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Telework during the Covid-19 pandemic and the work-nonwork conflict

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Abstract

Purpose – This study aims to analyze the relationship between telework and teleworkers' characteristics and the work-nonwork conflict (WNWC) in the Brazilian context, investigating time spent in eight nonwork dimensions and the more affected dimensions.

Design/methodology/approach – The study was quantitative and descriptive. A survey was conducted with 299 professionals' teleworking in Brazil. Data analysis was conducted through descriptive statistics, Pearson's correlation and analysis of variance.

Findings – Results show diversified interests other than work and family among teleworkers, variation within the affected nonwork dimensions in the WNWC, and that teleworkers' WNWC is negatively associated with time flexibility and manager support and positively associated with individual preference for segmentation as a boundary management strategy.

Research limitations/implications – The study highlights the need to include more nonwork aspects in telework studies to influence organizational practices. The main limitation is the nonprobabilistic sample.

Practical implications – Knowing more about teleworkers' WNWC will help organizations improve lives by implementing practices and building a cultural environment that preserves nonwork time.

Social implications – The study reinforces demands from new family arrangements and an aging society: organizations have to prepare to have teleworkers who want or need to dedicate time to interests besides family or children.

Originality/value – It progresses towards a broad understanding of nonwork besides family to understand teleworkers' WNWC.

Keywords Telework, Work-family conflict, Work-nonwork conflict, Boundary theory

Paper type Research paper

1. Introduction

Although telework has been studied since the 1970s (Allen, Golden, & Shockley, 2015), the Covid-19 pandemic brought unprecedented challenges for at least 8.6 million Brazilians (IBGE, 2020). Telework was done initially full-time, regardless of the home infrastructure or people's previous experience. Schools were closed and the recommendation was not to leave home or receive other people. In March 2020, several Brazilian cities decreed quarantine, aiming at social isolation to stop the virus (OMS, 2020).

The spatial and temporal boundaries between work and nonwork were eliminated for those who could telework at home. People's private lives were possibly invaded, and Brazilian laws are very ambiguous when it comes to overtime worked at home (Pereira, Barbosa, & Saraiva, 2021).

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With economic uncertainty enhanced by the pandemic (unemployment rose to 14.4% in 2020 (IBGE, 2020)), many people tried to be the ideal worker, who prioritizes professional life (Bailyn, 2006). But at which personal cost, not dedicating themselves as much as they would like to which nonwork dimensions? It is necessary to deepen the academic understanding of the work-nonwork conflict (WNWC) for teleworkers, recognizing it as a dilemma that affects people, organizations and society systemically (Bailyn, 2006).

Although nonwork has been treated as a synonym for family in studies about work and nonwork since the 1980s (Greenhaus & Beutell, 1985), it is necessary to expand nonwork besides family because people dedicate themselves to other dimensions too, such (Keeney, Boyd, Sinha, Westring, & Ryan, 2013; Oliveira, 2017). Only two studies were found about WNWC (Keeney *et al.*, 2013; Oliveira, 2017), not focused on teleworkers. It enhances the need to analyze whether the time spent teleworking at home interferes with the desired dedication to different nonwork dimensions, as well as whether there are telework or teleworkers' characteristics that contribute to this interference.

Brazilian teleworkers increased to 8.6m people in May 2020 due to the pandemic (IBGE, 2020), and should keep growing due to organizations' financial advantages, mainly by reducing accommodation costs (Daniels, Lamond, & Standen, 2001). This context emphasizes the need to contribute academically, expanding the investigation from work-family conflict (WFC) (Greenhaus & Beutell, 1985) to WNWC (Keeney *et al.*, 2013; Oliveira, 2017) for teleworkers. This step is essential to support managers in improving teleworkers' well-being and, consequently, society's well-being. People are more productive and satisfied when they can dedicate themselves to different nonwork dimensions (Bailyn, 2006; Hirschi, Herrmann, Nagy, & Spurk, 2016) – and telework at home can make this dedication difficult. Concerning the Covid-19 pandemic, three studies explored only WFC and indicated difficulties to reconcile different roles at home (Lemos, Barbosa, & Monzato, 2021; Pandini and dos Santos Pereira, 2020; Leite & Lemos, 2020).

Due to the lack of WNWC studies for teleworkers (Oliveira & Pantoja, 2020), to fill the gap described, the problem presented is: *"Which characteristics of telework and teleworkers are associated with the work-nonwork conflict (WNWC)?"*. To answer this question, the article's objective is to analyze the relationship between telework and teleworkers' characteristics and the WNWC, investigating time spent in the nonwork dimensions and the dimensions more affected in the WNWC.

2. Theoretical background

2.1 Telework

Allen *et al.* (2015) attest that different definitions of telework exist because it is of interest to different areas, such as transport, information systems and management. They rest on conceptualizations widely adopted to define telework as:

> a work practice that involves members of an organization substituting a portion of their typical work hours [. . .] to work away from a central workplace—typically principally from home—using technology to interact with others as needed to conduct work tasks (Allen *et al.*, 2015, p. 44).

In this definition, *four characteristics* stand out and will be considered in the *theoretical model* supporting this article:

(1) space flexibility: part of the hours that would be worked at the main office is worked outside the office (it is not overtime);

(2) telework intensity: portion of hours worked in telework;

(3) telework takes place mainly in the worker's home;

(4) use of technologies for interaction among teleworkers.

Messenger and Gschwind (2016) consider the use of these technologies as a milestone for 21st-century telework, increasing time and space flexibilities. These flexibilities, in turn, can confound the work-nonwork boundaries (Raghuram & Wiesenfeld, 2004) and increase WNWC (Keeney *et al.*, 2013), as will be explored later (subchapter 2.3).

A *fifth characteristic is time flexibility*, as telework can be done beyond the hours typically allocated to work. It is beneficial to teleworkers when it means autonomy to fulfill their tasks (Nakrošienė, Bučiūnienė, & Goštautaitė, 2019), but harmful if it means overtime or invades nonwork moments (Kossek, Lautsch, & Eaton, 2006).

2.2 Work-nonwork conflict

WNWC is defined as *"[. . .] difficulty participating in nonwork domains due to participation in the work domain"* (Keeney *et al.*, 2013, p. 221). It is an expansion from WFC (Greenhaus & Beutell, 1985), as they have the same conceptual basis of role conflict (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964), but WNWC includes other nonwork roles. The eight resulting nonwork dimensions are health, family, household management, friendships, education, romantic relationships, community involvement and leisure.

Validating the WNWC scale, Keeney *et al.* (2013) replicated the WFC dominant framework, whose main sources are time (worked hours) and stress (Greenhaus & Beutell, 1985), and proposed a multidimensional construct with 16 factors – 8 nonwork dimensions and 2 sources. This model was also validated for a Brazilian sample (Oliveira, 2017) and it is partially illustrated in Figure 1.

Identifying which other nonwork dimensions besides family the time spent teleworking influences is essential to develop more policies and practices for preventing and combating WNWC among teleworkers. Interests change from person to person (Bailyn, 2006) as shown by studies about workers (not teleworkers yet): the North Americans allocated more time to household management, leisure and health (Keeney *et al.*, 2013); the Brazilians, to education, family and romantic relationship (Oliveira, 2017).

Telework has been positively associated with the hours worked (Hill, Ferris, & Märtinson, 2003) and WFC (Russell, O'Connell, & McGinnity, 2009). So, it can also consume time desired for other nonwork dimensions, originating the first hypothesis:

H1. For teleworkers, there are other nonwork dimensions in the WNWC which are affected as much as family.

2.3 Telework and WNWC

Telework is theorized to implement time and space flexibility policies to help workers manage work and nonwork responsibilities. Empirical evidence, however, shows a weak association

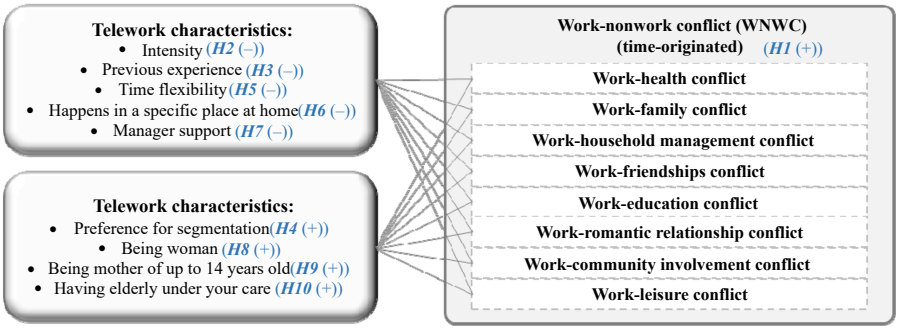

Figure 1.
Theoretical research model

Source(s): Elaborated by author

specifically between telework and lower WFC (Allen *et al.*, 2015). The WFC is just one of the WNWC factors, but the only one found in quantitative telework studies, the reason why WFC predominates in this theoretical subchapter.

As the objective of this article is to expand the investigation from the WFC to the WNWC for teleworkers, the hypotheses presented below consider time-originated WNWC and its eight factors (Figure 1). Therefore, for hypotheses 2–10, the investigation considered 8 derived hypotheses. For example, for hypothesis 2, we investigated from "H2a: Telework intensity is negatively associated with the work-health conflict" to "H2h: Telework intensity is negatively associated with the work-leisure conflict".

The weak association between telework and lower WFC was found in two meta-analyses of 46 and 58 studies. In the first meta-analysis, Gajendran and Harrison (2007) investigated possible moderating variables and found that, when the intensity was high or there was more experience in this format, the WFC was lower. These results ground hypotheses 2 and 3:

H2a–h. Telework intensity is negatively associated with WNWC.

H3a–h. Previous telework experience is negatively associated with WNWC.

In the second meta-analysis, Allen, Johnson, Kiburz, and Shockley (2013) focused on the effects of time and space flexibilities on the WFC, discerning whether they were available or effectively used. The negative association was low and only between: (a) availability of time flexibility and WFC, and (b) use of space flexibility and WFC. Due to the low effects, the authors hypothesized that telework would increase the risk of confounding boundaries between work and family, a perception already verified in Hill, Miller, Weiner, and Colihan (1998) and Hill *et al.* (2003).

This confusion between boundaries may be unwanted, as these boundaries are the main factors workers can manage to reduce the WFC (Ashforth, Kreiner, & Fugate, 2000). According to the boundary theory, people prefer to exercise their roles considering some point between total integration (no distinction between what belongs to work or family or when or where each role manifests itself) and total segmentation (the two dimensions as separate worlds, that occur in distinct time and space) (Nippert-Eng, 1996). Furthermore, if the work environment demands the opposite of what the worker prefers, there is a greater chance of conflict.

Convergence between worker preference and environment demands is decisive, as more integration between roles can both reduce the conflict, by allowing an easier transition between dimensions, or increase it, by confounding the most salient role for the individual at any given time. The opposite occurs when there is more segmentation (Ashforth *et al.*, 2000): it increases the conflict by making the transition difficult or decreases it by explicitly expressing the priority at each moment.

Thus, as telework tends to enhance the integration between roles, teleworkers who prefer more segmentation may have a higher perception of WNWC, which generates the fourth hypothesis:

H4a–h. Preference for more segmentation between work and nonwork is positively associated with WNWC.

Time and space flexibilities, telework characteristics, can affect teleworkers' mental health positively, by allowing them to balance working hours with family demands, or negatively, by causing conflicts between work and family demands (Kattenbach, Demerouti, & Nachreiner, 2010; Johnson *et al.*, 2020), So, it is important to investigate whether these and other telework-related characteristics are associated with WNWC. Hornung, Rousseau, and Glaser (2008) found that time flexibility was negatively related to WFC. Regarding space flexibility, while Hill *et al.* (1998) found specific places associated with more hours worked,

which could result in higher WFC, Solís (2016) found that such places were related to lower WFC. Thus, two other hypotheses will be investigated:

H5a–h. Time flexibility in telework is negatively associated with WNWC.

H6a–h. Having a specific place at home to telework is negatively associated with WNWC.

Several studies indicate that social support works better at combating WFC than formal organizational practices (Anderson, Coffey, & Byerly, 2002; Oliveira, Cavazotte, & Paciello, 2013), even for teleworkers. Bentley *et al.* (2016) found an association between manager support and lower psychological stress. These studies support the following hypotheses:

H7a–h. Manager support for telework is negatively associated with WNWC.

It is also important to examine teleworkers' characteristics, starting with sex. Telework can impact household and people care, especially for women, as they usually spend more hours per week on household tasks than men. In Brazil, before the Covid-19 pandemic, women spent 21.4 hours on these tasks, while men spent 11.0 hours (IBGE, 2019), even though they (women) have participated increasingly in the labor market for a long time. Only from 2012 to 2019, there was a 2.9 pp increase, from 51.6% to 54.5% (IBGE, 2019).

The sexual division of labor stems from men being responsible for working outside the home and ensuring financial support for the family, while women work at home, taking care of people and domestic chores (Hirata & Kergoat, 2003). Even when the assumptions for such a division no longer exist, with both sexes working outside the home, women still seem to be considered the main responsible for domestic tasks. A study by Oliveira and Casado (2021) found women with more WNWC than men for all eight nonwork dimensions, especially if they were married or had no children. This sexual division of labor can increase in telework (Ellison, 1999), which motivates the following hypotheses:

H8a–h. Women in telework perceive more WNWC than men in telework.

Investigation concerning telework and life stages suggested that children were a key component, increasing WFC (Zhang, Moeckel, Moreno, Shuai, & Gao, 2020). Hilbrecht, Shaw, Johnson, and Andrey (2008) explored the experience of school-age children's mothers and found tensions as working hours followed children's school rhythm, with no time for leisure or personal care. They also expressed living the sexual division of labor and being responsible for household and child care. Russell *et al.* (2009) found similar results: a positive relationship between telework at home and WFC, especially for mothers of under 5-year-olds. These results generate the following hypotheses:

H9a–h. Mothers of school-age children (up to 14 years old) perceive more WNWC than women who do not have children of that age.

Solís (2016) discovered that having more personal responsibilities, such as taking care of an elderly person, was associated with higher WFC. One last group of hypotheses, then, should be investigated:

H10a–h. Teleworkers who have elderly people under their care perceive more WNWC than teleworkers who do not have this responsibility.

Investigating telework during the Covid-19 pandemic, Nguyen and Armoogum (2021) found middle-aged women less likely to prefer home-based telework than younger women. Having more household and children responsibilities was the most probable reason. Çoban (2022) encountered women expressing a greater risk of being detached from professional work and of consolidating their role as housewives.

Shirmohammadi, Au, and Beigi (2022, p. 1) analyzed 40 studies concerning work-life balance for teleworkers during the pandemic. They found four misfits between desirable expectations and undesirable realities: *"(1) flextime versus work intensity, (2) flexplace versus space limitation, (3) technologically-feasible work arrangements versus technostress and isolation, and (4) family-friendly work arrangement versus housework and care intensity"*.

There are recent Brazilian studies with teleworkers whose results brought WFC up. Filardi, Castro, and Zanini (2020) discovered perceptions of low WFC and higher interaction with the family, although domestic chores interfered with telework. During the pandemic, the studies reported: (1) women with varied perceptions about WFC, some mentioning work overload, some highlighting time gained for other activities (Lemos *et al.*, 2021); (2) difficulties to reconcile different roles at home and how positive time flexibility was (Pandini and dos Santos Pereira, 2020); (3) WFC as one of the disadvantages, in addition to the distraction caused by household chores (Leite & Lemos, 2020).

At Latin America's biggest university, São Paulo University, professors conducted two studies, whose results are comparable due to the similar samples: balance between men and women, most respondents married and with a postgraduate degree, an average income of United States (US)$ 1,700.0 [1]. From the first to the second survey, people's desire to keep teleworking increased from 70% to 78%, as well as their perception about sharing tasks to take care of the family while teleworking or telework being compatible with their physical health care, as shown in Table 1 (PROGEP, 2020, 2021).

Figure 1 shows the theoretical model that supports the hypotheses investigated.

3. Methods

This *quantitative and descriptive research* is based on Allen *et al.*'s telework model (2015) and Keeney *et al.*'s WNWC model (2013), as shown in Figure 1. These two variables – *telework and WNWC* – were conceptually defined in subchapters 2.1 and 2.2, and operationally defined using the scales mentioned in Table 2. A specialized professional translated the scales into Portuguese, followed by a back-translation into English. A pretest before the data collection showed that no extra adjustments were needed.

The *universe* consisted of people who telework in Brazil, estimated at 7.90m individuals in September 2020 (IBGE, 2020). The invitation to participate in this research was sent through the researcher's social media to about 1,000 people. They were also asked to spread the research among their contacts. 395 people started answering the questionnaire and 299 completed it. Thus, the *sample* of 299 respondents was nonprobabilistic, intentional and convenience-based.

Data were collected from 11/09/2020 to 12/21/2020, using an electronic self-reporting questionnaire, detailed in Table 2. The questionnaire was elaborated to make self-reporting easier, aiming for adaptation to the context, ability to capture the variables of interest, reliability and validity (Sampieri, Collado, & Lucio, 2006). The questions were programmed to have a mandatory response on the data collection platform to avoid missing values. It was also possible to randomize items referring to nonwork dimensions, WNWC, preferred

Assertive	2020	2021
I share tasks to take care of the family while teleworking	67%	71%
I feel that telework is compatible with my physical health care	63%	70%
While teleworking, I have time flexibility	62%	59%

Source(s): PROGEP (2020, 2021)

Table 1. Percentage of people who agreed – 2021 × 2020

Block	Research variable	Operational definition	Number of items
1	2 variables to filter	If the respondent teleworked at home in Brazil	2
2	8 variables about time allocation to nonwork dimensions	Likert scale from 1 = no time to 7 = a lot of time	8 (1 per variable)
3	8 variables referring to time-originated WNWC	Scale from Keeney *et al.* (2013), Likert from 1 = totally disagree to 7 = totally agree[a]	24 (3 per variable)
4	Preferred work-nonwork boundary management strategy	Scale from Kossek *et al.* (2006), Likert from 1 = totally disagree to 7 = totally agree	9
5	Working time flexibility	Scale from Pierce and Newstrom (1983) *apud* Golden, Veiga, and Simsek (2006), Likert from 1 = too little to 7 = totally	2
6	Manager support	Scale from Aboelmaged and Subbaugh (2012), Likert from 1 = totally disagree to 7 = totally agree	3
7	Other telework characteristics	Examples: previous experience with telework, having a specific place at home to telework	6
8	Other characteristics of teleworkers	Examples: sex and marital status	17

Table 2.
Research variables, operational definitions and number of items in the questionnaire

Note(s): [a]Likert scale could be considered an interval scale as in Hair *et al.* (2009)
Source(s): Elaborated by author

work-nonwork boundary management strategy, time flexibility and management support, so the order in which they appeared inside each block varied among the respondents.

For the variables in blocks 3 to 6, Cronbach's alpha ranged between 0.75 and 0.91, exceeding 0.70. The analysis of outliers pointed to 2 cases in the intensity telework variable, calculated based on the hours worked in telework and total hours worked per week. Therefore, when these variables were analyzed, respondents were reduced to 297.

Data were analyzed using Statistical Package for the Social Sciences (SPSS) 20, considering the following techniques: *descriptive analysis, Pearson's correlation* (values below |0.300| are low; above |0.700|, high; and between |0.300| and |0.700|, moderate), and *analysis of variance* (*t-test*; the next section highlights the statistically significant results – $p < 0.05$ or $p < 0.01$). The assumptions of analysis of variance were checked – independence of observations, a minimal sample of 20 elements for each group, absence of outliers, homoscedasticity and normality of variables (Hair, Black, Babin, Anderson, & Tathan, 2009). All assumptions were fulfilled except the normality of variables (and the outliers in telework intensity); nevertheless, this causes a low impact on the results, as the sample in this study was big (Hair *et al.*, 2009).

4. Results and discussion

4.1 Characteristics of the sample

The sample includes 56.9% women and 43.1% men, with an average age of 42 years (standard deviation (SD) = 10), concentrated in the Brazilian Southeast (97.9%), and mostly married (68.6%). There is a similar number of respondents with and without children (respectively, 52.5% and 47.5%) and 33.8% (of all respondents) have children until 14 years old. As the focus is on investigating the whole WNWC (its 8 factors), and not just the WFC, it is interesting to have diverse family configurations in the sample.

Concerning the respondents' professional occupations, they are mostly specialists, analysts, assistants (26.1%), managers (18.4%) or autonomous (15.4%). They work 46.1

hours per week on average (SD = 12.5) and 40.2 hours (SD = 15.4) in telework, with no statistical difference between men and women. Almost a third of the respondents (31.8%) were studying at the time of the survey.

On telework, the average intensity is 87.2%; 47.2% of respondents had previous experience with this format before 2020, 53.5% have a specific place at home to telework, and 63.2% work for companies with telework policies. *Everyone uses a computer for telework.* During telework, 15.1% are alone at home, 56.9% have the company of their spouses, 43.1% of their children, 8.4% of elderly people under their care and 22.7% of someone who does the household tasks.

Regarding their income, the average is US$ 2,139.0 [2], with greater concentration in the ranges between US$ 813.1 and US$ 1,219.4 (13.7%), US$ 1,219.6 and US$ 1,625.8 (13.4%), and above US$ 3,658.1 (21.7%), which makes the sample a very specific portion of Brazilian population, whose average income in 2019 was US$ 448.9 (in the Southeast, US$ 515.4) (IBGE, 2019).

4.2 Time allocation to nonwork dimensions and the more affected ones in WNWC

Family, household management, and education are the *three nonwork dimensions to which teleworkers allocate more time* (4.96, 4.53, and 4.52, respectively – Table 3), while leisure (3.71) and community involvement (2.38) have less time spent. It is important to point out that previous experience did not generate statistical differences in the time allocated to family and household management. Only having children up to 14 years old or at home or being married did.

Compared to what North American and Brazilian workers declared (Keeney *et al.*, 2013; Oliveira, 2017), in this study, the two dimensions related to the home environment stand out by figuring, together, among the three to which teleworkers dedicate more time (Table 3). This could come from the Covid-19 scenario, as people had to adapt abruptly to telework at home and take care of the family and the house at the same time. Brazilian teleworkers had highlighted performing domestic chores even before the pandemic (Filardi *et al.*, 2020) – and just continued in the Covid-19 scenario (Leite & Lemos, 2020; Pandini and dos Santos Pereira, 2020; PROGEP, 2020, 2021).

Another highlight: all dimensions have time allocation varying among respondents (coefficient of variation (CV) from 28% to 56%). It reinforces the multiplicity of interests to which teleworkers dedicate themselves in addition to their jobs and families and, consequently, the need to study nonwork besides the family dimension.

As for the *nonwork dimensions more affected in the WNWC*, leisure, family and education stand out (4.63, 4.34 and 4.32, respectively – Table 4), which led to the acceptance of hypothesis 1. This result strengthens the possibility that telework invades leisure time (Kossek *et al.*, 2006) and does not help to manage work and family demands (Allen *et al.*, 2015), at least not as intensely as desired (WFC is the second most intense factor). Similar perceptions appeared in Pandini and dos Santos Pereira (2020), since people declared

Nonwork dimensions	Mean	SD*	CV**	Nonwork dimensions	Mean	SD*	CV**
Health	3.95	1.47	37%	Education	4.52	1.51	33%
Family	4.96	1.37	28%	Romantic relationship	4.01	1.68	42%
Household management	4.53	1.43	32%	Community involvement	2.38	1.33	56%
Friendships	3.81	1.36	36%	Leisure	3.71	1.35	36%

Note(s): *SD = Standard deviation. **CV = Coefficient of variation
Source(s): Elaborated by the author, based on the research data

Table 3.
Time allocation to different nonwork dimensions

difficulties to reconcile different roles at home, and in one of the misfits found by Shirmohammadi *et al.* (2022): family-friendly work arrangements versus care intensity.

As happened with North American and Brazilian workers (Keeney *et al.*, 2013; Oliveira, 2017), the nonwork dimensions affected vary among respondents, as well as within each dimension (CV from 32% to 42%; Table 4). This result yet again emphasizes the need to study nonwork besides the family dimension.

Just like in Oliveira (2017), leisure figures as a key dimension because it is the second with less time allocated, the most affected in WNWC, with correlations between allocated time (low correlations) and all eight WNWC factors (Table 5). In other words, allocating less time to leisure is associated with a more intense general WNWC perception for teleworkers. It seems that when teleworkers spend less time at leisure, they feel like not being able to dedicate themselves as much as they want to the other seven nonwork dimensions too. That might happen because leisure is the freest of the nonwork dimensions, the one that can be customized to what each person wants to do.

Friendships and health are the other dimensions whose allocated times are correlated with more WNWC factors: seven and six, respectively (Table 5).

4.3 Telework characteristics and WNWC

Concerning telework characteristics, the average *intensity* in the sample is 87.2% and teleworkers report a slightly higher perception of *manager support* (average = 4.99 and SD = 1.57) than of *time flexibility* (mean = 4.57 and SD = 1.81). This last characteristic was also slightly less mentioned by PROGEP (2020, 2021) respondents from 2020 to 2021 (62% versus 59%).

Investigating the association between these three telework characteristics and WNWC (Table 6), time flexibility stands out due to a negative (low) correlation with all eight WNWC factors. There is lower WNWC among teleworkers who declare higher time flexibility (Table 6), which leads to the acceptance of hypotheses 5a–h. These results converge with Pandini and dos Santos Pereira (2020), whose respondents pointed out time flexibility as an advantage, overcoming the misfit "flextime versus work intensity" (Shirmohammadi *et al.*, 2022). It indicates that when people work in their own homes, having some autonomy to decide on their time becomes especially important.

As manager support is negatively associated (low correlation) with six WNWC factors (Table 6), hypotheses 7a, c, d, e, g, and h are also accepted. It reinforces the importance of social support to prevent WNWC (Anderson *et al.*, 2002; Oliveira *et al.*, 2013). Finally, hypotheses 2a–h were rejected, as there is no association between telework intensity and WNWC (Table 6).

In other words, the percentage of hours spent teleworking does not affect the surveyed teleworkers' WNWC, but the perception of manager support and time flexibility does so. Regarding only time flexibility, it does not seem to confound boundaries, differently from what was found in Hill *et al.* (1998, 2003).

Having a specific place in the house to telework is not related to WNWC intensity. Thus, hypothesis 6 is refuted. A similar thing happens to having previous experience with telework,

Table 4. Nonwork dimensions more and less affected in WNWC

Nonwork dimensions affected	Mean	SD	CV	Nonwork dimensions affected	Mean	SD	CV
Health	4.29	1.57	37%	Education	4.32	1.57	36%
Family	4.34	1.63	38%	Romantic relationship	3.95	1.62	41%
Household management	3.88	1.55	40%	Community involvement	3.61	1.53	42%
Friendships	4.19	1.51	36%	Leisure	4.63	1.47	32%

Source(s): Elaborated by the author, based on the research data

Factor	Health	Family	Household manage	Friendships	Education	Romantic relat	Community involve	Leisure
Work-health conflict	−0.259**	−0.156**	−0.048	−0.235**	−0.063	−0.142*	−0.105	−0.228**
Work-family conflict	−0.203**	−0.029	−0.056	−0.202**	−0.072	−0.172**	−0.105	−0.249**
Work-household management conflict	−0.153**	−0.036	0.023	−0.226**	−0.113	−0.122*	−0.040	−0.198**
Work-friendships conflict	−0.151**	−0.081	−0.027	−0.135*	−0.039	−0.138*	−0.003	−0.198**
Work-education conflict	−0.189**	−0.139*	−0.074	−0.126*	−0.129*	−0.099	−0.071	−0.208**
Work-romantic relationship conflict	−0.101	−0.088	0.013	−0.194**	−0.061	−0.082	−0.077	−0.193**
Work-community involvement conflict	−0.021	−0.081	0.030	−0.102	−0.037	−0.054	0.148*	−0.159**
Work-leisure conflict	−0.244**	−0.124*	−0.056	−0.175**	−0.109	−0.142*	−0.065	−0.202**

Note(s): *Significant correlation at $p < 0.05$ (bicaudal). **Significant correlation at $p < 0.01$ (bicaudal)
Source(s): Elaborated by the author, based on the research data

Table 5.
Correlation between time allocation to nonwork dimensions and WNWC

which is associated with only two factors, household management and community involvement. So, only hypotheses 3c and g are accepted.

4.4 Teleworkers' characteristics and WNWC

Regarding the *preferred boundary management strategy*, the mean indicates a balance between integration and segmentation (mean = 4.02 and SD = 1.05). This characteristic stands out for presenting a positive (low) correlation with all eight WNWC factors (Table 7). It indicates a higher perception of this conflict for teleworkers who prefer segmentation, leading to the acceptance of hypotheses 4a–h. This result strengthens the role of individual preference for a specific boundary management strategy. Such preference is fundamental for the positive or negative meaning attributed to greater permeability between work and nonwork, an intrinsic characteristic of telework at home. So, people who prefer to separate work from nonwork tend to find it harder to telework at home.

Characteristics such as teleworkers' sex, having elderly people under their care, and, specifically for women, having children up to 14 years old, are not associated with different levels of WNWC. These results lead to refuting hypotheses 8a–h, 9a–h, and 10a–h.

Complementing these final analyses, there is no difference in the WNWC factors either between mothers and fathers of children up to 14 years old. Focusing specifically on the WFC and comparing people with and without children up to 14 years old, there is a difference for men. The fathers declare higher WFC when compared to the other men (4.90 versus 3.98). These results differ from Nguyen and Armoogum (2021) and Çoban (2022), as their female respondents were less likely to telework or feared consolidating their role as housewives, probably because of children and household responsibilities. This difference may be a consequence of the sexual division of labor, when women are held responsible for domestic tasks and incorporate this role, finding it difficult to admit that work can interfere negatively.

Table 8 summarizes the results found.

Table 6. Correlation between telework characteristics and WNWC

Factor	Telework intensity	Manager support	Time flexibility
Work-health conflict	−0.023	−0.127*	−0.174**
Work-family conflict	−0.052	−0.090	−0.147*
Work-household management conflict	0.014	−0.128*	−0.213**
Work-friendships conflict	−0.011	−0.122*	−0.162**
Work-education conflict	−0.052	−0.201**	−0.146*
Work-romantic relationship conflict	0.002	−0.065	−0.119*
Work-community involvement conflict	−0.024	−0.189**	−0.138*
Work-leisure conflict	−0.012	−0.127*	−0.142*

Note(s): *Significant correlation at $p < 0.05$ (two-tailed). **Significant correlation at $p < 0.01$ (two-tailed)
Source(s): Elaborated by the author, based on the research data

Table 7. Correlation between preferred boundary management strategy and WNWC

	Work-<dimension> conflict							
Dimensions	Health	Family	Household manage	Friendships	Education	Romantic relat	Community involve	Leisure
Preferred strategy: integration X segmentation	0.304**	0.210**	0.239**	0.231**	0.240**	0.224**	0.310**	0.277**

Note(s): **Significant correlation at $p < 0.01$ (two-tailed)
Source(s): Elaborated by the author, based on the research data

Hypotheses	Decision
H1: For teleworkers, there are other nonwork dimensions in the WNWC which are affected as much as family	Accept
H4a–h: Preference for more segmentation between work and nonwork is positively associated with WNWC	
H5a–h: Time flexibility in telework is negatively associated with WNWC	
H3a–h: Previous telework experience is negatively associated with WNWC	Accept: c, g
Accept: Hypotheses concerning the dimensions of household management and community involvement	
H7a–h: Manager support for telework is negatively associated with WNWC	Accept: a, c, d, e, g, h
Accept: Hypotheses concerning the dimensions of health, household management, friendships, education, community involvement and leisure	
H2a–h: Telework intensity is negatively associated with WNWC	Refute
H6a–h: Having a specific place at home to telework is negatively associated with WNWC	
H8a–h: Women in telework perceive more WNWC than men in telework	
H9a–h: Mothers of school-age children (up to 14 years old) perceive more WNWC than women who do not have children of that age	
H10a–h: Teleworkers who have elderly people under their care perceive more WNWC than teleworkers who do not have this responsibility	

Source(s): Elaborated by the author

Table 8.
Summarized results

5. Conclusions

Usually, academic research on WNWC considers only the family dimension as nonwork. And when it comes to telework, there were no studies concerning different nonwork dimensions in the WNWC. More recent studies have begun to emphasize that focusing on the work-family relationship can hide the difficulties of those who want to dedicate themselves to other nonwork dimensions. If not even studies allow people to declare this desire, there will be no scientific basis for proposing organizational practices to prevent WNWC, nor for questioning the system that values the (tele)worker who can prioritize professional life at any cost. These are important reasons to identify the nonwork dimensions that telework can invade, a practice intensified due to the Covid-19 pandemic.

As academic implications, the study highlights the need to include more nonwork dimensions in research on telework to influence organizational practices, presenting data that reflect diverse interests besides work and family. In this study, teleworkers spent time mainly on family, household management and education, with individual differences, representing different priorities. So, theoretical models about work and nonwork for teleworkers should expand nonwork besides family. Something similar occurs when the focus is on WNWC: the time spent on telework influences other nonwork dimensions besides family, with variation among teleworkers.

In summary, the first accepted hypothesis indicates that telework has invaded leisure and education as much as family. Telework, therefore, does not always fulfill the premise of helping to manage family demands, at least not in the desired intensity. Leisure continues as a key dimension in WNWC studies, as teleworkers allocate the second smallest amount of time to it and less time than they want (the work-leisure conflict is the highest). Besides, people who manage to allocate more time to leisure feel that work interferes less with the desired dedication to all investigated nonwork dimensions, reporting lower WNWC.

In the other accepted hypotheses, WNWC is: (a) negatively associated with time flexibility and manager support; (b) positively associated with individual preference for the segmentation strategy in boundary management. In other words, when people telework at home, an environment culturally associated with rest and care, it makes a difference to have the autonomy to stop and restart working whenever necessary, relying on the

manager's understanding. And the higher the preference for segmenting work and nonwork, the higher the WNWC, as teleworking forces some level of integration. This result strengthens the role of individual preferred boundary management strategy as the factor that attributes a positive or negative meaning to the higher permeability between work and nonwork. So, this preferred boundary management strategy should also compose the theoretical models about work and nonwork for teleworkers, which is another academic implication of this study.

Rejecting the other hypotheses, no association was found between WNWC and telework intensity, nor previous experience with this format (except for the dimensions of household management and community involvement) or having a specific place to telework at home, nor between WNWC and the teleworker's sex, having children up to 14 years old for women or having elderly people at home during telework. One finding specifically about WFC is that it is higher only for fathers (not mothers) with children up to 14 years old, compared to people without children of this age. It indicates that when fathers and mothers telework, the sexual division of labor may occur. Perhaps mothers charge themselves more to exercise the caregiver role expected by society and play this role, as women spend much more hours per week on household tasks than men. They (women) don't let themselves express how much telework interferes, while fathers expose this unwanted interference.

As practical implications, knowing more about teleworkers' WNWC will help organizations to improve lives if they implement practices and build a cultural environment to preserve nonwork time. It is also possible to help people choose the organizations they want to (tele)work for, with a sociocultural environment that matches their nonwork needs.

As social implications, the study reinforces that there are varied and growing individual demands in a society with diverse family arrangements and higher longevity. Organizations need to prepare to have (tele)workers who want or need to dedicate themselves to individual and collective interests other than children.

Methodological limitations include the nonprobabilistic and convenience sample, which makes the results not generalizable and the self-reported data collection. Self-reporting was chosen to capture individual perceptions of the research phenomenon (WNWC) and evoked proactive measures to reduce method bias: the survey was anonymous, with communication on no wrong or right answers, randomization of questionnaire alternatives and questions appropriate to the target sample. Two other limitations result from the theoretical model of WNWC: there may be further nonwork dimensions, such as spirituality, besides intersections among the eight studied dimensions.

This study was the first one to investigate WNWC for teleworkers. The results demand new studies, such as: 1) qualitative investigation to deepen knowledge on how telework invades nonwork; 2) research about the relation between WNWC and teleworkers' well-being, especially in a society that will deal with more diverse responsibilities; 3) study on how organizations can encourage nonwork as a way to positively influence individual health and work satisfaction; 4) study focused on gender discussions, deepening them while investigating WNWC for teleworkers.

Notes

1. The average dollar rate in June 2020 was US$ 1 = R$ 5.363, and in June 2021, US$ 1 = R$ 5.163.
2. The average dollar rate in December 2020 was US$ 1 = R$ 5.142

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