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Positive and Negative Work-family Interaction: How Burnout is Related to Job Satisfaction

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Authors' contributions

All authors contributed to all step, read and approved the final manuscript.

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ABSTRACT

Aims: The main objective of this study was to test competitive path models describing the relationship between Work–Home Interference, job burnout and job satisfaction.

Study Design: Data was obtained from a sample of 95 dentists. A conceptual model in which burnout totally mediates the relationship between Work–Home Interference and job satisfaction was compared to another model in which this mediation was partial. The mediator role was demonstrated using the rationale and procedure suggested by Holmbeck [1]. The results were discussed in light of the literature dealing with burnout.

Sample: Data was obtained from a sample of 95 dentists.

Practical Implications: The research suggests the very importance of relationships between work and home life, and the mediator role of job burnout for current research in quality of work

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life balance and management.

Originality/Value: Previous results reported in this population are few. The attention aroused by the conciliation between private and working lives is important inasmuch as it can alter the psychological and physical health of individuals.

Keywords: Work-home interference; job burnout; psychological burnout; job satisfaction; dentists.

1. INTRODUCTION

1.1 Home and Work Life

The equilibrium between work and personal life is a concept that does not have a consensus definition. In order to qualify the concept and its etiology, we also speak of private, family or professional demands and the negative or positive effects of the spheres of life (see [2] for the meta-analysis; [3]).

In its most common acceptance in this context, the term equilibrium means the absence of work-personal life conflict or interference. Interference or on the contrary equilibrium between work and personal life are, in this definition, the extreme points of one continuum [2,4-6]. At present, the concept of interference between work and home life is considered through the prism of the so-called "role conflict" theory developed by Greenhaus and Beutell in the 1980's. The theory of Greenhaus and Beutell [7] takes the form of a conflict of time, role or behavior. This concept is based on the idea according to which: The simultaneous and conflicting pressures between the private sphere and the work sphere affect the equilibrium of the individual such that difficulties in taking part in the family role or the professional role are caused by the participation in the other role [8].

This conflict between the spheres of life is said to be bidirectional inasmuch as work is assumed to interfere with the family domain (i.e. time spent at work encroaches on free time for friends and family), and inversely the family sphere is thought to interfere with work (i.e. bringing up children prevents working). In accordance with Kossek and Ozeki [9], O'Driscoll, Ilgen and Hildreth [10], this means that there is a distinction between the work → private/family life conflict (CTF)¹ and the private/family life → work conflict (CFT)².

¹ CTF is also referred to with the English terms "work-to-family conflict" (WFC) and "work-to-home interferences" (WHI). These terms are similar.

² CFT is also referred to with the English terms "family-to-work conflict" (FWC) and "home-to-work interferences" (HWI). These terms are similar.

1.2 Areas of Life and Health of the Individual

The issue of the management of the areas of life at and outside of the workplace is now central. For example, the studies of Galinsky, Bond and Friendman [11] show that close to 40% of employees who have family responsibilities (with one or several children) have difficulties handling the combination of their work and the private life.

At present, the literature allows us to establish links between work-home interferences and various dimensions of the personality. For example, with regard to perceived stress, Voydanoff [12] demonstrated that subjects who feel the work-private life conflict are also those who show a high degree of perceived stress. However, in family units that have the effective social support of the spouse (i.e. division of family responsibilities), the establishment of a link between the perceived stress and the conflict seems to be more problematic.

Furthermore, it appears that the work/private life conflict (CFT) mediates the relationship between the work load and the subjective well-being [13-16]. It will be demonstrated that the mediating variable has as its main characteristic that it intervenes in the link between the predictor (IV: Independent Variable) and the criterion (DV: Dependent Variable) [17].

In other words, the junction between the effect of an IV as it is and the criterion (DV) goes through the mediator process. According to Baron and Kenny [17]: "While the moderating variables determine in which case certain effects appear, the mediating variables explain how or why they appear" (in [18], p.99). Demerouti, Bakker and Schaufeli [19] demonstrate that the same interface has an impact in the etiology of life satisfaction. These authors report that the burnout mediates the link between work/home interferences and satisfaction. The same is true for Bruck, Allen and Spector [20] for whom the interferences (CFT/CTF) are predictors of the degree of overall job satisfaction.

On the psychopathological level, the evaluation of the CFT/CTF interface also predicts the involvement of the subjects in risk behaviors such as heavy alcohol consumption. In a study carried out with 5271 participants, Roos, Lahelma and Rahkonen [21] demonstrate that in subjects who perceive a marked conflict between work and private life, alcohol consumption is on the order of 12 standard portions per week for men and 9 for women. In general, the meta-analysis of Mesmer-Magnus and Viswesvaran [22] indicates very clearly that work-home interferences and vice versa have numerous effects which are harmful for the individual (examples: In terms of perceived stress, job satisfaction, somatic complaints, organizational involvement, etc.). Among these links and effects, we see that job exhaustion (or *burnout*) [23] is particularly significant.

1.3 Fields of Life, Job Burnout and Satisfaction

Maslach and Jackson [24,25] demonstrate that job burnout is based on three elements which are: 1) emotional burnout, i.e. a feeling of mental fatigue which is felt by the subject due to his work; 2) depersonalization which corresponds to impersonal, dehumanized, and negative attitudes of the employee with respect to people whom he is in charge of; 3) a decrease in personal accomplishment or professional efficacy. It means that an individual has a conviction or belief according to which it is impossible for him to efficiently meet the demands of the work activity. These three elements are the subject of a psychometric evaluation using an instrument which is supposed to determine them. The tool is called the *Maslach Burnout Inventory* (MBI) (ibid., [24,25]).

After the MBI, the tool which operationalizes this conception (see presentation of the tool hereafter) is one of the most widely used around the world to evaluate burnout. Unlike Maslach et al. [24,25] the definition of Pines and Aronson [26] focuses on the core of the "burnout" i.e. the degree of burnout of the individual. This burnout is based on: 1) Physical exhaustion (i.e. multiple complaints expressed by the individual regarding his physical state); 2) Mental exhaustion (i.e. set of complaints linked to the mental fatigue expressed by the individual); 3) Emotional burnout (i.e. subject's general feeling that he is unable to respond effectively to the demands of his social environment). These three elements are evaluated through the *Burnout Measure* (BM)

tool or its short version *Burnout Measure Short version* (BMS) by Malach-Pines [27]. Schaufeli and Van Dierendonck [28] demonstrated that the BM/BMS tool is very strongly correlated with the construct that is supposed to evaluate emotional burnout according to Maslach et al. [24,25].

A consensus is finally appearing to designate cynicism and especially emotional burnout as central dimensions of job burnout [29,30,27]. These results are confirmed by a recent meta-analysis [31] which underscores a strong consensus of the studies around the heuristic which is defended by Schaufeli and Buunk [30] according to which the hard core of the "burnout" is exhaustion. Maslach [32] indicates that the in-depth study of job burnout must be based in particular on an analysis of the links between the experience of individuals at work and outside of the workplace.

Several studies report that the work/home interferences and vice versa seem to act as mediators between the social and organizational environment, the perception of the individual and the repercussions of a psychological order that affect him [13,33,12]. However, in other studies, we see that the work/home interface acts through job burnout, which itself acts on the degree of life satisfaction [19]. These repercussions can take on the form of a marked degree of exhaustion felt by the individual.

1.4 The Specific Features of the Dental Profession

With no surprise, it is clear that the difficulties linked to the articulation between the areas of life are detrimental to individuals. However, our survey of the literature shows that the links that unite the home/work interface variables, burnout and satisfaction, do not receive a consensus in the studies. This observation is all the more marked in the studies that concern a population that is particularly exposed - dentists. However, recent studies demonstrate that this population faces work demands which affect not only their professional lives, but also the management of time at work and outside of the workplace [34,35]. For example, Flourent [36] demonstrates that the average duration of their activity under artificial lighting is on the order of 30 to 50 hours per week. Some studies [36,37] report that a large share of dentists (20%) suffer from ocular problems and/or disorders of vertebral origin (cervical migraine, occipital neuralgia, lumbar spine syndrome). These problems occur

relatively early. They are observed as of their 5th year working [36]. We can add to these pathologies the occurrence of repetitive strain injury (TMS) which accounts for close to 26% of the cases of incapacity to work in this population (in [35]).

The dental profession is changing in many ways. These changes involve the constraints linked to the increasing complexity of their work systems, the working environment, and also changes in interactions with patients. With regard to patients, Flourent [36] reports that dentists are regularly confronted with “standard profiles” of potentially anxiety-causing patients (i.e. aggressive and depressive patients, those who are hungry for various types of information, phobic). Gorter [34] reports that the demands of the relationship with the patient (cf. “standard profiles”), the time pressure and the physical demands are among the main difficulties cited by dentists. The self-employed status of dentists exposes them to flexible working times which range from 30 to 50 hours per week, 4 to 6 days per week [36]. Some studies demonstrate that for 74% of dentists, the respecting of the appointment made for each patient is a major source of stress (op.cit., [36]). The same is true for the link between home life and work for dentists [34,35]. For example, Chaoping, Kan and Zhengxue [38] underscore the fact that the perception of the conflicts between work and home life accounts for a large share of the cases of emotional burnout among health care professionals (37% of the variance). It turns out that this fundamental aspect linked to the conciliation of areas of life is important at a time when we observe that close to 17% of the cases of incapacity to work among dentists are directly linked to suffering of a psychological

nature (in [39]). This suffering is expressed in particular through physical and/or somatic complaints [40,41,35,34].

2. GOALS OF THE STUDY

The goal of this research is to test three alternative models in path analysis, considering the relationships between home/work interferences, job burnout and satisfaction at work. The first model, presented by Fig. 1, puts forward the hypothesis that the home/work interferences play a mediating role between job burnout and satisfaction at work, as suggested by Peeters, Montgomery, Bakker and Schaufeli [42]. We see in this study that the home/work interferences (IPP) are significantly linked to job burnout.

The second alternative model (Fig. 2) sets forth the hypothesis that job burnout plays a mediating role between home/work interferences and job satisfaction. Some studies [43,44] report that the positive or negative effects of the home/work interface predict the degree of job burnout of the participants. Demerouti et al. [19] demonstrate that the private/family/professional requirements are linked to satisfaction through the burnout of the individuals. To explore the nature of the mediation, i.e. its total or partial nature [17], we followed the recommendations of Holmbeck [1].

A third and last model called partial mediation which suggests that the home/work interferences have both a direct and indirect effect (through job burnout) on satisfaction was tested (Fig. 3). The age, sex, marital status and seniority were put into the model as control variables.

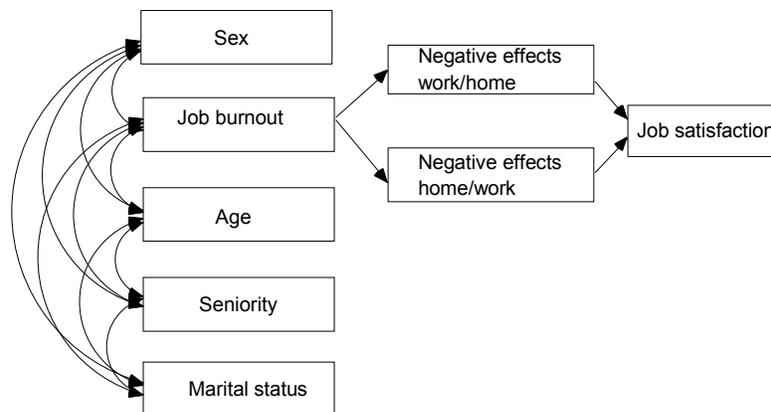


Fig. 1. Model of mediation: Work-Home interference

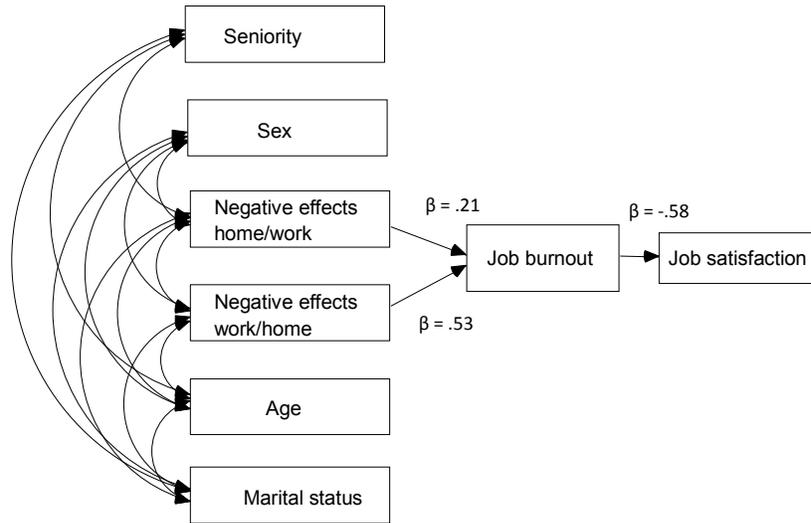


Fig. 2. Model of the total mediation of the burnout

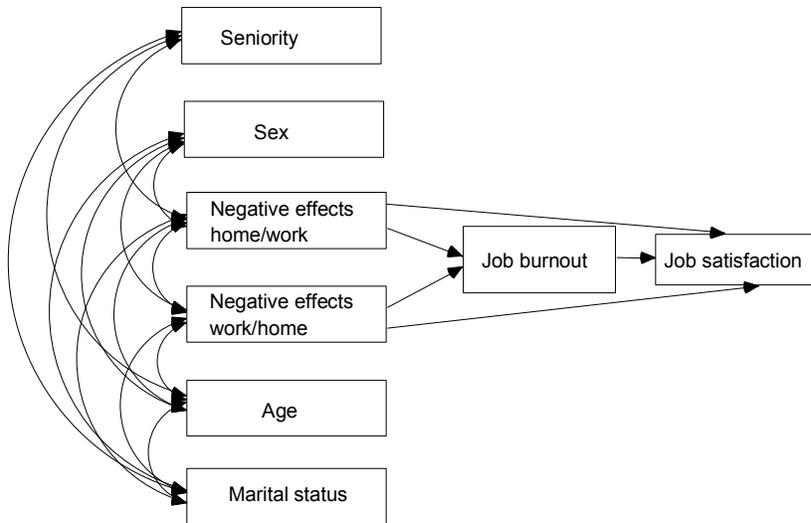


Fig. 3. Model of the partial mediation of the burnout

3. METHODS

3.1 Participants

This was a pilot study carried out in France with dentists in the Nord Department. The data was obtained through the mailing lists of the Order of the targeted department over the course of one three-month period. 627 letters were sent by post over a period of 3 months along with the newsletter of the Order of the profession. A letter was sent together with the instruments of measurement, in order to inform the participants

about the freedom of response and the importance of the research. Of the 627 dentists who were contacted, 95 volunteered their responses. The response rate was about 15%. The average age of all of the respondents was 43.86 years (SD = 9.70). Their average seniority was 15.91 years (SD = 9.65). The sample (n = 95) was composed of 32 women of an average age of 38.71 (SD = 9.44) and 63 men of an average age of 46.47 (SD = 8.80). This men/women proportion (about 33%/67%) is analogous to that found on the national level (35%/65%). The seniority of women in the

current job is 11.24 years (SD = 9.42) while it is 18.29 years (SD = 8.93) for men. With regard to the personal situation of the participants, 76% of them are married, 10% living together/civil union, 7% are single, 6% are divorced or separated and 1% are widowed.

3.2 Instruments of Measurement

A) First of all, the SWING tool. The scale of measurement of the home/work interferences (“Survey Work-home Interaction-Nijmegen”) of Geurts [45], Wagena and Geurts [46] in a French version and validated by Lourel, Gana and Wawrzyniak [47]. In our study, we used 2 (12 items) of the 4 sub-scales (22 items) that this instrument has. The goal of these 2 sub-scales, for which the psychometric qualities are very satisfactory (op.cit., [47]), is to evaluate the negative interferences: 1) Between private life and work [negative home-work interference: HWI negative] (4 items) (α of Cronbach: .62); 2) between work and private life [negative work-home interference: WHI negative] (8 items) (α of Cronbach: .87). The homogeneity of the scale was in accordance with the expectations. For each of these items, the participant is invited to respond on a scale of 4 points (never: 0; sometimes: 1; often: 2; always: 3). As an example, the *HWI negative* construct includes the following formulations “*Your family situation makes you so irritable that you take out your frustrations on your colleagues*” or “*You have difficulty concentrating on your work because you are worried about family problems*”. The *WHI negative* construct corresponds to the items “*You are irritable at home because your work is demanding*” or “*You find it difficult to fulfill your family obligations because you are always thinking about your work.*” The average score obtained on each construct corresponds to the sum of the scores provided by the respondents to each item of the targeted construct. The higher the score the more the negative effects of work on home and private life and inversely are felt by the individual.

B) Then, the BMS-10 in a short version (“Burnout Measure Short version”) of Malach-Pines [27]. This tool was adapted and validated in the French version by Lourel, Guéguen and Mouda [48]. This scale is supposed to evaluate the degree of psychological exhaustion which is felt by the individual. The BMS tool is unidimensional. It includes 10 items with a scale of responses in 7 points (1: never to 7: always) (example: “... *Did you feel tired*”; “... *Did you feel*

under pressure”; “...*Did you feel abandoned*”). The studies show that the short version in English (α of Cronbach: .86) has metrological qualities that are close to those obtained by the 21-item version (α of Cronbach: .90) (cf. [27, 26]). The same is true for the French version in 10 items of Lourel and Guéguen (α of Cronbach: .86). In our sample, the homogeneity of the scores obtained (α of Cronbach) is .87. The higher the score, the more the degree of burnout is felt by the individual.

C) Lastly, the ESVP instrument. This is the scale of overall job satisfaction adapted and validated by Fouquereau and Rioux [49] (2002). This instrument includes 5 items in 7 points (“totally agree” to “totally disagree”) with the goal of evaluating the degree of overall satisfaction of the individuals regarding their working life (example: “*I am satisfied with my job*”; “*Overall, my working life corresponds completely with my ideals*”). In our sample, the homogeneity of the scores obtained (α of Cronbach) is .81.

The higher the score, the more overall job satisfaction is expressed by the participant. It is a general measurement (and not “by facets”, see [50] for a detailed review) or an “overall” measurement of job satisfaction which is based on the studies of Diener, Emmons, Larsen and Griffin [51].

3.3 Statistical Analyses

The models in path analyses were subjected to testing with the Amos 4 software [52] using the Maximum Likelihood as the estimation method. The use of structural models with latent variables was not possible due to the narrowness of our sample. According to the recommendations of Hu and Bentler [53], we chose 2 adjustment indices: the CFI for which the value varies between 0 and 1, and the RMSEA for which the value has no limit. As a reminder, a model is better if its CFI is close to 1 with a threshold value of acceptability of .90, and its RMSEA is close to zero with a threshold value of acceptability less than or equal to .05.

To test the mediation hypothesis, we used the procedure suggested by Holmbeck [1,17,54,55] and which is carried out in three stages:

- 1). We must start by estimating the model of the direct effect, i.e. the effect of the predictor on the ultimate endogenous variable (*outcome*), by eliminating the

mediating variables. In our research, it is the model which advances the hypothesis that the home/work interferences have a significant effect on the overall job satisfaction in the absence of a job burnout process.

- 2). We must then test the total mediation model (Fig. 2).
- 3). Lastly, we must test the total mediation hypothesis through a comparison of this model (Fig. 2) with a partial mediation model (Fig. 3) which advances the hypothesis that the home/work interferences have a direct and indirect effect, via job burnout, on overall job satisfaction. According to Holmbeck [1], there is total mediation when the inclusion of the direct effect does not improve the overall appropriateness of the model.

4. EMPIRICAL RESULTS

4.1 Correlation Analysis

The correlations between the variables of this study are summarized in Table 1. We can see there that the burnout felt by the participants is positively linked to the negative effects of work on private life ($r = .57$) and to the negative effects of private life on work ($r = .33$). Very logically, the seniority is strongly correlated with age ($r = .79$) and to a lesser extent with the sex variable ($r = .38$). We will also see that job satisfaction is negatively correlated with the negative effects of work on private life ($r = -.40$), with the negative effects of private life on work ($r = -.29$) and the degree of burnout ($r = .56$). All of these correlations are significant at the threshold $p < .0001$ (Table 1).

4.2 Path Analyses

The adjustment indices of the competitive models tested are summarized in Table 2. We see here that the model that puts forward the hypothesis that the interferences between private life and work play a mediator role between job burnout and job satisfaction turns out to be in contradiction with our data (Fig. 1). Neither the χ^2 test nor the RMSEA value (.10) plead in its favor. However, the models that put forward the hypothesis of the mediation of job burnout turned out to be congruent with our data.

In accordance with the recommendations of the authors [17,1], we first tested the model of the

direct effect, thereby excluding the “job burnout” variable from the model. The results obtained, i.e. a CFI = 1.00 and an RMSEA = .0001 plead in favor of the adjustment of this model to our data. Examination of the estimates of the path analyses shows that the effect of the negative interferences between private life and work (HWIneg), and that of the negative interferences between work and private life (WHIneg) on job satisfaction turn out to be significantly negative (respectively $\beta = -.23$, $p < .05$ and $\beta = -.35$, $p < .05$). The existence of these significant effects allowed us to test the mediation hypothesis.

We thus tested the total mediation model (Fig.2). The results obtained, i.e. a CFI = 1.00 and a RMSEA = .0001 plead in favor of the appropriateness of this model for our data. Examination of the estimates of the path analyses shows a significant positive effect of the home/work negative interferences ($\beta = .21$, $p < .001$) and work/home negative interferences ($\beta = .53$, $p < .001$) on job burnout. The effect of the latter on job satisfaction was strongly and significantly negative ($\beta = -.58$, $p < .001$).

Lastly, with the aim of testing the total mediation hypothesis, a comparison of the preceding model with a partial mediation model (Fig. 3) is recommended. The results of the latter model, i.e. a CFI = 1.00 and RMSEA = .0001 are equivalent to those of the total mediation model. The addition of the 2 parameters expressing the direct effect of the interferences on job satisfaction did not improve the overall appropriateness of the model ($\Delta\chi^2 = 2.68$, $\Delta df = 2$). Furthermore, these 2 effects turned out to be zero (the effect of HWIneg = $-.12ns$, and that of WHIneg = $-.08ns$). These results plead in favor of the mediating role of job burnout between the negative interferences and the overall job satisfaction, because the presence of the “job burnout” variable in the model cancelled out the effect of these interferences although this effect existed in the absence of the aforesaid variable (job burnout).

5. DISCUSSION

5.1 Contributions of the Study

The goal of this study was to test competing models in path analyses that establish relationships between home/work interferences, job burnout and job satisfaction. The model that best suits our data is the one that hypothesizes

that job burnout plays a mediating role between home/work interferences and overall job satisfaction. This result is also reported in the study of Demerouti et al. [19] in which we can see that the effects of the home/work interferences of life satisfaction are mediated by the degree of burnout felt by the individual. To the best of our knowledge, the hypothesis was never verified with the population of dentists.

In our study, the observed mediation seems to be total because the partial mediation model doesn't provide a better match. Quite the contrary, because the direct and negative effect of the home/work interferences on job satisfaction is observed in the model of the direct effect, while it disappeared in the partial mediation model. This means that the presence of the "job burnout" variable in the model cancels this direct effect to mediate it. In other words, it is the degree of burnout which seems to regulate the effect of the negative interferences between home life and work and inversely on job satisfaction. It is a link between the two.

We can advance the idea that the negative interferences between home and work and vice versa severely test the resistance of the subject experiencing job burnout. This is before it affects his degree of overall job satisfaction. For example, we see in the study of Thompson, Brough and Schmidt [56] that the deleterious links that come into play between work and private life act successively on emotional burnout but also on job dissatisfaction. This point is important.

In this order, the stakes for society linked to the areas of life are discussed in the "conclusion" section hereafter.

Beyond the results, our study makes plausible the hypothesis according to which the porosity of the spheres of social belonging affects certain criteria of adjustment of the individual in relation to his environment. In this case, this involves job satisfaction. In our study however, the nature of the construct that is supposed to measure satisfaction does not allow us to finely discriminate between the different facets of job satisfaction (i.e. satisfaction with respect to colleagues, salary, tasks, etc.). The tool that we used was intended to illustrate overall job satisfaction and not satisfaction "by facets" (i.e. [50] for a detailed review). That said, our results are in line with the studies that show the extent to which work/home interferences affect the

perception of demands, and contribute to the etiology of certain behaviors that present health risks [13,33,42,21,12]. Some studies report that the spillover between the various spheres of life of the individual (professional, private and familial) acts on both the quality of life and the quality of sleep [57,58].

In any case, the attention aroused by the conciliation between private and working lives is important inasmuch as it can alter the psychological and physical health of individuals. This is the case for dentists.

In terms of psychic health, the studies of Gorter et al. [35] show that the job burnout of dentists has strong links with the management of private and professional lives, relations with patients and the demands of the job. Gorter et al. [39] report that a high level of burnout among dentists is associated with certain behaviors that are deleterious for health such as the consumption of alcohol, tobacco or a sedentary lifestyle. This goes in the same direction as relatively old studies that show that 25% of English dentists show a level of stress perceived as being very high [59]. The same is true for job burnout. In this regard, studies of Dutch dentists revealed that 13% of them present a high degree of weariness in the workplace [35,60]. We think that the improvement of the working experience of dentists must involve a comprehensive approach to occupational health. The same is true for the handling of the effects of work on private life. This issue is a real challenge with regard to the profound changes that are affecting work organization (see [61]). It must remain at the core of the outlook for research in the organizational psychology of health. We hope that our research can contribute to this.

5.2 Limits of the Study

In this section, four major limits are presented.

The first limit concerns the sample. Its narrowness leads us to maintain a certain prudence in the interpretation of the results. This bias linked to the sampling is one of the limits of our study. From a certain point of view, we know that the control of the parameter linked to the size of the effect does not in any way detract from the credibility of the empirical results (see [62,63] for an in-depth review). From another point of view, some investigations carried out on more limited samples confirm the value of a fine vision as does the heuristic scope that applies to it [64].

Table 1. Correlation matrix (n=95)

	Average	SD	α of Cronbach	1	2	3	4	5	6	7
1 - Age	43.86	9.70		1.00						
2 - Sex (1 = woman; 2 = man)				*0.38	1.00					
3 - Negative effects work/home (WHINeg)	8.75	4.41	0.87	-0.01	0.02	1.00				
4 - Negative effects home/work (HWINeg)	2.20	1.68	0.62	-0.06	-0.02	0.17	1.00			
5 - Seniority (in years)	15.91	9.65		*0.79	*0.34	-0.04	-0.13	1.00		
6 - Degree of burnout	3.83	.94	0.86	0.12	0.02	*0.57	*0.33	0.02	1.00	
7 - Job satisfaction	20.31	5.71	0.81	-0.06	-0.04	-.40	*-.29	-0.01	-.56	1.00

* $p < .0001$

Table 2. Fit indices of the models

Models	χ^2	ddl	RMSEA	CFI
Model Fig. 1	27.37	14	.101	.93
Direct effect	1.63	4	.0001	1.00
Total mediation (Fig. 2)	9.26	10	.0001	1.00
Partial mediation (Fig. 3)	6.58	8	.0001	1.00

We can add that the average score of the respondents on the BMS scale shows that they express a moderate level of psychological exhaustion (see rating: [27]). This point concerning the level of burnout is important inasmuch as it qualifies the scope of the results presented.

The second limit involves the mode of data collection, i.e. pencil and paper. This is a limit inherent to the format of our measurement instruments, a limit inherent to the modeling. The response rate (15%) is disappointing. Even if this study seems to show some interesting results, the low response rate reduces the scope of the results and thus their generalization. We think that the ergonomics (not very user-friendly) of the platform for entry of the information by the respondents and the communication orchestrated around the study were insufficient.

The third limit concerns the metric aspect which is presented in our study. In metric terms, a model designates a hypothetical system in which a set of phenomena have various relationships between them. It goes without saying that a model that properly adjusts the data does not necessarily hold the truth. Especially because the procedure that was used (that of [1]) does not allow for an estimation of a confidence interval around the supposed indirect effect [65,66]. Let us remember that the model tested is above all a simplified representation (sometimes simplifying), an approximation of the social reality. The results

of studies are worth what the measurements are worth, not to say the methods.

The fourth limit concerns the absence of results on the longitudinal level and repeated measurements, because this illumination of a longitudinal order allowed for a fine reading of the mechanisms of emotional and/or social regulation which are at work among the participants. The same is true for the imbrications between the areas of life or the priorities attributed by dentists to social roles, whether professional or private. As an example, we encourage the implementation of an approach which is original but relatively little used in psychology, not to say the Humanities. It is based on the paradigm of non-linear complex systems (CS). We think that the heuristic scope of CSs is very high. Synthetically, the complex system paradigm is based on the idea that a dynamic system oscillates between instability and organization. Recently, some authors proposed a new paradigm that supplemented the SC theory [63].

6. CONCLUSION

We can clearly state that the “work / home” issue results from fundamental choices and issues that lead to societal orientations [67]. In any event, beyond the statistical dimensions or the methodological aspects that illustrate a simplification of the observation of natural facts.

The studies show that women are more prone than men to the perception of the harmful effects of work on private life [4,67-70]. There is abundant literature concerning the difficulties caused by the overloading of the social roles according to gender [67].

After due consideration, the issue of the areas of life at work and outside must remain a major concern in Western societies undermined by precariousness, the impoverishment of jobs and their flexibility. These changes contribute substantially to the deterioration of the health of the populations. The issue raised corresponds to a strong social demand in a society that is still anchored in a traditional construction of family organization.

We can take as proof one example among others which is the breakdown of domestic chores.

As an introduction, let us remember that the 1960's saw the massive arrival of women on the labor market. The feminist or even gynarchic movements questioned, in an extremely virulent manner, the determiners of the social identity and the matrix of a certain form of cultural deconstruction. In the 1980's, the social, cultural and ideological systems with respect to men were the subject of in-depth thinking which was based on the analysis of masculine privileges with regard to their sexual identity [71]. Today, we see that the breakdown of responsibilities, particularly on the family level, is still marked by the stigma of traditional organization of the family core [67]. That is why the issue of the articulation of the various areas of life of individuals raises a multitude of issues which are now more relevant than ever before.

Firstly, it raises a social issue: Equal opportunity between men and women. It is jarring for remunerated activities because the salary difference between men and women is 14% with equal competencies.

Then, because the dissymmetry between men and women is just as great in terms of non-remunerated activities. Barrere-Maurisson [68] identifies two major families of non-remunerated activities:

The first one includes all of the tasks relating to household upkeep (tidying the house, cooking meals, shopping, house cleaning, etc.), while the second one covers the real or symbolic care of parents for their children. Many studies report

that fathers agree on the socialization of children to the detriment of household upkeep chores. These are left to the mothers.

So the relative changes in lifestyles still mean a heavy toll for women, whether in the workplace or in their private and family life. Trying "to be happy, if only to set an example," said Prévert. That's what we are getting at.

That is also why, to repeat it, the issue of life in and outside the workplace is universal, and it must remain one of the core issues of society.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Holmbeck GN. Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology*. 1997;65(4):599-610.
2. Allen TD, Johnson RC, Saboe K, Cho E, Dumani S, Estep-Evans S. Dispositional variables and work-family conflict: A meta-analysis. *Journal of Vocational Behavior*. 2012;80:17-26.
3. Mauno S, Ruokolainen M, Kinnunen U. Work-family conflict and enrichment from the perspective of psychosocial resources: Comparing Finnish healthcare workers by working schedules. *Applied Ergonomics*. 2015;48:86-94.
4. Duxbury L, Higgins C. Qui sont les personnes à risque ? Les variables prédictives d'un haut niveau de conflit entre le travail et la vie personnelle. Ottawa: Agence de santé publique du Canada (French); 2005;n°4:11-42.
5. Frone MR. Work-family balance. In Quick JC, Tetrick LE. (Eds.), *Handbook of occupational health psychology* (pp. 143-162). Washington, DC: American Psychological Association; 2003.

6. Young M. Work–family conflict in context: The impact of structural and perceived neighborhood disadvantage on work–family, *Social Science Research*. 2015;20:311-327.
7. Greenhaus JH, Beutell NJ. Sources of Conflict between Work and Family Roles. *Academy of Management Journal*. 1985;10:76–88.
8. Rothbard NP. Enriching or depleting. The dynamics of engagement in work and family roles. *Administrative Science Quarterly*. 2001;46:655-684.
9. Kossek EE, Ozeki C. Work family conflict, policies, and the job-life satisfaction relationship: A review and directions for organizational behaviour-human resources research. *Journal of Applied Psychology*. 1998;83:139-149.
10. O’Driscoll MP, Ilgen DR, Hildreth K. Time devoted to job and off-job activities, interrole conflict and affective experiences. *Journal of Applied Psychology*. 1992;77:272–279.
11. Galinsky E, Bond JT, Friendman DE. The changing workforce: Highlights of the National Study. New York: Families and Work Institute; 2003.
12. Voydanoff P. Implications of work and community demands and resources for work-to-family conflict and facilitation. *Journal of Occupational Health Psychology*. 2005;9(4):275–285.
13. Geurts SAE, Kompier MAJ, Roxburgh S, Houtman ILD. Does Work–Home Interference mediate the relationship between workload and well-being? *Journal of Vocational Behavior*. 2003;63(3):532–559.
14. Hammer LB, Kossek EE, Anger WK, Bodner T, Zimmerman K. Clarifying work-family intervention processes: The roles of work-family conflict and family supportive supervisor behaviors. *Journal of Applied Psychology*. 2011;96:134-150.
15. Hammer LB, Kossek EE, Yragui NL, Bodner TE, Hanson GC. Development and Validation of a Multidimensional Measure of Family Supportive Supervisor Behaviors (FSSB). *Journal of Management*. 2009;35:837-856.
16. Turliuc MN, Buliga D. Job and Family Satisfaction and Work-family Enhancement. Mediating Processes. *Procedia - Social and Behavioral Sciences*. 2014;159:115-119.
17. Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*. 1986;51:1173–1182.
18. Rascle N, Irachabal S. Mediators and moderators: Theoretical and methodological implications in the field of stress and health psychology. *Travail Humain*. 2001;64(4):97–118. French.
19. Demerouti E, Bakker AB, Schaufeli WB. Spillover and crossover of exhaustion and life satisfaction among dual-earner parents. *Journal of Vocational Behavior*, 2005;67(2):266–289.
20. Bruck CS, Allen TD, Spector PE. The Relation between Work–Family Conflict and Job Satisfaction: A Finer-Grained Analysis. *Journal of Vocational Behavior*. 2002;2005:60(3):336–353.
21. Roos E, Lahelma E, Rahkonen O. Work–family conflicts and drinking behaviors among employed women and men. *Drug and Alcohol dependence*. 2006;83(1):49–56.
22. Mesmer-Magnus JR, Viswesvaran C. Convergence between measures of Work-to-Family and Family-to-Work conflicts: A meta-analytic examination. *Journal of Vocational Behavior*. 2005;67(2):215–232.
23. Freudenberger HJ. Staff Burn-Out. *Journal of Social Issues*. 1974;30(1):159–165.
24. Maslach C, Jackson SE. The Maslach Burnout Inventory. Research edition. Palo Alto: Consulting Psychologists Press; 1981.
25. Maslach C, Jackson SE. The Maslach Burnout Inventory. Manual. Palo Alto: Consulting Psychologists Press; 1986.
26. Pines AM, Aronson E. Career burnout: Causes and Cures. New-York: Free Press; 1988.
27. Malach-Pines A. The Burnout Measure Short version (BMS). *International Journal of Stress Management*. 2005;12(1):78–88.
28. Schaufeli WB, Van Dierendonck D. The construct validity of two burnout measures. *Journal of Organizational Behavior*. 1993;14:631–647.
29. Schaufeli WB, Enzmann D. The burnout companion to study and practice: A critical analysis. London: Taylor and Francis; 1998.
30. Schaufeli WB, Buunk BP. Burnout: an overview of 25 years of research and theorizing. In: Schabracq MJ, Winnubst

- JAM, Cooper CL. (Eds), Handbook of Work and Health Psychology. Chichester: Wiley. 2003;383–425:Chapter 19.
31. Lourel M, Guéguen N. A meta-analysis of the extent of burnout using the MBI instrument. *L'Encéphale* (French). 2007;33(6):947–953.
 32. Maslach C. Understanding Burnout: Work and family issues. In: Halpern DF, Murphy SE. (Eds), *From Work-Family balance to Work-Family interaction: Changing the metaphor*. Mahwah: Lawrence Erlbaum Associates Publishers. 2005;Chapter 8.
 33. Kinnunen U, Feldt T, Geurts SAE, Pulkkinen L. Types of work-family interface: Well-being correlates of negative and positive spillover between work and family. *Scandinavian Journal of Psychology*. 2006;47(2):149–162.
 34. Gorter RC. Burnout among Dutch dentists: Identification and Prevention. Doctoral Thesis. Amsterdam: University of Amsterdam; 2000.
 35. Gorter RC, Albrecht G, Hoogstraten J, Eijkman MAJ. Work place characteristics, work stress and burnout among Dutch dentists. *European Journal of Oral Sciences* 1998;106:999–1005.
 36. Flourent J. A propos du stress du dentiste. Analyse statistique. Doctoral Thesis. Lille: University of Lille 2 (French); 2006.
 37. Ginisty J. Results of the survey on occupational diseases of dentists. *Bulletin de l'Académie Nationale de Chirurgie Dentaire* (French). 2002;45(4):107–113.
 38. Chaoping L, Kan S, Zhengxue L. Work-family conflict and job burnout of doctors and nurses. *Chinese Mental Health Journal*. 2003;17(12):807–809.
 39. Gorter RC, Eijkman MAJ, Hoogstraten J. Burnout and health among Dutch dentists. *European Journal of Oral Sciences*. 2000;108:261–267.
 40. Brake JHM, Gorter RC, Hoogstraten J, Eijkman MAJ. Burnout intervention among Dutch dentists: Long-term effects. *European Journal of Oral Sciences*. 2001;109:380–387.
 41. Hakonen JJ, Bakker AB, Demerouti E. How dentists cope with their job demands and stay engaged: The moderating role of job resources. *European Journal of Oral Sciences*. 2005;113:479–487.
 42. Peeters MCW, Montgomery AJ, Bakker AB, Schaufeli WB. Balancing work and home: How job and home demands are related to burnout. *Int J Stress Manag*. 2005;12:43–61.
 43. Brummelhuis LLT, Van der Lippe T, Kluwer ES, Flap H. Positive and negative effects of family involvement on work-related burnout. *Journal of Vocational Behavior*. 2008;73(3):387–396.
 44. Innstrand ST, Langballe EM, Espnes GA, Falkum E, Aasland OG. Positive and negative work-family interaction and burnout: A longitudinal study of reciprocal relations. *Work & Stress*. 2008;22(1):1–15.
 45. Geurts SAE. SWING: Survey work-home interaction – Nijmegen (Internal research report). University of Nijmegen, Nijmegen, the Netherlands; 2000.
 46. Wagena E, Geurts SAE. SWING. Development and Validation of the “Survey Work-Home interaction – Nijmegen” *Gedrag en Gezondheid*. 2008;28:138–158.
 47. Lourel M, Gana K, Wawrzyniak S. The interface “Privacy – Work life”: Adaptation and validation of the French SWING scale. (Survey Work-home Interaction – Nijmegen). *Psychologie du Travail et des Organisations*. (French). 2005;11(4):227–239.
 48. Lourel M, Guéguen N, Mouda F. The assessment of burnout Pines: Adaptation and validation in the French version of the instrument” Burnout Measure Short version” (BMS-10). *Pratiques Psychologiques*. 2007;13(3):353–364.
 49. Fouquereau E, Rioux L. Development of the Professional life Satisfaction Scale (ESVP) in French: An exploratory approach. *Revue Canadienne des Sciences du Comportement* (French). 2002;34(3):210–215.
 50. Spector P. *Job Satisfaction: Application, Assessment Causes and Consequences*. CA: SAGE Publications; 1997.
 51. Diener E, Emmons RA, Larsen RJ, Griffin S. The Satisfaction with Life Scale. *Journal of Personality Assessment*. 1985;49:71–75.
 52. Arbuckle JL, Wothke W. *Amos 4.0 user's guide*. Chicago: Smallwaters; 1999.
 53. Hu L, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus alternatives. *Structural Equation Modeling*. 1999;6:1–55.
 54. Brown RL. Assessing specific mediational effects in complex theoretical models. *Structural Equation Modeling*. 1997;4:142–156.

55. Sobel ME. Asymptotic intervals for indirect effects in structural equations models. In S. Leinhardt (Ed.), *Sociological Methodology*. San-Francisco: Jossey-Bass; 1982;290–312.
56. Thompson BM, Brough PA, Schmidt H. Supervisor and subordinate work-family values: does similarity make a difference? *International Journal of Stress Management*. 2006;13(1):45–63.
57. Moore J. Home working and work-life balance: Does it add to quality of life?. *European Review of Applied Psychology*. 2006;56(1):5–13.
58. Williams A, Franche RL, Ibrahim S, Mustard CA, Roussy-Layton F. Examining the Relationship Between Work-Family Spillover and Sleep Quality. *Journal of Occupational Health Psychology*. 2006;11(1):27–37.
59. Kay EJ, Scarrott DM. A survey of dental professionals' health and well-being. *British Dental Journal*. 1997;183:340–345.
60. Gorter RC, Albrecht G, Hoogstraten J, Eijkman MAJ. Professional burnout among Dutch dentists. *Community Dentistry and Oral Epidemiology*. 1999;27:109–116.
61. Schaufeli WB. The future of occupational health psychology. *Applied Psychology: An International Review*. 2004;53(4):502–517.
62. Lourel M, Guéguen N, Pascual A, Mouda F. The importance of effect: A simple methodology for the "effect size". *Psychology*. 2011;2(6):631–632.
63. Lourel M, Petric-Tatu O, Guéguen N, Pascual A. Theories of complex systems: presentation of a new paradigm in psychology. *Materials, Methods & Technologies*. 2012;6(1):351-359.
64. Sonnenschein M, Sorbi MJ, Van Doornen LJP, Schaufeli WB, Maas C. Evidence that impaired sleep recovery may complicate burnout improvement independently of depressive mood. *Journal of Psychosomatic Research*. 2007;4(62): 487–494.
65. MacKinnon DP, Lockwood CM, Hoffman JM, West SG, Sheets V. A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods*. 2002;7:83–104.
66. MacKinnon DP, Lockwood CM, Williams J. Confidence limits for the indirect effect: distribution of the product and resampling methods. *Multivariate Behavioral Research*. 2004;39:99–128.
67. Closon C, Lourel M. *Work life balance – private life: The questions in sites*. Paris: L'Harmattan (French); 2013.
68. Barrere-Maurisson MA. Male/female: towards a new division of roles? *Cahiers Français "Famille(s) et politiques familiales (French)*. 2004;322:22–28.
69. Jaga A. Antecedents of work-family conflict among Hindu working women in South Africa: Stressors, social support and cultural values, *Management Studies*, Faculty of Commerce: 241. Cape Town: University of Cape Town; 2014.
70. Michel JS, Mitchelson JK, Clark M, Young LM, Baltes BB. Antecedents of work-family conflict: A meta-analytic review. *Journal of Organizational Behavior*. 2011;689-725.
71. Badinter E. *XY: Identity of masculine*. Paris: Odile Jacob (French); 1986;First edition.

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