clues for the development of recommendations and multilevel (local, regional, national and international) policy intersectoral strategies in the perspective of mental health in all policies [53,59]. Organizational programmes involving managers, occupational health and safety personnel, human resources and employees are crucial, to enable the development of mental health promotion and mental disorder prevention interventions, including mental health literacy, work-family reconciliation, burnout prevention and engagement at work.

To identify how any future programmes could build on the learning from the outcomes of this study and others within the same framework, a mental health and wellbeing impact assessment (MHWIA), as an internationally recognized process, based on the health impact assessment, methodologies, must be undertaken prior to the implementation of any intervention. It seeks to identify and evidence the key impacts that a policy, service or project has on mental wellbeing, and to ensure that relevant population groups are targeted, through community profiling, literature review and stakeholder interviews, as well as through the identification of wider determinants and protective factors for mental health and wellbeing at the workplace.

Finally, further research with appropriate study designs should continue to investigate the role of PWB on presenteeism, absenteeism and productivity, during the pandemic and later on in post-COVID-19 era. Home-based telework as a new work arrangement will bring positive and negative impacts on work-life balance and on the mental health of the workers who may be suffering from more isolation, less social support and high levels of stress.

Research highlights

This article is a contribution to the knowledge about the effect of psychosocial organizational determinants on absolute sickness presenteeism. More specifically, we propose that psychological wellbeing will work as mediator of the relation between organization determinants and presenteeism.

The health diagnosis of the Southern European country organization in our study reflects that the presenteeism phenomenon is prevalent. Importantly, the results show the effect of the organizational determinants influence on presenteeism that is better explained through a mediation by psychological wellbeing.

Control, work relationships and overload did not reveal significant predictors of presenteeism which, although counteracting the Job-Demand Control (JDC) model, might be a consequence of the high educational level, higher income, and younger age of the study participants.

Mental health promotion interventions targeting individual psychological wellbeing will act as buffers in the relation between work stressors and presenteeism, as psychological wellbeing is a pathway through which organizational stress may affect presenteeism.

The results of this research may provide clues for the development of recommendations, such as early identification of psychosocial risks, promotion of family friendly workplaces, and

the implementation of multilevel (local, regional, national and international) policy intersectoral strategies in the perspective of mental health in all policies.

Funding

The financial support for this research was due to a co-funding by the former High Commissioner for Health (ACS) and subsequently by the Directorate General of Health (DGS) in Portugal, under the project Health Impact Assessment of Employment Strategies, through two collaboration protocols, respectively on the 2nd November 2009 and 20th June 2011, between ACS, the Institute of Preventive Medicine and Public Health, Faculty of Medicine, University of Lisbon, and the National Institute of Health Doutor Ricardo Jorge.

Acknowledgments

To the former High Commissioner for Health-ACS and to the Directorate General of Health-DGS, Portugal, for the financial support of this research; to Matthew Smeed as an expert consultant for some subjects related to the instrument ASSET; to the Administration of Montepio Geral (CEMG) and to Maria do Carmo Bragança and Helena Pita Soares; to the participants at this study. L.S. thanks the partial support by national funds through FCT – Fundação para a Ciência e a Tecnologia, under the project UIDB/00006/2020.

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