

## **Moderating Role of Social Support on the Relationship Between Job Demand and Presenteeism<sup>1</sup>**

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**Abstract:** The pressures of contemporaneity and the increase of unemployment cause employees to attend work when sick, becoming presenteeist. The purpose of this study was to investigate the influence of psychological demands on presenteeism, considering the support of the bosses and the control of work as moderators of this relationship. A quantitative cross-sectional study was developed at a Public Institution of Higher Education. 204 technical-administrative servants who responded to the Stanford Presenteeism Scale - SPS6 and the Job Content Questionnaire - JCQ participated in the study. The results indicate that the greater the support of the boss and the control that the employee has of his/her work the less the presenteeism, even in the face of high psychological demands of the work. This study contributes to the investigation of organizational antecedents (demands of work and social support) and personal (control) of presenteeism.

**Keywords:** presenteeism, work safety, organizational behavior, social support

### **O Papel Moderador do Apoio Social na Relação entre Demanda de Trabalho e Presenteísmo**

**Resumo:** As pressões da contemporaneidade e o aumento do desemprego fazem com que os empregados compareçam ao trabalho quando doentes, tornando-se presenteístas. O objetivo deste estudo foi investigar a influência das demandas psicológicas sobre o presenteísmo, considerando o apoio da chefia e o controle do trabalho como moderadores dessa relação. Desenvolveu-se um estudo quantitativo de corte transversal em uma Instituição de Educação Superior pública. Participaram do estudo 204 servidores técnico-administrativos que responderam à Escala de Presenteísmo de Stanford – SPS6 e ao Job Content Questionnaire – JCQ. Os dados foram analisados por meio de análise fatorial confirmatória e regressões múltiplas. Os resultados indicam que quanto maior for o apoio da chefia e o controle que o empregado tem do seu trabalho menor é o presenteísmo, mesmo diante de altas demandas psicológicas do trabalho. Este estudo contribui para a investigação dos antecedentes organizacionais (demandas do trabalho e apoio social) e pessoais (controle) do presenteísmo.

**Palavras-chave:** presenteísmo, segurança do trabalho, comportamento organizacional, apoio social

### **El Papel Moderador del Apoyo Social en la Relación entre Demanda de Trabajo y Presentismo**

**Resumen:** Las presiones de la contemporaneidad y el aumento del desempleo hacen que los empleados asistan al trabajo cuando enfermos, haciéndose presentistas. El objetivo de este estudio fue investigar la influencia de las demandas psicológicas sobre el presentismo, considerando el apoyo de la jefatura y el control del trabajo como moderadores de esa relación. Se desarrolló un estudio cuantitativo de corte transversal en una Institución de Educación Superior pública. Participaron del estudio 204 servidores técnico-administrativos que respondieron a la Escala de Presentismo de Stanford - SPS6 y al Job Content Questionnaire - JCQ. Los datos fueron analizados por medio de análisis factorial confirmatorio y regresiones múltiples. Los resultados indican que cuanto mayor sea el apoyo de la jefatura y el control que el empleado tiene de su trabajo, menor es el presentismo, incluso ante altas demandas psicológicas del trabajo. Este estudio contribuye a la investigación de los antecedentes organizacionales (demandas del trabajo y apoyo social) y personales (control) del presentismo.

**Palabras clave:** presentismo, seguridad del trabajo, comportamiento organizacional, apoyo social

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Presenteeism appears in the literature as a psychosocial factor of great relevance and refers to the worker's attendance to work even when he/she feels physically or psychologically ill. The scientific interest in studying it is growing considering the significant influence it exerts on worker performance and productivity, although national and international research on this subject is still scarce (Paschoalin, Griep, Lisboa, & Mello, 2013).

Many workers present themselves in the workplace even sick due to social and occupational factors. The precarious working conditions, the psychological pressures on the part of the work colleagues or fear of penalties by the employer stand out as influencers of this behavior (Palha, 2014). These factors can be characterized in three different dimensions: work demands, work control and social support.

The Demand-Control-Social Support (DCSS) model covers these three dimensions in a well-defined manner. The DCSS is an update of the Demand-Control Model - DCM (Karasek, 1979), which initially had two factors: demands and work control (Alves, Braga, Faerstein, Lopes, & Junger, 2015; Karasek, 1979).

These two dimensions cover the psychosocial aspects of work and the health of the worker. However, it was noticed that the individual and emotional dimension (values, beliefs, personal/contingency factors, among others) was not contemplated in the model. For this reason, social support was included, expanding the model for Demand-Control-Social Support (DCSS) (Karasek & Theorell, 1990; Saijo et al., 2017).

Social support refers to the support that the worker can receive from his/her boss, work colleagues, relatives and friends. In this study, the support occurs in the form of encouragement from the chief and is characterized by friendly relationships and collaborative practices.

According to DCSS, job demands can be both physical and psychological. Physical demands relate to the level of physical demand required for the performance of work tasks (Karasek, 1979; Pereira, Kothe, Bleyer, & Teixeira, 2014). Psychological demands refer to time pressure (proportion of working time performed under such pressure), level of concentration required, interruption of tasks and need to wait for activities performed by other workers (Alves, Hökerberg, & Faerstein, 2013; Karasek, 1979).

The psychological demands have greater highlights in the scientific literature, since the workload and the demand for attention and concentration, among other factors that compose them, are interpreted by the worker as requirements of greater direct influence on the performance of the man at work when compared to the physical effort. On the other hand, the consequences of high exposure to psychological demands, in time and intensity, are related not only to psychological health, but also to the physical health of the worker (García et al., 2015; Sasaki, 2013; Zarpelão & Martino, 2014).

Work control involves two components: (a) aspects related to the use of skills, which relate to learning new things, repetitiveness, creativity, variety of tasks and development of individual special skills; and (b) decision-making authority, which includes individual skills for decision-making about his/her own work, influence of the work group, and managerial policy.

The emotional aspect incorporated into the model, in later studies, is characterized by the support offered by the boss and/or work colleagues (Karasek & Theorell, 1990; Zarpelão & Martino, 2014). This dimension equates how support can

influence the relationship between demand/control at work (Barcaui & Limongi-França, 2014; Saijo et al., 2017).

Although it is the theoretical model most used up to the present moment in the analysis of the relationship between the psychosocial aspects of work and the health impacts (Alves et al., 2015, Barcaui & Limongi-França, 2014), few are the findings in the literature using the DCSS model to establish determinants or direct determinants of presenteeism. Therefore, the purpose of this study is to fill this gap with the provision of empirical data that support the relationships between work demands, control, social support and presenteeism.

## **Presenteeism and DCSS**

Presenteeism is a psychosocial phenomenon arising from the relationship between work and the health of the worker. This relationship may suffer a significant influence of the demands and the control of the work, as well as the support received from the boss and colleagues (Barcaui & Limongi-França, 2014; Choi et al., 2011; Karasek, 1979; Zarpelão & Martino, 2014).

When subjected continuously to high physical or psychological demands at work, workers present greater physical and psychological weaknesses. Therefore, the high demands of work and the lack of support of the boss impact on the health conditions of the workers and are the main causes of the presenteeism (Franco, Druck, & Seligmann-Silva, 2010; Mandiracioglu, Bolukbas, Demirel, & Gumeli, 2015).

Thus, even if they are affected by health problems, workers often come to work to avoid having to deal with the organization. This fact occurs for several reasons; factors related to work, personal circumstances and the worker's own attitude are highlighted (Hansen & Andersen, 2008; Johansson & Lundberg, 2004).

The psychological demands of work – such as the pressure of time and work pace, levels of attention and concentration required – can provoke tensions and therefore suffering and mental disorders, evidencing both physical and psychological illnesses as well as interpersonal and extra-work conflicts (Mascarenhas, Prado, & Fernandes, 2013).

Regarding work control, the literature presents conflicting results. On the one hand, there are studies that defend the idea that, given the pressure of time and the lack of support to perform the tasks, the workers who have more control avoid leaving work, even when they are sick, becoming presenteeist (Hansen & Andersen, 2008; Vieira, 2014). This position is countered by the principles of the DCSS model, which indicate that workers with high control respond adequately to the work environment and, consequently, experience less psychological burden, being less presenteeist (Karasek, 1979; Pereira et al., 2014).

This study intends to understand presenteeism considering the DCSS model. For this, it establishes the hypothesis that the psychological demands are positively associated to the

presenteeism, so that the greater the psychological demand, the greater the presenteeism (Hypothesis H1).

In organizations, when working conditions are precarious and interpersonal relationships are eroded, there is a recurrence of isolation and segregation, which are strengthened by management oppression with workers (Dew, Keefe, & Small, 2005). Under these conditions, workers feel compelled to attend work, even when ill, to avoid annoyance, embarrassment and humiliation on the part of the boss. In addition, they feel threatened to lose their jobs.

Workers' fear increases their dependence on the organization and favors behaviors harmful to their health (such as the camouflage of symptoms and illnesses) and their labor rights (such as giving up their vacation), becoming more and more presenteeist (Camargo, 2017).

Studies indicate that the uncertainty that accompanies insecurity to preserve employment is a psychosocial factor of higher potential when associated with symptoms of physical and mental illness. Given these findings, it is postulated the hypothesis that work control is negatively associated with presenteeism, so that the higher the work control, the lower the presenteeism (Hypothesis H2).

Higher levels of stress, hypertension and cardiovascular diseases were identified in workers who presented high levels of job insecurity (Juárez-García, 2007; Mandiracioglu et al., 2015).

The relationships established with the work or conditions imposed by the organization and its leadership act as oppressors towards the worker, which becomes more and more presenteeist. This is due to the worker's power to choose to attend work or seek professional help to treat a health problem that is only apparent and not real (Dew et al., 2005). Again, the insecurity with the work and the fear of being fired present themselves as causes of presenteeism. Hansen and Andersen (2008) point out that workers who have the support of their supervisors tend to stay healthier for longer.

Subsequent studies demonstrate the significant influence of managers' behaviors and attitudes on the presenteeism of their subordinates (Araújo, 2012). Based on these notes, the hypothesis was established that the support of the boss is associated negatively with the presenteeism, so that the greater the support of the boss, the less the presenteeism (Hypothesis H3).

Adverse reactions to workers' health occur due to psychological wear resulting from simultaneous exposure to high psychological demands and poor control over their work process (Alves et al., 2015; Karasek, 1979). The degree of autonomy, creativity and decision-making power that the professional must perform the assigned work are characteristics of control at work (Barcaui & Limongi-Franca, 2014).

Studies indicate that work environments with high demands and low control interfere negatively in the health of the worker, since the professional in this situation tends to have more wear, more suffering and dissatisfaction. On the other hand, work control is positively associated with workers' quality of life, so that, as work control increases, the impact of the high demands of work is diminished (Barcaui

& Limongi-Franca, 2014; Johnson, Hall, & Theorell, 1989; Penseau et al., 2014).

Regarding social support, most studies aim to identify its direct impact on the mental health of the worker. Rare were the investigations carried out with the objective of understanding whether the support of the boss and/or work colleagues influenced the association between psychological demands and work control on workers' mental health (Barcaui & Limongi-Franca, 2014; Saijo et al., 2017).

Social support gives workers greater control over their emotions and greater possibility of coping with stress (Barcaui & Limongi-Franca, 2014). Studies have shown that social support enhances the positive or negative effects of demands and work control on worker health (Johnson et al., 1989; Karasek & Theorell, 1990). In addition, social support can alleviate the impact of stressors, increase the sense of well-being, and function as effective moderators in the relationship between work demands and presenteeism (Cho, Park, Lee, Min, & Baek, 2016).

Therefore, the hypothesis was raised that the relation between work demands and presenteeism is moderated by control at work (Hypothesis H4a) and by the support of the bosses received by the worker (Hypothesis H4b), so that, given greater support of the boss and control of work, the less the relationship between demands and presenteeism and vice versa.

The purpose of this study was to investigate the influence of psychological demands on presenteeism, considering the support of the bosses and the control of work as moderators of this relationship. For that, a quantitative, correlational and cross-sectional study was developed.

## Method

### Participants

The research was carried out with the technical-administrative servants of a Public Institution of Higher Education of the State of Goiás. A total of 204 valid questionnaires were obtained, which corresponded to 24.1% of the total of 846 active servants at the time. Of these, 60.8% of the participants were female; the mean age was 35.8 years ( $SD = 9.97$ ) and the average working time in the institution was seven and a half years ( $SD = 9.3$ ).

### Instruments

**Demand-Control-Social Support.** The Job Content Questionnaire – JCQ, originally developed by Karasek (1979), validated in Brazil by De Araújo and Karasek (2008), was used to evaluate work demand and control. The original measure of work demand and control is composed of a five-point Likert scale, ranging from 1- Totally disagree to 5- Agree totally.

This scale has five subscales, which total 47 items. To meet the objectives of this study, only the dimensions related

to Psychological Demands were used, with nine items; Work Control, consisting of eight items; and Social Support of the boss, with six items. A confirmatory factorial analysis was performed, where good adjustment indexes ( $GFI = .95$ ;  $AGFI = .91$ ;  $TLI = .97$ ;  $CFI = .98$  and  $RMSEA = .06$ ) were obtained after items with lower factor load to .50 were withdrawn. The final measure was composed of ten items, distributed in three factors: Psychological Demand, with three items ( $\alpha = 0.86$ ); Work control, with four items ( $\alpha = 0.83$ ); and Boss support ( $\alpha = 0.87$ ), with three items. An example of an item for each of the factors is, respectively: “your job requires you to work very quickly”; “In your job, you have the opportunity to develop special skills”; and “your supervisor worries about the welfare of his/her subordinates”.

**Presenteeism.** The *Stanford Presenteeism Scale – SPS6* is composed of six Likert-type questions, ranging from 1 (totally disagree) to 5 (totally agree). It aims to evaluate the presenteeism and the cognitive, emotional and behavioral variables that affect the accomplishment of the work, in the presence of health problems, as well as determine the ability of the worker to focus on the work despite his/her health problems (Koopman et al., 2002; Ospina, Dennett, Wayne, Jacobs, & Thompson, 2015). This measure is composed of two factors: Completed Work (CW) and Avoided Distraction (AD). AD is associated with psychological causes and CW is manifested through physical causes (Koopman et al., 2002). In the present study, we used the dimension Avoided Distraction of the Stanford Presenteeism Scale 6 - SPS6, adapted and validated for Brazil by Paschoalin et al. (2013). The Avoided Distraction factor, composed of 3 items, obtained Cronbach’s alpha coefficient equal to 0.86. An example of an item is: “Due to my health condition, it was much harder to deal with stress at work.”

**Control variables.** The questionnaire used for this research contained as variables of control the gender, age and working time in Institution of Higher Education. Gender was measured as a binary measure (1 male and 2 female). The age and the time of service were obtained through the interval measurement informed by the participants.

## Procedure

**Data collection.** Data collection took place between the months of May and August of 2015. For this purpose, the list of the electronic addresses of all the active servants at the time of data collection was obtained from the IHE Human Resources Department. An electronic message (e-mail) containing the research questionnaire and the Term of Free and Informed Consent – TFIC was sent to all servants of the obtained list.

The consent term contained a set of information on the objectives of the study, the guarantee of minimum risks through participation, the confidentiality of the answers and that participation would be voluntary, in addition to the

other mandatory items in accordance with the mentioned resolution. Access to the questionnaire was only allowed to the servants who, after due clarification, indicated their acceptance to participate in the study, and all questions were mandatory. The servants that refused to sign the TFIC were excluded from the sample.

**Data analysis.** The collected information, all represented by numerical indicators, received statistical treatment from the software Statistical Package of Social Science (SPSS), version 21.0, and Amos 18.0.

To evaluate if the variables had adherence to the normal curve, the values of asymmetry and kurtosis indicated by Miles and Shevlin (2001) were considered; all variables met the parameters. The homoscedasticity and linearity of the regression model were analyzed by regression residuals. The multicollinearity was analyzed by the VIF (Tolerance and Variance Inflation Factor).

The instruments used in this research were validated in other studies and their factorial structures are theoretically grounded by their authors. In the present study, and because there is already strong empirical evidence for the validity of the factors, we proceeded to a series of CFA to effectively test the adequacy of the factorial structure of each instrument for the target population of our study.

Then, the correlations between the variables of the study were performed. As this study used only one data source, we performed the analysis of common variance between the constructs (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In order to analyze the overall fit of the model, several indicators were considered, among them the calculated  $\chi^2$ , the ratio between the  $\chi^2$  value and its degree of freedom –  $\chi^2/GI$  (Watkins, 1989), the *Comparative Fit Index* – CFI (Bentler, 1988), the Goodness of fit index – GFI (McDonald & Ho, 2002) and the *Root Mean Square Error of Approximation* – RMSEA (Browne & Cudeck, 1993). The model is considered adequate when the  $\chi^2/GI$  ratio is less than 3, the CFI and GFI have coefficients equal to or greater than 0.90, or when RMSEA values below 0.10 are obtained (Browne & Cudeck, 1993).

To test the hypothesized model theoretically and verify the moderation relations, Multiple Regression (MR) analyzes were applied (Aiken, West, & Reno, 1991; Baron & Kenny, 1986). Following the procedures described by Aiken et al. (1991), the significant interactions were decomposed to facilitate interpretation and better understand the strength and direction between the variables according to the hypotheses proposed. Thus, the slopes representing the relationship between X (psychological demand) and Y (presenteeism) in respondents with high levels of control (defined as a standard deviation above the mean) and for respondents with low levels of control (those with a standard deviation below the mean).

## Ethical Considerations

This study was evaluated and authorized by the Ethics and Research Committee of PUC Goiás, it is registered



through the number CAAE 44115915.8.0000.0037 and Opinion No. 1.034.787. Each step was conducted in compliance with the standards required by Resolution No. 466/12 of the National Health Council (Ministério da Saúde, 2012).

## Results

The discriminant validity of the factors of work demand, work control, boss support and presenteeism indicated that the four factors model produced the best overall adjustment ( $\chi^2 = 94.92$ ;  $\chi^2/GI = 1.63$ ;  $CFI = 0.97$ ;  $GFI = 0.93$ ;  $RMSEA = 0.05$ ). The three-factor model, combining work control and social support into one factor was tested and obtained  $\chi^2 = 348.92$ ; ratio  $\chi^2/GI = 5.62$ ;  $CFI = 0.78$ ;  $GFI = 0.72$ ;

$RMSEA = 0.15$ . The two-factor model, combining work demand, work control, and support into a single factor obtained  $\chi^2 = 629.67$ ;  $\chi^2/GI = 9.8$ ;  $CFI = 0.57$ ;  $GFI = 0.64$ ;  $RMSEA = 0.20$ . The single factor model obtained  $\chi^2 = 917.91$ ;  $\chi^2/GI = 14.12$ ;  $CFI = 0.36$ ;  $GFI = 0.53$ ;  $RMSEA = 0.25$ . These data support the preference for the four-factor model as constructs of empirically distinct measures and good overall fit.

The results of the descriptive and correlation analysis (Table 1) indicate that the demands of the work are positively associated with the presenteeism ( $r = 0.13$ ;  $p \leq 0.01$ ), to the work control ( $r = 0.39$ ,  $p \leq 0.01$ ) and the social support of the boss ( $r = 0.34$ ,  $p \leq 0.01$ ). In relation to the relationship between control of work and support of the boss with presenteeism, negative relations were obtained ( $r = -0.18$ ,  $p \leq 0.01$ ;  $r = -0.25$ ;  $p \leq 0.01$ , respectively).

Table 1

*Descriptive statistics and intercorrelations between study variables*

| Variable       | M    | SD   | 1             | 2    | 3             | 4              | 5             | 6    | 7 |
|----------------|------|------|---------------|------|---------------|----------------|---------------|------|---|
| 1 Age          | 35.8 | 9.97 | –             |      |               |                |               |      |   |
| 2 Gender       | 1.61 | .489 | .008          |      |               |                |               |      |   |
| 3 TEMP_IES     | 7.59 | 9.30 | <b>.564**</b> | .065 |               |                |               |      |   |
| 4 Presenteeism | 3.15 | 1.16 | <b>.164**</b> | .090 | <b>.229**</b> |                |               |      |   |
| 5 Control      | 2.47 | 1.28 | .023          | .012 | -.034         | <b>-.175**</b> |               |      |   |
| 6 Demand       | 3.51 | 1.04 | .039          | .010 | .050          | <b>.134*</b>   | <b>.393**</b> |      |   |
| 7 Support      | 3.31 | 1.20 | -.022         | .004 | -.001         | <b>-.251**</b> | <b>.338**</b> | .047 |   |

Note.\*\*. Correlation is significant at the 0.01 level.

\*. Correlation is significant at the 0.05 level.

## Hypothesis testing

To test the investigative hypotheses (Table 2), a set of hierarchically conducted regressions was performed, so that the control variables (age, gender and time of organization) entered the regression equation in step 1. The main effect of the demands of work on presenteeism entered step 2, and the moderators (control and support) entered the equation in step 3. The effects of the interactions were analyzed in step 4.

The research hypotheses H1, H2 and H3 refer to the direct effects of work demands, work control and social support of the boss over the presenteeism, respectively. The results presented in Table 2 demonstrate that the psychological demands are positively associated with presenteeism ( $\beta = 0.11$ ,  $t = 1.71$ ,  $p < 0.05$ ), corroborating the H1 hypothesis. On the other hand, work control is negatively associated with presenteeism ( $\beta = -0.19$ ,  $t = -2.55$ ,  $p < 0.01$ ), as well as the support of the boss ( $\beta = -0.23$ ,  $t = -3.30$ ,  $p < 0.001$ ), o que which confirms the hypothesis H2 and H3.

Table 2

*Result of the hierarchical regression analysis of control, antecedent and moderator variables on presenteeism*

|                            | Step 1        | Step 2        | Step 3         | Step 4         |
|----------------------------|---------------|---------------|----------------|----------------|
| <b>Control variables</b>   |               |               |                |                |
| Age                        | <b>0.10**</b> | 0.10**        | 0.11**         | 0.11**         |
| Gender                     | <b>0.07</b>   | 0.07          | 0.07           | 0.08           |
| Working time               | <b>0.07</b>   | 0.06          | 0.05           | 0.06           |
| <b>Direct effects</b>      |               |               |                |                |
| Psychological demand       |               | <b>0.12**</b> |                |                |
| Control                    |               |               | <b>-0.19**</b> |                |
| Support of the boss        |               |               | <b>-0.23**</b> |                |
| <b>Interaction effects</b> |               |               |                |                |
| DemXControl                |               |               |                | <b>-0.16**</b> |
| DemXSupport                |               |               |                | <b>0.04</b>    |
| <b>R<sup>2</sup> total</b> | 0.03          | 0.04          | 0.16           | 0.18           |
| <b>ΔR<sup>2</sup></b>      |               | 0.01          | 0.12           | 0.02           |
| <b>R<sup>2</sup> fit</b>   | 0.01          | 0.02          | 0.13           | <b>0.15</b>    |

**Moderation test**

As can be seen in Table 2, with respect to the moderation effect of work control and the support of the boss in the relation between work demands and presenteeism (Hypotheses H4a and H4b, respectively), the equation that includes only the control variables does not present a significant variance explained ( $R^2 = 0.03$ ,  $p > 0.05$ ) and the increase of the explained variance with the inclusion of the work demands was very discrete ( $\Delta R^2 = 0.01$ ). By including the main effects of the moderators work control and support of the boss, there was an increase in explained variance to 13%, with significant difference in explanatory power compared to the previous model ( $\Delta R^2 = 0.09$ ).

By adding the terms of interaction between the antecedent variable (work demand) and the hypothetically postulated variables as moderators (work control and support of the boss), the results showed to be the control of the moderating work in the relation between demand and presenteeism ( $\beta = -0.16$ ,  $t = -2.26$ ,  $p < 0.05$ ), confirming Hypothesis H4a. However, the support of the boss, despite presenting itself as a direct predictor of presenteeism, does not constitute a moderator ( $\beta = 0.04$ ,  $t = 0.56$ , n.s.), rejecting Hypothesis H4b. The explanatory power of the model increased to 15% ( $R^2 = 0.15$ ,  $p < 0.05$ ) by including the interaction terms in the regression equation, demonstrating a 2% increase in the explanatory power of the model ( $\Delta R^2 = 0.02$ ).

Simple slopes were conducted with the purpose of interpreting the nature of the interaction between the demands and the control of the work in the prediction of presenteeism. Figure 1 graphically depicts these slopes, illustrating the moderating effect of control on the relationship between work demands and presenteeism.

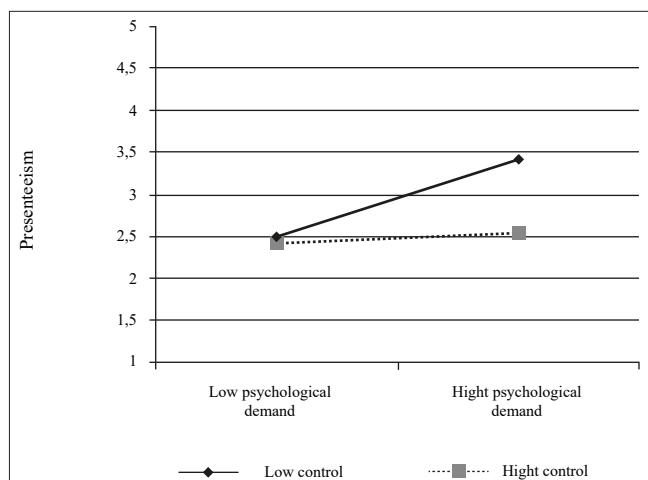


Figure 1. Moderation effect of work control on the relationship between psychological demand and presenteeism.

Consistent with Hypothesis H4a, the interaction between psychological demand and work control is configured as a predictor of presenteeism, so that, in the face of high demands, the greater the control of the worker over his/her

work, the lower will be the presenteeism ( $b = -0.39$ ,  $t = 5.58$ ,  $p < 0.001$ ), thus confirming Hypothesis H4a.

**Discussion**

In the light of the demands, control, and social support model (Karasek, 1979; Karasek & Theorell, 1990), this study aimed to analyze the influence of psychological demands on presenteeism in the face of low and high rates of work control and support Social. The idea was defended that the workers who have high control of the work can respond in a positive way to the work demands, favoring their health and becoming less presenteeist. Moreover, it has been argued that social support can stifle or potentiate the effects of demands on presenteeism. Based on this reasoning, it is possible to predict that the impact of the demands of work on presenteeism may be direct, but that this relation is better explained by the interaction between demands and control of work. Likewise, the hypothesis was established that the demands interact with social support to predict presenteeism.

To test the hypothetical conceptual model, the direct impact of demands, control and social support on presenteeism was first analyzed. The results confirm the influence of the work demands on the presenteeism (Hypothesis H1) and corroborate with the assumption that the presenteeism is associated to the health problems arising from the continuous exposure of the worker to high demands of work (Franco et al., 2010). In addition, the high demands of work are also responsible for the presence of suffering, psychic somatizations and minor psychic disorders (Camargo, 2017).

The results also show that work control negatively influences the presenteeism, confirming the H2 hypothesis. These results are consonant with the DCSS theory (Karasek & Theorell, 1990) in demonstrating that professionals under high work control, that is, those who have greater possibility to make choices, to have autonomy and to be creative, tend to be healthier, have greater motivation and professional satisfaction and, consequently, are less presenteeist. However, the results obtained contradict the assumption that workers with greater work control tend to be more presenteeist, since they attend work even if they feel sick (Vieira, 2014).

Regarding management support, the results showed that the higher the support received by workers, the lower the rate of presenteeism, confirming Hypothesis H3. These results corroborate with the findings of Dew et al. (2005) when prove empirically that the conflictual relations established between the worker and the conditions imposed by the organization and its management can act as oppressors, causing the worker to become more and more presenteeist.

However, friendly relations, through which support is perceived, can reduce presenteeism, so that the worker is not obliged to attend work only to avoid annoyance, embarrassment and humiliation on the part of the boss (Dew et al., 2005). The DCSS model presents the idea that, in the face of high work demands, control and social support function as regulators of worker health (Karasek &

Theorell, 1990). Therefore, this study tested two models of moderation, one of them for control and the other for the support of the boss.

The analysis of moderation of work control, in the relation between demands and presenteeism, showed that in the face of high demands, the greater the worker's control over his/her work, the lower the presenteeism, thus confirming the hypothesis H4a. When comparing these results with the literature, we observe consonance with studies by Camargo (2017) and Dew et al. (2005) because they indicate that presenteeism diminishes when the worker realizes that he/she can enjoy his /her autonomy and independence, including with regard to care with his/her own health.

However, when the worker does not have the real power of choices and is insecure in the face of constant threats of losing his/her job, there is a greater propensity for the development of presenteeism. The results show that the higher the control, the lower the presenteeism of the workers (Dew et al., 2005, Franco et al., 2010, among others), which indicate a positive association between high control and presenteeism.

Workers who have high control over their work, that is, those who perceive that they can make choices and have greater autonomy in their professional practice, develop good interpersonal relations and a high sense of responsibility, which makes them attend work even if they feel patients, even when submitted to high work demands (Cho et al., 2016; Johns, 2009).

High control confers a positive perception of the work, but triggers higher personal collection and high mental fatigue, nervousness and decreased quality of life and, consequently, difficulties of being absent, provoking presenteeism (Pereira et al., 2014). Workers who believe in the appreciation of their presence by the organization have in presenteeism an act of citizenship, which is institutionalized and finds in the sense of responsibility a motivation to be presenteeist.

For Barcaui and Limongi-França (2014), social support at work empowers the worker to cope with work stress arising from the high psychological demands of work. In this study, the results contradict the hypothesis of support moderation (Hypothesis H4b) in the relationship between psychological demand of work and presenteeism, although the support of the bosses has a direct relationship with presenteeism.

An explanatory hypothesis for these results may be the fact that institution researched is of a public nature. The worker therefore has stability in employment, which promotes safety at work; in addition, there is a rotation in the intermediate positions of leadership. The literature review shows a lack of studies on the subject in the public service, especially within the Federal Institutes of Education, making it impossible to compare the results presented here with other studies.

In summary, the objectives of the research were achieved and provide evidences of the moderation power of work control in the relation between psychological demands of work and presenteeism. The results also have repercussions on the applicability of the DCSS model as an indicator of control as a protective factor against presenteeism. Thus, this

study covers the field of study on the causes and consequences of presenteeism, both for the work and for the worker.

Regarding the limitations of the research, it should be emphasized that this is a cross-sectional study and, therefore, one cannot make inferences about the causality of the variables studied, nor can one explore the effects over time. To explore the causality between these variables, the data should have been collected at different times (Sonntag, Binnewies, & Mojza, 2010). In addition, studies should adopt longitudinal research designs.

Another limitation was the collection of data extracted exclusively by self-report, which increases the risk of bias between measures. However, this study used the recommendations of Podsakoff et al. (2003). The common variance of the method was tested, obtaining a good adjustment index, which shows that this was not an impediment to the development of the moderation analyzes.

It is suggested that this study be replicated in other sample groups and other organizational realities, using triangulation of methods and, if possible, using a longitudinal and experimental design, or that the data collection be performed at different times and situations.

This study contributes to the investigation of the organizational antecedents (demands of work) and personal (control of work and support of the boss) on presenteeism. Providing greater control of the worker over his/her work and reducing the influence of the high demands of work can mean actions of health promotion in the organizations and, therefore, represent greater productivity, emphasizing the influence of the control that the worker has on his/her activity in this process.

It is hoped that the results of this study will contribute to the formulation of professional development programs and the adoption of healthier management practices, which will develop actions that enable workers to self-regulate and better manage their health. In addition, it is expected that this study may support individual and organizational actions that promote health and quality of life at work.

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