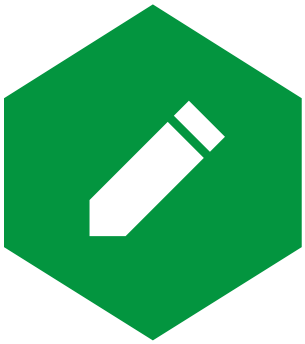

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Work Design Predictive Model

AMALIA RAQUEL PÉREZ-NEBRA, MARINA GREGHI STICCA, FABIANA QUEIROGA, AND NÚRIA TORDERA

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Brazilian Teachers' Absenteeism: Work Design Predictive Model

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Abstract: Sickness-related absenteeism in teachers represents financial, social, and human costs. This study aimed to analyze the relationship between work characteristics and lengths of absence. The main hypothesis is that different work characteristics are predictors of different lengths of absenteeism. In total, 1,530 teachers participated in the study. The results supported the main hypothesis and suggested that physical demands, task identity, and job complexity are useful to explain absenteeism. It is concluded that analyzing different absenteeism lengths makes it possible to broaden the phenomenon discussion and qualify the relationship between work characteristics and absenteeism. This study has implications for interventions to reduce absenteeism.

Keywords: Work Context, Sickness Absence, Task Characteristics, Work Characteristics, Work Design

Introduction

Absenteeism can be defined as non-attendance when an employee is scheduled to work (Price 1997). It is a phenomenon that has financial, social, and human impacts. The financial cost is part of the public policy agenda in different countries, mainly in impoverished countries, while the social cost is the social repercussion of the teacher's work, and the human cost is the result of the illness. Teacher absenteeism is a globally growing concern and has consequences for governments, schools, institutional managers, teachers, and students, along with a decrease in education quality (Obiero, Mwebi, and Nyang'ara 2017).

Sickness Absenteeism

Sickness absenteeism refers to absences from work due to reasons related to health problems. According to different reviews (Čikeš, Ribarić, and Črnjar 2018; Møller 2019; Steers and Rhodes 1978; Brooke 1986), absenteeism can be caused by demographic, personal, attitudinal, health-related, organizational, and work-related determinants. Several different measures of sick leave can be found, and it is deeply dependent on the social insurance legislation (Hensing et al. 1998). Absenteeism studies have been conducted in Western, Educated, Industrialized, Rich, and Democratic (WEIRD) countries (Henrich, Heine, and Norenzayan 2010; Muthukrishna et al. 2020) with different absenteeism approaches in specific sectors. Hensing et al. (1998) suggest five different ways to measure sickness absence, and they suggest applying one or more measure according to the aim of the study (Mckeown and Furness 1987). In the present case, the total duration of the absence is the major interest. As teachers that work directly with children and need substitution in the case of absence, it was decided to map absence lengths based on local insurance legislation.

Absenteeism is a behavioral variable with organizational outcomes (Price 1997; Čikeš, Ribarić, and Črnjar 2018); it is easily converted into costs (Saksvik, Grødal, and Karanika-Murray 2017; Čikeš, Ribarić, and Črnjar 2018; Mckeown and Furness 1987), and it has different nuances.

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It is sometimes considered a variable of counterproductive behavior at work or a variable of malaise (Warr and Nielsen 2018; Čikeš, Ribarić, and Črnjar 2018). Furthermore, it is categorized as (in)voluntary (Brooke 1986; Steers and Rhodes 1978), where choice and legitimation are the basis for this distinction and influence the choice between absenteeism and presenteeism (Cancelliere et al. 2011; Saksvik, Grødal, and Karanika-Murray 2017). Other categorizations and adjustments are made mainly due to the limitations of statistical analysis. No segmentation proposals based on organizational policies or context were found.

Absenteeism, which is a complex phenomenon, has been studied by different lines of thought that can be complementary. Organizational and work psychology has focused more on individual factors that can explain behavior (Čikeš, Ribarić, and Črnjar 2018; Saksvik, Grødal, and Karanika-Murray 2017), while business management focuses on organizational variables to explain it.

At the individual level, the demographic and personal variables have contradictory results (Pitts 2010; Parker, Morgeson, and Johns 2017; Čikeš, Ribarić, and Črnjar 2018; Gosselin, Lemyre, and Corneil 2013; Obiero, Mwebi, and Nyang'ara 2017). The organizational models that seek to explain absenteeism focus predominantly on the work characteristics that are recognized predictors of organizational outcomes (Parker, Morgeson, and Johns 2017; Parker, Knight, and Ohly 2019). In this sense, different sickness absenteeism models emphasize the importance of work characteristics by using slightly different names (Gosselin, Lemyre, and Corneil 2013; Hackman and Oldham 1976; Guise 1988; Brooke 1986; Steers and Rhodes 1978). However, no studies were found using the most recent work design model proposed by Morgeson and Humphrey (2006), which includes both motivational and demanding work characteristics. The educational field is also under-researched, and there are no studies from South America on absenteeism published in major journals. Thus, this study aims to analyze the relationship between work characteristics and absenteeism in Brazil with teachers in different lengths of absenteeism.

Work Characteristics as a Predictor of Sickness Absenteeism

Work design that includes work characteristics was chosen (Parker, Knight, and Ohly 2019) as an antecedent because it is classically associated with absenteeism. Work design is defined as "the study, creation, and modification of the composition, content, structure, and environment within which jobs and roles are enacted" (Morgeson and Humphrey 2008, 47). The work design is based on the job characteristics model by Hackman and Oldham (1976), which proposes that core job dimensions promote individual motivation, satisfaction, and performance by critical psychological states experienced as significant (Parker, Morgeson, and Johns 2017). These characteristics were adopted to explain behaviors at work and organizational results, such as turnover, motivation, and job satisfaction. Steers and Rhodes' (1978) absenteeism emblematical model is quite similar in their premises.

The perspective of job characteristics has also been supported by studies in the area of education (Guise 1988). However, in this context, absenteeism is explained by the demand and the non-motivational work characteristics as the original authors had proposed (Parker, Morgeson, and Johns 2017). The results of the study correlate absenteeism in the context of education with the absence of material support (Croon et al. 2015), poor working conditions, lack of qualification of the technical teaching staff, lack of appropriate space for reflection on teaching practice, triple working hours, lack of control over time, behavioral problems of students (lack of limits and education, relationship difficulties), excessive bureaucracy, implementation of new educational initiatives, difficulty in relationships with supervisors, work organization, lack of recognition, and problems in the physical environment (ergonomics, furniture, equipment and noise, and temperature conditions) (Diehl and Marin 2016; Gasparini, Barreto, and Assunção 2005; Mazzola, Schonfeld, and Spector 2011).

Thus, a proposal that considers both motivational and demanding characteristics of the work should be considered in research in educational contexts (Demerouti et al. 2001).

Morgeson and Humphrey's (2008, 2006) proposal is a comprehensive model that describes the work design from four dimensions of characteristics: task, knowledge, social, and contextual. Part of these characteristics is motivational, and the other part is demandant.

According to Morgeson and Humphrey (2006), task characteristics include how the work is conducted and the nature of the task associated with a particular job, in this case, teachers. Knowledge characteristics describe the kinds of knowledge that are demanded or challenged by the job. Social characteristics reflect the magnitude of social exchange needed and offered by the task. Finally, contextual characteristics describe the physical factors demanded or offered by the job as comfort, physical demands, and technology.

Among the models that explain the relationship between work characteristics and absenteeism, including demands, are the models demand-control and jobs demands-resource (JD-R) (Parker, Morgeson, and Johns 2017). The second model advances historically in relation to the first and will be the one used in the present work. The JD-R explains absenteeism from the relationship between motivation and tension and has been supported in the literature (Parker, Knight, and Ohly 2019). According to the model, all jobs include demands and resources. Demands can be defined as aspects of work that "require sustained physical or mental effort and are therefore associated with certain psychological and physiological costs" (Demerouti et al. 2001, 501). While resources are defined as aspects of work that are either or (a) functional to achieve work goals; (b) reduce work demands and the associated physiological and psychological costs; and (c) stimulate personal growth and development. Examples of resources include the support from colleagues and supervisors (who help achieve goals), work autonomy (which reduces demands), and performance feedback (which can facilitate learning).

The JD-R model integrates two basic psychological processes. First, the stress process, which is characterized by excessive demands and lack of resources, can generate negative consequences, such as poor performance and absenteeism (Schaufeli, Bakker, and van Rhenen 2009). In general, when demands are high and not compensated for by resources, the worker's energy is gradually drained, leading to negative consequences for the individual and the organization. The second motivational process is characterized by the existence of abundant resources that generate positive consequences.

Thus, considering that absenteeism has different categorizations, absenteeism of short length and absenteeism of long length are different and therefore will have different predictors. Studies indicate that motivational and demanding variables are related to different types of absenteeism (Bakker et al. 2003; Mathieu and Kohler 1990b; Schaufeli, Bakker, and van Rhenen 2009), so the first hypothesis of the work is suggested:

- H1: Different work characteristics will be predictors of different categories of absenteeism.

Studies also suggest a relationship between resource variables and low absenteeism: task characteristics (autonomy, task variety, task identification, performance feedback), social characteristics (social relationships, social support), and context characteristics (comfort at work) (Humphrey, Nahrgang, and Morgeson 2007; Parker, Knight, and Ohly 2019; Gosselin, Lemyre, and Corneil 2013; Steers and Rhodes 1978; Brooke 1986). However, job demand variables are related to more days of absence, and there is evidence that knowledge characteristics (job complexity—high responsibility) and context characteristics (physical demands) show inconclusive results with absenteeism (Parker, Knight, and Ohly 2019; Gosselin, Lemyre, and Corneil 2013; Humphrey, Nahrgang, and Morgeson 2007). Also, absenteeism seems to be more related to work design in precarious working conditions (Parker, Knight, and Ohly 2019), and organizational variables showed a weaker explanatory power in the models (Gosselin, Lemyre, and Corneil 2013). Based on this data, the following hypotheses of the work were proposed:

- H2: Resource variables will be negative predictors of absenteeism.
- H3: Demand variables will be positive predictors of absenteeism.

Thus, this study aims to examine the relationship between teachers' work characteristics and sickness absenteeism. The final goal is to assist public policy makers in improving work conditions that might foster health and reduce sickness absenteeism of the teachers. Teachers' absenteeism is a public social problem, and data from poor and less developed countries are scarce.

Method

Participants

A total of 3,495 elementary education teachers from the Brazilian Federal District, distributed in fourteen regional offices and headquarters, responded to the survey. Of these, filters were applied to locate class teachers: to be working in the classroom (that is, not having responded as "I don't work as a teacher" or "other"), not being readapted or in the process of readaptation (which also implies leaving the classroom), having been absent in the last six months for less than thirty days, and being in a school unit and not showing missing values in these answers. It was decided to analyze class teachers who were absent for less than thirty days, considering that absenteeism above this value can characterize a leave due to chronic illness (Pęciłło 2015) or the individual can be sick several times during a year (Hensing et al. 1998) and that there are specific policies for this type of leave in the organization. The sample was therefore composed of 1,530 class teachers.

Respondents were predominantly women (72.4%), most of whom were married (68.0%) or single (19.4%). Most of them were working in the initial grades (46.9%), i.e., from preschool to the 4th grade (known as activity teachers), followed by language teachers (28.0%), human sciences (10.2%), natural sciences (7.9%), and mathematics (6.4%).

Among the profile data, it should also be noted that the participants were equally divided on teacher training at the certificate level (in Brazil, technical level). Almost all teachers have at least university graduation as the last level of education (96.3%). The average age of the participants was 43.48 years (SD = 7.86).

The mean time of experience of teachers at the Department of Education of the Federal District (SEEDF) is also high (14.04 years; SD = 8.21), but experience in the current school indicates a level of teacher turnover. It is interesting to note the teachers who responded that they had been in the school unit for up to one year (19.7%), while only four (i.e., 0.1%) had been in the same school unit for thirty years or more.

The SEEDF is the smallest Department of Education in Brazil. It contains 692 public schools at different levels and types, with 35,000 employees. It was founded in 1962, two years after the new capital, Brasília, was inaugurated.

Instruments

Participants indicated by self-report how many days they

Procedures

Data collection occurred both on paper and online. There was no significant difference in any of the personal or professional variables of the present study regarding the type of data collection performed; therefore, it was decided to group all data without distinction of the type of collection.

The research had several strategies of internal dissemination (circular letters, web page, and word-of-mouth), and it took two years of data collection until there was a significant adherence of teachers to the research. However, most of the participants responded to the online questionnaire, which was available for two weeks. During this period, there were some issues, such as the publication of an ordinance limiting the number of absentees by attendance at work and a strike by the teachers. These were reasons that led to the change from paper-and-pencil collection to the online collection, which represented 85.3 percent of the survey responses.

Data Analysis

The first step in the analysis of the absenteeism data was to compare it with the organization's data. The mean of the last six months of the complete sample was 11.02 days (SD = 28.22; Mo = 0; Me = 2.0). The report on the organization's absenteeism profile revealed an index of sickness-related absenteeism in the same period of 8.31 days (SEEDF Directorate of Health Epidemiology 2018). This comparative data provided researchers with additional confirmation that the self-reported data were a reliable alternative for obtaining this information.

The data on sickness-related absenteeism had to be analyzed according to the nature of the variable. It tested the possibility of using raw data. The normality test of the complete sample by standardized asymmetry value (i.e., divided by the error) was 134.00, and kurtosis was 322.09, i.e., results that make linear analyses unfeasible. The assumption of a Poisson distribution was also tested, but the test result was significant, implying a violation of the assumption.

The literature that analyzes sickness absenteeism presents different forms of treatment and profiling that is based on an annual measure: by quartiles (van Rhenen et al. 2008), zero or more than one absence, excluding chronically ill people (Pęciłło 2015) (in this case, it was not clear what would be defined as chronically ill, but it can be understood as above thirty days of absenteeism by the context), above and below fifteen days of leave (Framke et al. 2016; Tüchsen, Christensen, and Lund 2008), and percentage of absence per group, in which case it was completed with two levels of analysis (Väänänen et al. 2008). This data together suggest that an alternative is to segment the sample, and it depends partly on the available data (e.g., quartiles or many cases of zero absenteeism). Again, mapping lengths based on practice is a viable alternative.

Despite the data available in the literature, the institution's practice is to differentiate between work leaves. According to the national decree, absences under fifteen days (fourteen days or less) do not require an expert medical report, and longer absences are submitted to this procedure. Bimonthly absences of up to three days can be registered directly by the school on the timesheet. For medical certificates of more than three days and less than fourteen days, the professional needs to go and change the certificate in the responsible area and then present it to the school board (i.e., school director). Certificates of longer than fifteen days need to be approved in the health sector and undergo another type of procedure.

After the segmentation of fewer than thirty days, normality tests suggested problems (asymmetry of 30.81 and kurtosis of 29.56 for both types of analysis). Therefore, sickness-related absenteeism was segmented into five length profiles: Profile 0—zero absences (39.2% of the sample), Profile 1—between one to three absences (28.4%), Profile 2—between four to seven absences (seven considering that the annual double would be fourteen days of absenteeism; 15.9%), Profile 3—between eight to fourteen absences (9.9%), and Profile 4—between fifteen to twenty-nine absences (6.5%).

Regarding the work design, two categories presented normality issues (Information Processing and Skill Variety, with standardized asymmetries of -21.83 and -23.41, respectively). Although the problem of normality exists, Field, Miles, and Field (2012) suggest a visual inspection of the variables depending on the sample size, and there were no bimodal cases or "U" curves. The reliability analyses were performed using the SPSS.

To examine the relationship between work design and sickness-related absenteeism, pseudo R squares and probability tests with 95 percent confidence intervals were performed with multinomial logistic regression using Profile 0 (zero absences) as a comparison reference. Spearman correlation was conducted as the variable is not normal.

Results

Initially, the correlations between sickness-related absenteeism[2] among teachers and categories of work design were analyzed. The work design factors that least correlated with the absenteeism of the class teachers were those related to the knowledge and social support characteristics, but there are exceptions. In these cases, even though the magnitudes are also not expressive, the significance of the correlations indicates that the lack of support tends to increase teachers' absences.

On the other hand, almost all the factors of task characteristics dimension and physical demands were significantly associated with absenteeism. The factors related to the perception of autonomy (when work scheduling rho = -0.14; decision-making and carrying out work rho = -0.12; $p < 0.01$ for both), task identity (rho = -0.13; $p < 0.01$), and feedback from job (rho = -0.08; $p < 0.01$), in which the correlations were significant and inverse. This information reveals a tendency for absenteeism to be greater when teachers perceive less autonomy or do not clearly understand how the work should be performed. Finally, the negative perception of the working context also seems to affect the absences of teachers. This can be seen in the correlations of the comfort factor (rho = -0.10; $p < 0.01$) and the working conditions (rho = -0.12; $p < 0.01$). Moreover, the higher the perception of physical demands, the greater the number of absences (rho = 0.12; $p < 0.01$).

The correlations observed point to coherence between the constructs and show the potential of the work design in explaining absenteeism among teachers. This information encouraged the performance of logistic regressions with the insertion of the Work Design Questionnaire (WDQ) factors as predictive variables of absenteeism, which was segmented into four lengths (as explained in the method). The logistic regression model tested explained about 8 percent of the absenteeism variance (Pseudo $R^2 = 0.08$). Next, the significant factors for each segment of absenteeism are presented. The first of them is Model A (Profile 1—between one to three absences), illustrated in Table 1.

Table 1: Linear Logistic Regression Predicting Absenteeism—Model A (Profile 1—One to Three Absences)

Variable	*B (SE)*	*Odds Ratio*	*(95% CI)*
(Constant)	.02 (.58)		
Task Characteristics			
Work scheduling autonomy	-.16 (.10)	.85	(.70-1.03)
Decision-making/working method autonomy	.02 (.11)	1.02	(.83-1.25)
Task variety	.17 (.10)	1.19	(.98-1.45)
Task significance	-.01 (.11)	1.00	(.81-1.23)
Task identity	-.20 (.10)*	.82	(.67-1.00)
Feedback from job	.10 (.09)	1.11	(.94-1.31)
Knowledge Characteristics			
Job complexity	.15 (.07)*	1.16	(1.02-1.31)
Information processing	-.11 (.13)	0.90	(.70-1.15)
Problem-solving	.01 (.16)	1.02	(.75-1.37)
Specialization	.04 (.11)	1.04	(.85-1.28)

[2] Correlations were made with the absenteeism profiles.

Variable	*B (SE)*	*Odds Ratio*	*(95% CI)*
Social Characteristics			
Social support	-.03 (.11)	.97	(.79-1.19)
Interdependence	.07 (.07)	1.07	(.94-1.23)
Interaction outside the organization	-.03 (.07)	.97	(.85-1.10)
Feedback from others	-.01 (.08)	1.00	(.86-1.16)
Working Context Characteristics			
Comfort at work	-.01 (.06)	.99	(.88-1.12)
Physical demands	-.01 (.06)	.99	(.89-1.11)
Working conditions	-.05 (.08)	.95	(.81-1.12)
Equipment use	-.06 (.08)	.94	(.81-1.09)

Note: Pseudo $R^2 = 0.08$ (Cox and Snell), 0.09 (Nagelkerke); gl = 1; SE = standard error; CI = confidence interval; $*p < 0.05$
Source: Pérez-Nebra et al.

For this segment of absences (between one to three absences), the factors of task identification and job complexity showed significant predictive power ($p < 0.05$). Consistent with what had already been observed in Spearman's correlations, the higher the perceived job complexity (β = 0.146) and the lower the perceived role-clarity (β = -0.201), the higher the absences of this short length tend to be. This factor is also relevant to explain Model B (Profile 2—between four to seven absences) presented in Table 2.

Table 2: Linear Logistic Regression Predicting Absenteeism—Model B (Profile 2—Four to Seven Absences)

Variable	*B (SE)*	*Odds Ratio*	*(95% CI)*
(Constant)	-.91 (.73)		
Task Characteristics			
Work scheduling autonomy	-.17 (.12)	.85	(.85-1.06)
Decision-making/working method autonomy	.06 (.13)	1.06	(1.06-1.37)
Task variety	.14 (.12)	1.15	(.91-1.47)
Task significance	-.06 (.13)	.94	(.73-1.21)
Task identity	-.26 (.12)*	0.77	(.61-.98)
Feedback from job	.14 (.10)	1.14	(.94-1.40)
Knowledge Characteristics			
Job complexity	.01 (.08)	1.01	(.86-1.18)
Information processing	.05 (.16)	1.05	(.77-1.42)
Problem-solving	.29 (.19)	1.34	(.92-1.96)
Specialization	-.13 (.13)	.88	(.69-1.13)
Social Characteristics			
Social support	-.07 (.13)	.93	(.73-1.19)
Interdependence	.16 (.08)	1.17	(1.00-1.38)
Interaction outside the organization	-.05 (.08)	.95	(.82-1.11)
Feedback from others	-.10 (.09)	.91	(.76-1.09)
Working Context Characteristics			
Comfort at work	-.17 (.08)*	.85	(.73-.99)
Physical demands	.18 (.07)**	1.19	(1.04-1.36)
Working conditions	-.03 (.10)	.97	(.79-1.19)
Equipment use	-.08 (.09)	.92	(.77-1.10)

Note: Pseudo $R^2 = 0.08$ (Cox and Snell), 0.09 (Nagelkerke); gl = 1; SE = standard error; CI = confidence interval; $*p < 0.05$ $**p < 0.01$
Source: Pérez-Nebra et al.

Besides task identity (β = -0.259), work context factors related to comfort (β = -0.168) and physical demands (β = 0.175) were significant to predict the segment between four to seven absences ($p < 0.05$). For the first two factors, the impact is negative, and the physical demands factor is directly related to the teachers' absenteeism. This last factor was also important to explain the Model C segment (Profile 3—between eight to fourteen absences), shown in Table 3.

Table 3: Linear Logistic Regression Predicting Absenteeism—Model C
(Profile 3—Eight to Fourteen Absences)

Variable	*B (SE)*	*Odds Ratio*	*(95% CI)*
(Constant)	.26 (.82)		
Task Characteristics			
Work scheduling autonomy	-.15 (.13)	.87	(.66-1.14)
Decision-making/working method autonomy	-.15 (.15)	.86	(.64-1.15)
Task variety	.27 (.15)	1.32	(.99-1.75)
Task significance	-.09 (.15)	.91	(.68-1.21)
Task identity	-.08 (.14)	.93	(.70-1.22)
Feedback from job	-.04 (.12)	.96	(.77-1.22)
Knowledge Characteristics			
Job complexity	.11 (.10)	1.12	(.92-1.36)
Information processing	.10 (.18)	1.10	(.77-1.58)
Problem-solving	-.11 (.23)	.90	(.58-1.40)
Specialization	-.02 (.15)	.98	(.72-1.32)
Social Characteristics			
Social support	-.23 (.14)	.80	(.60-1.05)
Interdependence	.02 (.10)	1.02	(.84-1.24)
Interaction outside the organization	-.01 (.09)	1.00	(.83-1.20)
Feedback from others	-.14 (.11)	.87	(.69-1.08)
Working Context Characteristics			
Comfort at work	-.01 (.09)	.99	(.82-1.19)
Physical demands	.23 (.08)**	1.26	(1.08-1.48)
Working conditions	-.20 (.13)	.82	(.64-1.05)
Equipment use	-.03 (.11)	.97	(.78-1.21)

Note: Pseudo R^2 = 0.08 (Cox and Snell), 0.09 (Nagelkerke); gl = 1; SE = standard error; CI = confidence interval;
*$p < 0.05$ **$p < 0.01$
Source: Pérez-Nebra et al.

High physical demand had a significant prediction ($\beta = 0.232$; $p < 0.05$) for the segment between eight to fourteen absences. This was the only factor that significantly explained this period of absences among the class teachers and the next segment (Profile 4—between fifteen to thirty absences), as shown in Table 4.

Table 4: Linear Logistic Regression Predicting Absenteeism—Model D
(Profile 4—Fifteen to Thirty Absences)

Variable	*B (SE)*	*Odds Ratio*	*(95% CI)*
(Constant)	-1.65 (1.00)		
Task Characteristics			
Work scheduling autonomy	-.30 (.16)	.74	(.54-1.02)
Decision-making/working method autonomy	.18 (.18)	1.19	(.84-1.70)
Task variety	.22 (.18)	1.24	(.88-1.76)
Task significance	-.02 (.18)	.98	(.68-1.39)
Task identity	-.11 (.17)	.90	(.65-1.25)
Feedback from job	.06 (.14)	1.07	(.81-1.41)
Knowledge Characteristics			
Job complexity	.18 (.12)	1.20	(1.00-1.51)
Information processing	-.10 (.22)	.91	(.59-1.38)
Problem-solving	-.00 (.28)	1.00	(.58-1.71)
Specialization	.10 (.19)	1.10	(.77-1.59)
Social Characteristics			
Social support	-.22 (.17)	.80	(.57-1.12)
Interdependence	-.01 (.12)	.99	(.78-1.25)
Interaction outside the organization	-.15 (.11)	.86	(.69-1.07)
Feedback from others	-.08 (.13)	.92	(.71-1.19)

Variable	*B (SE)*	*Odds Ratio*	*(95% CI)*
Working Context Characteristics			
Comfort at work	.09 (.11)	1.09	(.89-1.35)
Physical demands	.29 (.09)**	1.33	(1.11-1.61)
Working conditions	-.20 (.15)	.82	(.62-1.10)
Equipment use	.04 (.13)	1.04	(.81-1.34)

Note: Pseudo $R^2 = 0.08$ (Cox and Snell), 0.09 (Nagelkerke); gl = 1; SE = standard error; CI = confidence interval; *$p < 0.05$ **$p < 0.01$

Source: Pérez-Nebra et al.

Table 4 shows that the perception of physical demand had a significant prediction ($\beta = 0.288$; $p < 0.01$). This piece of data seems to reveal that as the number of absences increases, the predictive power of the other characteristics of the work decreases, but the perception of physical demands remains. In other words, the higher number of absences among the class teachers seems to be explained more by the perceived physical demands than by the other characteristics of their work.

Thus, the results support this study's H1, in which different lengths of absenteeism reveal work characteristics that are predictors for absenteeism. In addition, they support H2 (resource characteristics reduce absenteeism) and H3 (demand characteristics increase absenteeism).

Discussion

The objective of this study was to analyze the relationship between work characteristics and absenteeism of different lengths among teachers in Brazil. One of the first data points that stood out was the number of teachers who are in school units but do not work as class teachers. The hypotheses of the study gained support. It was verified that lengths of absenteeism have different work characteristics as predictors (H1), resources function as protectors for absenteeism (H2), and demands are detrimental to absenteeism (H3). Although the results support the hypotheses, the fact that different types of demands and resources predict different lengths of absenteeism brings a novel element to this study, highlighting the importance of working with categories of absenteeism that are in line with organizational practices and policies.

Only one task characteristic, task identity, was a negative predictor in groups with few absences (Humphrey, Nahrgang, and Morgeson 2007). In general, knowledge characteristics are incapable of predicting absenteeism except for job complexity, which presents a positive relationship with absenteeism, i.e., the greater the perception of complexity, the higher the rate of absenteeism, contrary to what Humphrey, Nahrgang, and Morgeson (2007) found. Job complexity was also described in another study as a positive predictor of presenteeism at work (Pérez-Nebra, Queiroga, and Oliveira 2020), supporting the result in the present study.

Social characteristics were not able to predict absenteeism. This is unexpected since different studies and interventions in absenteeism have found relationships between absenteeism or presenteeism and social characteristics (Parker, Knight, and Ohly 2019; Gasparini, Barreto, and Assunção 2005; Cancelliere et al. 2011; Humphrey, Nahrgang, and Morgeson 2007), particularly for an audience that has a fundamentally emotional job (Yin, Huang, and Lv 2018). Grant and Parker (2009) suggest that restrictions on work characteristics may be moderated by the opportunity effect of helping users of the service offered, consistent with the proposal by Knight and Parker (2019), who suggest that certain work characteristics occur only in extremely precarious contexts. In this sense, the context may act as a moderator between social characteristics and absenteeism. Another analysis refers to the absence of the explanation at the individual level of analysis and shifts attention so that the group level can impact the variable and the phenomenon (i.e., by the school the individual works) (Mathieu and Kohler 1990a; Väänänen et al. 2008). Also, the fact that relational variables do not appear as predictors breaks a series of paradigms at the individual level and the paradigm that individual social relationships are the most significant predictors in this type of work.

The contextual characteristics negatively predict the group of the average length of absences (comfort) and positively the absenteeism in the groups of average and higher lengths of absences. Comfort at work and physical demands were also found in other studies with teachers (Pérez-Nebra, Queiroga, and Oliveira 2020). According to Brazilian culture, it is common for elementary school teachers to carry children on their lap, which can intensify their physical demands.

This work contributes by testing the complete proposal of Morgeson and Humphrey (2006) in the Brazilian version (Borges-Andrade et al. 2019), expanding studies already conducted on the relationship between work design and absenteeism. Furthermore, the JD-R model was considered for the construction of the hypotheses. As a result, it was possible to advance the studies already conducted that fundamentally explained absenteeism by demand variables, in addition to mapping resources variables and those protective of absenteeism. The study of absenteeism progressed considering the lengths of absences and their relationship with work design aligned with organizational policies and practices. Finally, the study relied on an extensive sample of class teachers in a context with no literature report available.

Practical Implications and Recommendations

From a practical point of view, it was believed that this work has implications for school organizations at the level of management analysis and public policy. Firstly, it points out why the different nuances of the phenomenon of absenteeism must be understood. Secondly, it identifies different variables that can both foster (job complexity, physical demand) and reduce (task identification, comfort) absences. In this sense, increasing task identification and comfort and reducing job complexity perception and physical demands in the educational field will reduce absenteeism and, consequently, the public costs associated with it. Moreover, a system for monitoring and assessing risks at work and policies associated with work redesign can be implemented to adopt preventive measures for absenteeism (Badubi 2017).

From the point of view of public policies, reducing the ratio of the number of students per teacher in the initial grades can be a protective strategy to reduce the cost of the physical demands of these teachers in the school context; because physical demand is responsible for the largest number of absences and the present sample has a bias towards “activities teachers” (i.e., the first cycle of elementary school and kindergarten), this can be done in a complementary way. Moreover, from a managerial perspective, establishing psychological contracts of what is expected from the employee from the beginning (Schalk and Rousseau 2012) and defining expectations can be a good practice to remedy the problem in its initial stages.

Limitations and Prospective Studies

This work is not without limitations. Besides the natural limitations that a study with a cross-sectional and self-report design may have, it presents a sample bias for female teachers and activity teachers. While this is true, it is also the reality of most schools, as they are mostly composed of women from the early grades of elementary school and kindergarten. Although control variables could be included in the study to identify the school, size, geolocation, national evaluation, and public attendance of the schools, teachers had a strong resistance toward any possible identification of them. Individual variables could also be included as a usual predictor of absenteeism. However, the individual predictor is usually related to social identity and other social variables involved, which is out of the scope of this work. Finally, the results found here are limited to educational contexts similar to a Brazilian one, where it is known to aggregate a series of particularities such as that of WEIRD countries. Thus, to make generalizations about the job characteristics that predict absenteeism, it is necessary to document their occurrence in other contexts and samples.

Studies that could include more contextual variables of the school and conduct multilevel analysis of absenteeism phenomena (as an absenteeism climate in Väänänen et al. 2008) could improve and test other models. This is a methodological aspect that deserves special attention in

view of the hierarchical nature of the educational context. Moreover, combining absenteeism and presenteeism, as presented in different research models, could clarify the absenteeism phenomena. Finally, as Gosselin, Lemyre, and Corneil (2013) proposed, a more comprehensive approach, where absenteeism and presenteeism are combined and predicted by individual, contextual, and organizational variables, could be tested in the teachers' context.

Conclusion

As initially pointed out, absenteeism is a social problem with several costs and needs to be observed as an organizational symptom. Despite the reported limitations, the results of this study, which described the relationship between work characteristics and absenteeism, expand the study of absenteeism in several directions. First, by using a demand and resource model in different lengths of absenteeism, it was able to show that different lengths have different predictors, showing the importance of aligning with organizational policies and practices to establish categories of absenteeism in a non-WEIRD context. While the magnitudes observed for the prediction values express the difficulty of capturing such a complex phenomenon, they also follow a pattern that has already been found in other studies that analyzed absenteeism (Hensing et al. 1998; Humphrey, Nahrgang, and Morgeson 2007).

Also, the results of this work allowed for practical implications for management by analyzing work characteristics (i.e., variables that can be modified) and presenting different strategies depending on the length of absenteeism that the organization has. Namely, for small lengths of absenteeism, an increase in task identity and a decrease in job complexity is preferred; for longer lengths of absenteeism, it is preferable to increase comfort and decrease physical demands. Finally, by relying on an extensive sample of teachers, the results of this work can be used as a basis for designing both preventive (e.g., using people management practices oriented to support employees) and treatment interventions (anticipating changes in public policies or providing physiotherapy professionals); it also offers a new perspective in favor of healthier teaching staff at work.

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