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Subjective Well-Being and Time Use of Brazilian PhD Professors¹

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Abstract: The university professor suffers high pressure to achieve productivity and performs under work conditions that are not always satisfactory. This study seeks to analyze the subjective well-being, the time-use strategies, and the satisfaction with their use of time of PhD-holding professors with and without productivity grants from the National Council for Scientific and Technological Development (CNPq). A total of 83 professors participated in the study (48 with productivity grants), with an average age of 50 years. A total of 89% of participants were from public institutions. The majority of the participants exhibited high levels of negative affect and low-average levels of satisfaction with their use of time. There was no difference in the subjective well-being or in the satisfaction with the use of time when comparing professors who had received a CNPq grant with professors who had not received a CNPq grant. The most important reason for dissatisfaction with the use of time was an excess of work, whereas peer recognition was the primary achievement obtained with the work. How work demands and conditions influence the well-being of the professors is discussed in this study.

Keywords: work-related quality of life, work satisfaction, working conditions, professorial work, positive psychology

Bem-Estar Subjetivo e Uso do Tempo por Docentes Doutores Brasileiros

Resumo: O professor universitário recebe elevada pressão por produtividade e atua em condições de trabalho nem sempre satisfatórias. Esta pesquisa buscou analisar o bem-estar subjetivo, as estratégias para uso do tempo e a satisfação com o uso do tempo em professores doutores com e sem bolsa produtividade pelo CNPq. Participaram 83 docentes (48 com bolsa de produtividade), com idade média de 50 anos, sendo 89% de instituições públicas. A maioria dos participantes apresentou alto nível de afeto negativo e nível médio-baixo de satisfação com o uso do tempo. Não houve diferença no bem-estar subjetivo e na satisfação com uso do tempo ao comparar docentes com e sem a referida bolsa. O motivo mais relevante para insatisfação com o uso do tempo foi excesso de trabalho, enquanto o reconhecimento pelos pares foi a principal conquista obtida com o trabalho. Discute-se como as demandas e as condições de trabalho influenciam o bem-estar destes.

Palavras-chave: qualidade de vida no trabalho, satisfação no trabalho, condições de trabalho, trabalho docente, psicologia positiva

El Bienestar Subjetivo y la Utilización del Tiempo en Profesores Brasileños con Doctorado

Resumen: El profesor universitario recibe alta presión por productividad y opera en condiciones no siempre satisfactorias. Este estudio examinó el bienestar, las estrategias subjetivas, y la satisfacción con el uso del tiempo en los profesores doctores con o sin beca de productividad del CNPq. Participaron 83 profesores (48 con beca), edad media 50 años, 89% de instituciones públicas. La mayoría contestó alto nivel de afecto negativo y bajo nivel medio de satisfacción con el uso del tiempo. No se han detectado diferencias en el bienestar subjetivo y satisfacción con el uso del tiempo cuando se comparan los profesores con y sin beca. El motivo más importante para la insatisfacción con el uso del tiempo fue exceso de trabajo, mientras reconocimiento de los pares fue la principal conquista con el trabajo. Se discute cómo las exigencias y las condiciones de trabajo influyen en el bienestar de estos.

Palabras clave: calidad de vida en el trabajo, satisfacción en el trabajo, condiciones de trabajo, trabajo docente, psicología positiva

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Researchers who are employed as professors in Brazil suffer various types of pressure to achieve high levels of productivity regarding, for example, the generation of scientific papers, participation in conferences, supervision of master's and doctoral students, consulting for or editing scientific journals, and participation in scientific committees

and associations. These performance criteria are used to determine the distribution of various types of research funding offered by the Brazilian government (National Council for Scientific and Technological Development/ Conselho Nacional de Desenvolvimento Científico e Tecnológico [CNPq], 2011).

One of the most highly valued funding sources for professors are CNPq productivity grants, which, in addition to helping offset research costs, generate professional visibility for those who receive the grants. Those who have been awarded and wish to perpetuate these grants must have a high level of scientific production, which means that in many cases, they experience constant overwork. Therefore, considering the possible damage to the quality of life of professors caused by overwork and by difficulties in time management, this study sought to examine the subjective well-being, the time-use strategies, and the satisfaction levels with their use of time of professors who have received CNPq productivity grants. Additionally, another group of participants that consisted of PhD-holding professors without productivity grants was studied for comparison purposes. This study may contribute to an understanding of the impacts of professor productivity ratings and strategies that can be used to promote better health and an improved balance between work and other areas of life. In addition, the study may help characterize the perceptions of the work that is performed in this professional category and help revise preconceived views.

Subjective well-being refers to how we think and feel about our lives (Diener, Suh, Lucas, & Smith, 1999; Diener & Tov, 2014; Zanon, Bardagi, Layous, & Hutz, 2014). More specifically, it refers to how individuals evaluate their lives in terms of judgments regarding satisfaction, emotional reactions of pleasure in response to life, or feelings of fulfillment. Accordingly, this concept involves cognitive and emotional judgments regarding life such that, generally, subjective well-being is evaluated in terms of the overall satisfaction with life, positive affect, negative affect, and satisfaction with specific domains (e.g., marriage, health, and work) (Diener, 2001; Tay, Kuykendall, & Diener, in press).

Positive affect can be described as emotions of enthusiasm, alertness, and activity. When this affect is at high levels, individuals are described as being in a state of high energy, full concentration, and pleasurable engagement, whereas at low levels, positive affect is characterized by feelings of sadness and lethargy. In contrast, negative affect involves the performance of activity without pleasure. Negative emotions, such as anger, guilt and nervousness, are observed when negative affect is at high levels, whereas calm, serenity, and quiet are associated with low levels (Watson, Clark, & Tellegen, 1988; Yilmaz & Arslan, 2013). Positive and negative affect are not viewed as opposites but as relatively independent functions. It is argued that there should be a relative balance between positive and negative affect throughout life to achieve high levels of subjective

well-being, with a more frequent occurrence of positive emotions than negative ones. In turn, life satisfaction is the cognitive aspect that complements the perception of happiness in addition to other affective characteristics (Diener et al., 1999; Zanon et al., 2014).

Among the factors that can interfere with quality of life is the relationship one establishes with work, which is an element with the potential to generate satisfaction and well-being but also dissatisfaction and stress (Coutinho, Krawulski, & Soares, 2007; Mendes, Chaves, Santos, & Mello Neto, 2007; Morin, 2001; Siqueira & Padovam, 2008; Tittoni, Andreazza, & Spohr, 2009). In addition to the work relationship, the use made of the time that one spends free from work can promote well-being (Newman, Tay, & Diener, 2013; Nunes, Pires, Azevedo, & Hutz, 2014).

One variable that is related to subjective well-being is the use of time. It has been argued that it is not the amount of time, or the “objective time”, that is spent on certain activities that is related to well-being but the satisfaction with how the time is used. Well-being is related to several subjective aspects of time use: the perceived control of the use of time, one’s involvement in an activity, the balance and variety of activities, one’s enjoyment of the activities in which one is involved, the significance of the activities and the anxiety related to time (i.e., time pressure). In turn, satisfaction with the use of time is related to the congruence between one’s life goals and the life that one leads, i.e., the idea of having control of time and time pressure/anxiety. To clarify, balance in the use of time does not mean distributing the time equally between work and leisure. The understanding of balance is subjective and varies substantially among individuals. It has been argued that the tendency to seek productivity, efficiency, and speed in work has expanded into the field of leisure and other areas of life (Boniwell, 2009). Therefore, individuals end up feeling more pressure and stress because of the intensification of both work and leisure activities (Boniwell, 2009; Freitas, Ribeiro, & Andrade, 2010).

One profession that exhibits high indices of work-related stress is that of teacher, from primary school teachers to university professors (Álvarez Flores, 2007; Andrade & Cardoso, 2012; Lima & Lima-Filho, 2009; Lopes, 2006; Mendes et al., 2007; Silva, 2006). Thus, the study of the working conditions and subjective well-being of the members of this professional category is pertinent. The study of the work demands and the satisfaction levels of teachers at the university level is particularly relevant because these professionals highly value this area of life and only award more importance to family (when comparing work, family, religion, leisure, and community) (Medeiros, 2011).

In this regard, a study performed on 71 professors from a public university in Brazil on the basis of exclusive dedication revealed that physical infrastructure, i.e., the library, laboratories, classrooms, educational materials, and the audio-visual resources, was among the factors most cited as a cause of dissatisfaction with work. The factors that were

mentioned as positive included the nature of the activity (i.e., intellectual labor), the autonomy in the performance of the activity, and the affective/emotional content. However, the same affective/emotional aspect mentioned as positive was also cited as a source of nuisance because the parties with whom professors engage frequently criticize and question the behavior of the professors (Gradella Júnior, 2010). In another study on university professors, which was performed in Peru, the factor that generated the most work stress was the administration, whereas the factors that contributed the most to work satisfaction were the independence, status, and freedom offered by the teaching career (Álvarez Flores, 2007).

A similar study noted that the minimum physical conditions necessary for professorial work in terms of, e.g., equipment and furniture are not always provided by the public university. The authors conclude that in such circumstances, the interest of professors in obtaining funding to overcome such shortcomings increases. The pursuit of this type of resource tends to increase competitiveness among peers and encourages them to value teaching from an economic perspective (Lima & Lima-Filho, 2009).

This same study, which involved 181 professors from a public university in Brazil, observed that back pain (55.9%) and leg pain (38.8%) were the most frequently mentioned physical symptoms, and mental fatigue (55.1%), stress (52.4%), anxiety (42.9%), forgetfulness (42.9%), frustration (37.8%), nervousness (31.1%), anguish (29.3%), insomnia (29.1%), and depression (16.8%) were the most frequently cited mental symptoms. Regarding leisure, 78.8% of the women and only 59.1% of the men indicated that they had an active leisure life, which was interpreted as a cause for concern because it denoted an imbalance between work and the other spheres of life for the men (Lima & Lima-Filho, 2009).

Regarding teaching production at the university level, Castañón (2004) notes that the high number of professionals in academia and the pressure from funding agencies to achieve a significant level of scientific production cause scientific production to become a way of ensuring the survival of the professional as a researcher. Additionally, individual scientific production is required at a level that generally does not correspond to the resources invested or available for professors, which occasionally results in the production of scientific products of questionable quality, performed only to ensure the required quantitative indicators. For example, concerning the production of psychology professors, one of the indirect effects of *Qualis* (a rating system for the quality of the scientific journals in which Brazilian researchers publish) is an increase in the competitiveness among journals, professors, and graduate programs. This increase in competitiveness has not necessarily resulted in an increase in the quality of scientific productions. Thus, the search for production quantity is occasionally prioritized over quality in terms of the innovativeness, relevance, and usefulness of the generated knowledge (Costa & Yamamoto, 2008).

The use of scientific production indicators not only affects teachers individually. These same criteria are used to assess the quality of the graduate programs with which the teachers are linked. Therefore, the production indicators are used as a reference for awarding individual research grants and for grants and other funding at the institution level (Macedo & Menandro, 1998). Additionally, researchers can be accredited or discredited with respect to their participation in graduate programs (Programas de Pós-Graduação [PPGs]) depending on their production. A professor with low productivity is liable to be discredited, which can create additional stress regarding professorial productivity. Despite the pressure regarding high academic production, there are factors outside the control of the professor/researcher that interferes with his or her production (e.g., excessively long periods for article review in certain journals and advisees who fail to meet defense deadlines). Thus, the production of professors who teach in PPGs is a complex issue that is simultaneously influenced by several factors.

Among the most sought-after individual grants are the so-called productivity grants. The awarding of these grants follows criteria established by CNPq: the candidate's scientific production, the training of graduate students, innovative scientific and technological contributions, coordination or participation in research projects, participation in editorial and scientific management activities, and the administration of institutions and centers of technological and scientific excellence (CNPq, 2011). The productivity grantee is a researcher who stands out among his or her peers and should devote him- or herself exclusively to the program. His or her classification is based on criteria arranged in two categories (1 and 2), which relate to the time since receiving the doctoral degree. In Category 1 are researchers with a minimum of eight years since receiving the doctoral degree, who are divided among four levels (A, B, C and D), and whose production during the last ten years is analyzed. In Category 2 are the researchers with at least three years since receiving the doctoral degree, and the comparison is made regarding the last five years. Based on this system, a researcher's classification, ranking, and progress are evaluated by the Advisory Committee (AC) of each area. Because the provision of productivity grants is variable among areas of study and by period and there is not always a sufficient number of grants available for all who deserve them, the criteria used by the ACs are revised every three years.

Method

Participants

The first 40 professors with productivity grants listed on the Lattes Platform from the fields of Health Sciences, Humanities, and Engineering were invited to participate in this study for a total of 120 invitations. Similarly, a control group that consisted of 120 PhD-holding professors in the same fields but without productivity grants was invited to

participate. The invitation was sent to the first 40 professors without productivity grants listed in each of these fields on the Lattes Platform.

A total of 83 university professors agreed to participate, of whom 48 had obtained CNPq productivity grants and 35 had not. This sample exhibited a mean age of 50 years ($SD = 9.5$, with a minimum age of 29 years and maximum age of 69 years). Of the participants, 55% were female and 89% were professors at public institutions. The professors were from 14 Brazilian states, with the majority being from São Paulo, Rio de Janeiro, and Rio Grande do Sul (39.8%, 12%, and 12%, respectively). These professionals covered the three large areas of study encompassed by the CNPq: Health Sciences ($n = 38$, in various subfields), Humanities (specifically, from the field of psychology, with 26 participants) and Engineering ($n = 19$). To obtain a more representative sample of various professional situations, PhDs from different academic fields were selected. However, because of the small number of participating researchers from each area of study, it was not possible to perform separate data analyses by academic field.

Instruments

Socio-demographic questionnaire with identifying data and questions related to work and time use. For time use, open-ended and multiple-choice questions regarding the work situation in terms of working hours, the distribution of working hours among various domains (e.g., research, teaching, extension, administration, and consulting activities), time spent in leisure activities, strategies used for time management, satisfaction in specific areas of life, and perceived benefits and harm to life depending on the level of dedication to work were included.

Scale for measuring Subjective Well-Being. The scale consisted of three parts, which analyzed positive affect, negative affect, and satisfaction with life. A total of 20 items were used for analyzing positive affect, 20 items for negative affect, and five items for satisfaction with life. The items on positive and negative affect described feelings. The respondents were asked to consider how much the described emotions were experienced on the day that the questionnaire was completed. The response options were presented on a Likert scale that ranged from *not even a little* (1) to *extremely* (5). The items regarding satisfaction with life consisted of global indicators of this construct and were answered on a scale with response options that ranged from 1 to 7 according to the level of agreement with the statements. This scale was constructed by Watson et al. (1988) and adapted for Brazil by Giacomoni and Hutz (1997). The studies on the scale are summarized in Zanon et al. (2014).

Procedure

Data collection. A search was performed on the Lattes Platform for PhD-holding professors with and without productivity grants considering the major fields recognized by the CNPq. Subsequently, an invitation was sent by email

to participate in the study, which contained a link to a website at which the participants could respond to the instruments.

Data analysis. The open-ended responses to the questionnaire on time use were subjected to content analysis. First, a brief reading of participant responses was performed to identify possible categories for the thematic grouping of information. Next, categories for the classification of information were created. Then, the frequency of responses for each of the established categories was determined (Bardin, 2009). The frequencies of responses were compared (using a chi-square test) to determine differences associated with being a productivity grantee. The data on satisfaction with time management and those on the perception of balance between the various roles in life were correlated with data on satisfaction with life, positive affect, and negative affect. Additionally, the data collected on subjective well-being were compared with those of a normative sample of adults included in the validation studies of the subjective well-being scale.

Ethical Considerations

This study was submitted for consideration and approved by the Research Ethics Committee of the Instituto de Psicologia at the Universidade Federal do Rio Grande do Sul (UFRGS) under protocol number 2010010. Each participant read and signed the informed consent form before participating in the study.

Results

Among the surveyed PhDs, the weekly average number of working hours was 47 hours ($SD = 12.6$), with the majority of the hours being spent in research and teaching (weekly averages of 20.8 and 12.9 hours, respectively). The professors also dedicated time to extension, administrative, and consulting activities. The weekly average number of hours spent on leisure activities was 10.8 hours ($SD = 8.5$).

The participants demonstrated a low-average level of satisfaction with their use of time ($M = 2.8$, $SD = 1.1$) and regarding the balance between their dedication to work and to other areas of life ($M = 2.5$, $SD = 1.2$), whereby the response options ranged from 1 to 5. Table 1 depicts the subjective well-being of professors in percentiles in comparison with a normative sample of adults of various professions as described in the validation studies of the Brazilian version of the scale (Hutz, Zanon, & Bardagi, 2014; Zanon & Hutz, 2014).

The majority of the participants exhibited a high level of negative affect (77.8% in the 75th percentile or higher), an average level of positive affect (85.4% between the 25th and 75th percentiles), and an average level of satisfaction with life (40.8% between the 50th and 75th percentiles). These data suggest a high frequency of negative emotions regarding everyday life and an average level of positive emotions. In terms of the cognitive assessment of well-being, the results

Table 1
Frequency and Percentage of Participants in Different Percentile Ranges for Negative Affect, Positive Affect, and Satisfaction With Life

Percentile	Negative Affect		Positive Affect		Satisfaction with Life	
	<i>f</i>	% Valid	<i>f</i>	% Valid	<i>f</i>	% Valid
5	0	0	3	4	9	11.1
10	0	0	4	5.3	5	6.2
25	1	1.3	20	26.7	8	9.9
50	9	11.8	27	36	19	23.5
75	30	39.5	17	22.7	14	17.3
90	25	32.9	3	4	14	17.3
95	8	10.5	0	0	9	11.1
99	3	3.9	1	1.3	3	3.7
<i>N</i>	76	-	75	-	81	-
Missing cases	7	-	8	-	2	-

were more varied, although there was a trend toward average and high levels of satisfaction in the group.

When comparing the variables subjective well-being and use of time depending on whether the subject had a CNPq productivity grant, no significant difference ($p < .05$) was observed in any of the cases. Thus, the subsequent analyses included the full group of PhD-holding professors ($N = 83$).

Subsequently, the correlation between subjective well-being with the level of balance in the use of time in the various areas of life and the satisfaction with the use of time was analyzed. It was observed that all the correlations were significant ($p < .01$). The higher the satisfaction with life was, the higher the perception of balance in the use of time between the different areas of life ($r = .65$) and the higher the satisfaction with the use of time ($r = .70$). Positive affect was moderately correlated with the perception of balance in the use of time between the different areas of life ($r = .30$) and with the satisfaction with the use of time ($r = .41$). Conversely, the higher the negative affect was, the lower the satisfaction with the use of time ($r = -.33$) and the higher the imbalance in its use between the different areas of life ($r = -.42$). Overall, well-being was moderately or highly correlated with the variables related to the use of time.

Another part of the study sought to understand the reasons for the various levels of satisfaction with the use of time. Each participant could list as many reasons as he or she desired in all the open-ended questions. The reasons for dissatisfaction with the use of time were overwork (34.9% of those surveyed), that the time dedicated to work invaded one's personal life (22.9%), the lack of institutional or governmental support for their work (19.3%), other reasons (10.8%, for example, the lack of money for leisure because of the low wages paid to teachers), and the excessive demands for production (7.2%). Those who indicated higher satisfaction with their time use reported experiencing pleasure in performing their work (i.e., "they enjoy what they do", 16.9%), being able to balance work activities and other activities (10.8%), succeeding in their professional activities, obtaining personal satisfaction with the results of

their work, being able to have time for personal activities, and identifying themselves with certain features of academic life, in all cases with a frequency of seven citations in each aspect (representing 8.4% of the participants).

Difficulties in using time well were related to institutional factors (e.g., unplanned meetings, deviation from one's assigned duties, and insufficient physical infrastructure in universities; 62.7%), personal characteristics (e.g., disorganization, anxiety, low discipline, and difficulty in imposing limits on work; 30.1%), excessive work assignments (25.3%), personal life demands and/or conditions related to the location in which one lives or works (e.g., spending too much time on commuting or on domestic tasks; 6%), and little identification with the work (4.8%).

Regarding time-management strategies, participants cited organizing and planning time use in accordance with objectives, priorities, or deadlines (using various tools for this purpose; 68.7%), acting to facilitate compliance with time-use plans (39.8%); resolving urgent problems (e.g., "putting out fires"; 9.6%); exaggeratedly devoting themselves to work (12%), and maximizing the available time (e.g., by reading work-related material while exercising; 2.4%). Only 9.4% of the participants indicated not having established a strategy for their time use (Table 2).

When asked for reasons for the levels of perceived balance between work and other areas of life, most of the participants who indicated a low balance mentioned prioritizing work and sacrificing other aspects of life (32.5%), difficulty in saying no and overcommitting themselves (30.1%), productivity pressures that result in overwork (24.1%), and overwork (20.5%). Those participants who indicated a high balance between work and other areas of life mentioned several facilitating behaviors (e.g., not thinking about work when not working, dividing time between various activities, and knowing how to set priorities; 25.3%), family support and understanding with respect to work demands (6%), and other specific aspects (e.g., the wisdom gained with age or having a flexible attitude in life; 4.8%).

Table 2
 Responses Grouped in the “Organization and Planning” and “Facilitating Actions for Compliance With the Plans” Categories

Organization and Planning	Facilitating Actions for Compliance with the Plans
Priority-based work	Beginning and ending one activity at a time
Tasks-based work	Concentrating on what one is doing
Deadline-based work	Not accumulating tasks unnecessarily
“First-in, first-out”	Doing things well and not leaving backlogs
Establishment of personal annual and semiannual goals	Forming a network of work/partnerships
Timetable	Limiting time for unplanned activities to avoid schedule deviations
Division of available time according to tasks; use of an alarm to switch tasks	Organizing and respecting previously established task schedules
Planning with the use of <i>online</i> tools	Avoiding wasting time in traffic
Checklists of tasks organized by context	Delegating tasks
Technological resources as reminders of tasks that must be performed	Not committing to more activities than time allows
Anticipation of what should be done	Reserving time for personal activities
Preparing things ahead of completion deadlines to decrease stress	Alternating work activities and leisure activities to maintain motivation
	Not repeating work
	Maintaining one’s pace by not despairing over the large volume of tasks

Concerning achievements obtained by dedication to work, 38.6% of the participants mentioned professional recognition by peers, students, and the community in general. Other participants indicated personal satisfaction with the results of work/doing what they enjoy (30.1%), high academic production (21.7%), personal and professional financial gain (13.3%), progress in their academic careers and possibilities for professional training (12%), good mental health (12%), contributions to the professional training of students (9.6%), contributions to the scientific advancement of their field (3.6%), and other achievements (e.g., having time for more intellectually complex work; 2.4%). Finally, 8.4% of the participants did not indicate any achievement.

The majority of respondents indicated damage to their physical health (e.g., various diseases, little time for self-care, not being able to be physically active, and sleep disorders; 38.6%). Other respondents noted damage to family relationships (32.5%), little time for cultural and leisure activities (25.3%), little time for personal activities (e.g., doing work-unrelated activities and doing what one enjoys; 22.9%), impairment of psychological health (e.g., stress, difficulties in disconnecting from work, an inability to “do nothing”, anxiety, and tension; 20.5%), little time to dedicate to friends (12%), dissatisfaction with work (e.g., the participants feel that despite investing a substantial amount of time, their work does not proceed as they would like or that their time is misspent on administrative duties; 7.2%), and other more specific harm (e.g., the recurrent necessity to work outside normal working hours; 2.4%). Only 13.3% of the participants did not perceive any adverse health effects that were related to their dedication to work.

Discussion

Regarding the subjective well-being of the participants, the high level of negative affect obtained here is noteworthy

and suggests the presence of feelings such as anger, guilt, and nervousness. Additionally, the open-ended responses reveal the presence of various detrimental effects associated with work, be they physical, psychological, or relational issues. Thus, the results demonstrate agreement with other studies performed on teachers at various educational levels (Álvarez Flores, 2007; Andrade & Cardoso, 2012; Castañón, 2004; Gradella Júnior, 2010; Lima & Lima-Filho, 2009; Lopes, 2006; Medeiros, 2011; Mendes et al., 2007; Silva, 2006). However, factors that protect the health of professors were also revealed. These factors include the enjoyment of one’s work, family support, and recognition for one’s work. These aspects may contribute to an average (but not low) level of positive affect and of satisfaction with life.

An unexpected result was that professors with and without productivity grants exhibited comparable levels of subjective well-being, satisfaction with time use, and the perceived balance between the different areas of life. In this respect, it is possible to suggest that both professors with and without productivity grants suffer higher pressure to achieve productivity at work, although by different means. Thus, the hypothesis that the greater demand for production by productivity grantees can be associated with a lower quality of life compared with non-grantees is not confirmed.

Regarding the relationship between subjective well-being and the use of time, it was observed that the higher the well-being was, the higher the perception of balance in the use of time between the different areas of life and the greater the satisfaction with the use of time, with moderate and high correlations. Thus, the arguments of Diener (2001) and Tay et al. (in press) on the relationship between satisfaction in specific areas and overall well-being agree with this study’s results.

The reasons for dissatisfaction with the use of time agreed with the results of previous studies on the topic and included the experience of difficulties related to institutional

factors, the occurrence of physical and psychological symptoms, and the negative feeling related to excessive pressure to produce academic research papers (Álvarez Flores, 2007; Castañón, 2004; Gradella Júnior, 2010; Lima & Lima-Filho, 2009). Another aspect related to dissatisfaction that was not noted in the literature was that time dedicated to work invaded one's personal life, which makes it difficult to find time to play the various roles in one's life.

A surprising datum is that the excessive demand for production was cited by only 7.2% of the sample as one reason for dissatisfaction with the use of time. Considering the extensive discussion on the negative effect of excessive publication pressure (Castañón, 2004; Costa & Yamamoto, 2008; Macedo & Menandro, 1998), this result was unexpected because this factor was not reported as a frequent problem for the analyzed sample. Although the demand for productivity in and of itself has not been indicated as a reason for dissatisfaction, it should be considered that this demand is expressed within a substantially wider context of various elements that make professorial work difficult by interfering with the performance of professors, such as the lack of infrastructure, excessive bureaucracy, the need to teach large course loads, and the obligation to participate in frequent meetings. Another hypothesis for the finding is that the excessive demand for production has become a phenomenon that the analyzed sample perceives as "natural" and is not identified as a problem that can be rectified or as a characteristic of the period in which we live. It is hoped that in the long term, these aspects are reviewed by the teaching institutions and the funding organizations in an effort to improve the work-related quality of life of professors, which will likely improve their performance in the multiple roles they must play in universities.

The participants who indicated greater satisfaction with their use of time demonstrated greater identification with and interest in their work in addition to a perception of greater balance between their work activities and other activities. These outcomes agree with the study by Boniwell (2009). However, it was not possible to determine the cause of this higher ability to apportion one's time between the various roles, in the same way that "enjoying what one does" is not necessarily a constant factor, considering the diversity of the professor's activities (e.g., teaching, research, extension, and administration work).

Another outcome consistent with Boniwell's study was the anxiety generated by the lack of control over time, considering the emergence of urgent and unplanned activities. On the contrary, the participants that related being satisfied with their use of time were involved in their activities and enjoyed them. The statement of a number of participants who reported working too much but being satisfied with this standard because they do what they like reiterates the idea that balance in the use of time does not mean the equal distribution of time between work and other areas of life. The understanding of balance is subjective and varies among individuals (Boniwell, 2009).

The majority of the participants cited some strategy to aid with time management, which agreed with the hypothesis of high pressure derived from the work environment and the excessive number of work tasks. Having a strategy seems to help in the organization of work and in ensuring some free time, as described in studies on the interference of work with the quality of life (Newman et al., 2013; Nunes et al., 2014). Regarding this hypothesis, it is noteworthy that the pressure for production at work can improve the strategies used by the grantees. In this respect, the strategy most often reported reflects organizational actions based on targets, which seems to be a way to "survive" the work demands, although naturally, not all professors adopt this style outside of work. Moreover, one would expect the reports of overwork and urgent, unexpected requests would increase the frequency of use of the "putting out fires" strategy. However, this approach was not identified as a primary strategy. Another hypothesis to explain this finding is that the complexity of teaching work at the university level requires the use of planning and of strategies to organize time between different activities, regardless of the production pressure or the large volume of work.

Regarding the reasons for balance between work and other areas of life, it was found that the lesser the perception of balance was, the higher the need to use "free time" for work. This result appears to support an initial assumption of this study that there is overwork on the part of the professors, which demands the reorganization of their time to prioritize work to the detriment of free time. It also confirms the hypothesis of the centrality of work in the life of professors (Boniwell, 2009; Medeiros, 2011). The presence of emotional/affective factors that interfere with this balance bear mentioning, including "difficulty in saying no and taking on more commitments than one could handle," which can further hinder time management.

Regarding the achievements related to the dedication to work, affective/emotional rewards were reported as the most frequent achievement (e.g., recognition by one's peers, by students, and by the community), which confirms the theoretical assumptions in the literature (Gradella Júnior, 2010). If we consider scientific production to be a criterion of recognition, the question arises as to the origin of this demand. Is it the work itself (e.g., when used as a reference for research incentive funding and grants [Macedo & Menandro, 1998]), or does it stems from the professors themselves for reasons of a personal nature, such as personal satisfaction with the results obtained through work? Nothing can be concluded on this matter. However, this question could be the focus of future research.

Finally, regarding the detrimental effects of the dedication to work, the results indicated consequences associated with the physical, psychological, and social health of the professors. This outcome agrees with the expectations of this study and with the literature on this topic, particularly regarding the possible association with stress (Álvarez

Flores, 2007; Andrade & Cardoso, 2012; Freitas et al., 2010; Lima & Lima-Filho, 2009; Lopes, 2006; Mendes et al., 2007; Silva, 2006). Unexpectedly, part of the sample did not identify any work-related harm, which suggests that for certain participants, the involvement and satisfaction with work is so great that the gains completely overshadow the perceived harm.

Final Considerations

This study investigated the quality of life of Brazilian PhD-holding professors. A high level of negative affect and an average level of positive affect were observed, which suggests damage to their quality of life. There were no differences between the aspects studied when considering PhDs with or without CNPq productivity grants, indicating that the work demands are high for university professors regardless of whether they have received this grant. Several negative aspects were work-related and ranged from institutional issues to personal characteristics that hinder time management and the ability to satisfactorily experience one's various life roles. Moreover, work-related achievements were mentioned by the majority of the participants, of which the most important was professional recognition.

This study contributes to the understanding of professors by those who manage the awarding of scholarships and grants at research support agencies and by university administrators by describing the difficulties in the work of Brazilian PhD-holding professors and the factors that make their work more meaningful and rewarding. Considering the recurrence of burnout and other physical and psychological symptoms among professors, it is essential to implement a plan of action to support the health of these professors. This study can also contribute to revising the accepted discourse on the work of PhD-holding professors/researchers and reshaping arguments that have been emphatically advocated in academia regarding the relationship that is established between professors and their work.

The study's limitations include the sample size and the use of self-reporting for the data collection, which may have resulted in bias in the results, for example, regarding the number of hours worked per week, which some professors may have underestimated and others may have overestimated.

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