

Identifying work-related factors associated with work–family conflict of care workers in nursing homes: A cross-sectional study

Claudia Hauser^{1,2} | Jonathan Stahl^{1,3} | Michael Simon¹  | Sabine Valenta^{1,4} |
Lauriane Favez^{1,5} | Franziska Zúñiga¹  

¹Department Public Health, Faculty of Medicine, Institute of Nursing Science, University of Basel, Basel, Switzerland

²Department of Breast, Abdomen, Pelvis, University Hospital Basel, Basel, Switzerland

³Department of Nursing Development, Cantonal Hospital Aarau, Aarau, Switzerland

⁴Department of Hematology, University Hospital Basel, Basel, Switzerland

⁵School of Engineering and Management Vaud, HES-SO University of Applied Sciences and Arts, Yverdon-les-Bains, Switzerland

Correspondence

Franziska Zúñiga, Institute of Nursing Science, University of Basel, Bernoullistrasse 28, 4056 Basel, Switzerland.
Email: franziska.zuniga@unibas.ch

Funding information

Participating nursing homes

Abstract

Aims: To investigate which work-related factors are associated with work–family conflict of care workers in nursing homes, this study aimed to: (a) describe the prevalence of work–family conflict of care workers in nursing homes and (b) assess the association of work-related factors with work–family conflict.

Design: Cross-sectional multicentre sub-study based on data from the Swiss Nursing Homes Human Resources Project 2018.

Methods: Data were collected between September 2018 and October 2019. Work–family conflict of care workers was assessed with the Work–Family Conflict Scale (range 1–5). Prevalence was described in percentages. We used multilevel linear regression to assess the association of time-based factors (working overtime or during one's free time, employment percentage, presenteeism, shift working) and strain-based factors (staffing adequacy, leadership support) with work–family conflict.

Results: Our study sample consisted of 4324 care workers working in a total of 114 nursing homes. Overall, 31.2% of respondents stated to have experienced work–family conflict (>3.0 on the Work–Family Conflict Scale). The overall mean score of the study sample for work–family conflict was 2.5. Care workers experiencing presenteeism 10 or more days per year showed the highest scores for work–family conflict (mean: 3.1). All included predictor variables were significant ($p < .05$).

Conclusion: Work–family conflict is multifactorial. Possible intervention points to tackle work–family conflict could be strengthening care workers' influence in planning work schedules, enabling flexible planning to ensure adequate staffing, lowering presenteeism and implementing a supportive leadership style.

Impact: Care workers' jobs become less desirable when workplace demands interfere with family life. This study highlights the multifaceted nature of work–family conflict and suggests intervention options to prevent care workers from experiencing work–family conflict. Action is needed at nursing home and policy level.

KEYWORDS

health care management, long-term care, nursing home, work–family conflict, working conditions

1 | INTRODUCTION

High turnover and increasing numbers of care workers in nursing homes (NHs) reaching retirement age are threatening the future health care of older, care-dependent people (International Council of Nurses, 2021). The International Council of Nurses (2021) estimated that thirteen million additional nurses are needed worldwide until 2030, including in NHs. This need is jeopardized by the high risk for care workers to experience work–family conflict (WFC) (Blanco-Donoso et al., 2021; Grzywacz et al., 2006). WFC describes an inter-role conflict in which participating in the work role impedes participating in the private life and family role (Greenhaus & Beutell, 1985). Besides having multiple negative effects on care workers' health (Berkman et al., 2015; Pien et al., 2021), WFC increases the risk of care workers leaving the job and profession (Yildiz et al., 2021). The Covid-19 pandemic has further increased the urgency of the nursing shortage, which puts WFC high on the agenda of factors to be explored in-depth (International Council of Nurses, 2021). Reaching low levels of WFC must be a priority for NH managements and policy makers in order to retain care workers in NHs and to ensure future health care of older, care-dependent people.

2 | BACKGROUND

Greenhaus and Beutell (1985) developed the Work-Family Role Pressure Incompatibility model, which described the work and family domains as interdependent and therefore connected. They sub-grouped WFC into three different types of conflict: time-based (e.g. working overtime), strain-based (e.g. work stress) and behaviour-based conflict (e.g. discrepancies of required behaviour in work and family role) (Greenhaus & Beutell, 1985). Role characteristics that affect a person's time commitment, strain or behaviour can lead to an inter-role conflict. The conflict may exacerbate when being reprimanded for not fulfilling role requirements (i.e. picking up children late from childcare due to working overtime and being reprimanded for it by the caregiver) or by strong identification with the work or family role. This Work-Family Role Pressure Incompatibility model guided our research about care workers' WFC in Swiss NHs.

Generally, WFC has been well-researched, but health care-specific research is still limited, especially in the NH setting (Yildiz et al., 2021). Overall, WFC was found to be related to turnover intentions in nursing care, indicating the need to alter work-related job characteristics and working conditions (Nei et al., 2015). Haddad et al. (2023) suggested that the conflict between career and having a family is one of the main causes of the nursing shortage, in

part because the workforce is predominantly female and family work is still mostly performed by women. Specifically, WFC can lower nurses' job satisfaction (Buonocore & Russo, 2013), indicating that their jobs become less desirable when workplace demands interfere with family life, respectively private life. Therefore, enabling low levels of WFC could help retain nurses in their job (Yildiz et al., 2021).

Most of the findings are about nurses experiencing WFC, but evidence about all care workers in nursing care is rare. The term 'care workers' includes all staff providing direct care services in NHs, such as registered nurses (RNs), licensed practical nurses (LPNs), certified nursing assistants (CNAs) and nursing aides (NAs). In this setting, higher WFC is associated with aspects hazardous to health, as for example increased cardiometabolic risk for care workers (Berkman et al., 2015). Also, negative feelings like emotional exhaustion and cynicism may be provoked by WFC leading to decreased health, for example, in the form of burnout (Wang et al., 2012). Therefore, WFC can have physical and psychological health consequences. Besides increasing health issues and job dissatisfaction for care workers, WFC also causes unnecessary costs for NHs, for example, by leading to higher absenteeism (Dowd et al., 2017). In summary, the consequences of WFC are detrimental for both the care workers and NH managements. Thus, preventive measures are needed.

So far, the scarce literature about WFC in NHs describes time- and strain-based influencing factors associated with WFC. Regarding time-based conflicts, findings indicate higher WFC when staff worked overtime, had more numbers of working hours per week, worked different shifts (day and night shifts) or shorter shift lengths (Simon et al., 2004; Zhang et al., 2016, 2017). Concerning strain-based conflicts, WFC was found to be higher with higher job demands, lower job control, lower social support, higher workplace stress, higher physical and psychological demands and the experience of residents' aggression (Heidenreich & Kuhnke-Wagner, 2012; Simon et al., 2004; Zhang et al., 2017). Furthermore, better rated quality of leadership was associated with higher work–family balance (Wüstner, 2019). However, findings about factors associated with WFC of care workers in NHs are limited, only few studies were theory driven and only one study differentiated between time- and strain-based conflict so far (Simon et al., 2004). Accordingly, further work specifically pertaining to the NH setting is needed. Stronger evidence in this field would greatly advance the knowledge about the changes needed to lower WFC of care workers in NHs. Given the growing need of care workers in this setting, it is essential to gain a better understanding specifically about work-related (time-based and strain-based) factors to be able to initiate lasting changes in the institutions in order to reduce turnover and retain care workers in their job.

3 | THE STUDY

3.1 | Aims

The overall aim of this study was to investigate, which work-related factors (time and strain based) are associated with WFC of care workers in NHs. Specifically, we aimed to: (a) describe the prevalence of WFC in NHs and (b) assess the association of work-related factors with WFC.

4 | METHODS

4.1 | Design

This multicentre, cross-sectional study is a sub-study of the Swiss Nursing Homes Human Resources Project (SHURP) 2018, which took place as a one-time paper and pencil survey in the German- and French-speaking part of Switzerland. SHURP 2018 was a research project that aimed to explore organizational and work environment conditions in NHs in view of providing quality care and improving care workers outcomes. SHURP 2018 builds on the former SHURP 2013 (Schwendimann et al., 2014).

4.2 | Sample

The study performed a two-stage sampling using convenience sampling: first, all NHs which took part in the former SHURP 2013 study were asked to participate again (Schwendimann et al., 2014). Second, a random sample of further Swiss NHs were invited to participate based on the full list of cantonally recognized NHs in the German- and French-speaking part of Switzerland. Additionally, some NHs contacted the researchers directly to take part in the study as they had heard of the planned study from NH associations. NHs with at least 20 beds and cantonal recognition as NH were eligible. NHs with less than 20 beds were excluded. Overall, 118 NHs participated in the SHURP 2018 study, of which 20 (17%) were from the French-speaking and 98 (83%) from the German-speaking part of Switzerland. Within each NH, all care workers who had a percentage of employment of 20% (i.e. 8h/week) or more and who were working for at least 3 months in their respective institution were eligible. Care workers who did not fulfill these two criteria were excluded as they would not have enough work experience in the respective NH. As the study served multiple aims, no formal power analysis was conducted. Taking the considerations of Hox et al. (2017) on sample size calculation in multilevel analyses into account (at least 30 groups with at least 30 individuals), the required power for this study was met.

4.3 | Variables and measurements

All included variables and their answer options are shown in Table 1. To measure the outcome variable WFC, we applied the

Work-Family Conflict Scale of Netemeyer et al. (1996). Our confirmatory analysis showed a well-fitting model for the five items of this scale (Chi-square test=0.0, df=5, CFI=0.99, TLI=0.98, RMSA=0.083 (90%-CI=0.072-0.094), SRMR=0.012) with a Cronbach's alpha of 0.92. Predictors covered both time-based and strain-based conflicts. We used socio-demographic and facility level control variables (e.g. residents' care level). Care level was assessed with the resident classification and billing systems in Swiss NHs: Resident Assessment and Billing System (BewohnerInnen-Einstufungs- und Abrechnungssystem: BESA) and the 'Resident Assessment Instrument for Nursing Homes' (RAI-NH). In BESA and RAI-NH, residents are assigned a level (range: 1-12), where a higher level indicates a higher amount of care time needed.

4.4 | Data collection

The data collection took place between September 2018 and October 2019. Data were collected via questionnaire surveys in either German or French. The care worker questionnaires were in paper format and returned by the care workers individually with a prepaid return envelope. To collect descriptive information about the NHs (e.g. number of beds), one questionnaire per facility was completed by the correspondent NH management. The participating NHs were asked to choose a 2-month period within the above-mentioned time frame, in which they conducted the one-time survey. Resident data (e.g. care level) were collected using the billing systems of the NHs and data were transferred to the research team via a secure link. For analysis, the questionnaires were coded to assign care workers to a facility and to a unit within the facility.

4.5 | Ethical considerations

Written consent was required from the management of the participating NHs to participate in SHURP 2018. Returning the voluntary care worker questionnaire was considered as informed consent. SHURP 2018 was reviewed and received an ethics waiver from the responsible Swiss ethics committee (the Northwest and Central Switzerland ethics committee, BASEC Nr Req-2018-00420).

4.6 | Data analysis

For the data analysis we used R version 1.4.1717. NHs with complete data about full-time equivalent (FTE) posts, grade mix and care level of the residents were included ($n=114$). First, care level at resident level was aggregated to the facility level by calculating the mean per facility and merged with the facility level data. Then, all facility level data (i.e. mean resident care level, FTE per 100 beds, grade mix) were disaggregated to the care worker level by

TABLE 1 Overview of the included variables.

Variable name	Source; number of items used; level	Items	Answer options	Cronbach's alpha; calculation for scales
Outcome				
Work-family conflict	Netemeyer et al. (1996); 5; care worker level	<ul style="list-style-type: none"> The demands of my work interfere with my home and family life. The amount of time my job takes up makes it difficult to fulfil family responsibilities. Things I want to do at home do not get done because of the demands my job puts on me. My job produces strain that makes it difficult to fulfil family duties. Due to work-related duties, I have to make changes to my plans for family activities. 	1 = disagree; 2 = slightly disagree; 3 = neutral; 4 = slightly agree; 5 = agree	Cronbach's α : 0.92; Mean-score over all items. Care workers who answered at least one item were included. Lower number indicates a better rated work-family conflict.
Predictors				
Overtime	Self-developed; 1; care worker level	How often do you work more than 30 minutes overtime?	Almost every shift to every 4 working days; every 5–7 working days; less frequently	–
Work for residents during free time	Self-developed; 1; care worker level	How often do you spend your free time doing work for the residents? (e.g. running errands for residents)	Always-sometimes; rarely; never	–
Employment percentage (100% = 42 h per week)	Self-developed; 1; care worker level	What is your working percentage?	≤50%; 51–90%; 91–100%	–
Presenteeism	Kristensen et al. (2005); 1; care worker level	How many days have you gone to work in spite of feeling ill and unfit for work in the last 4 weeks?	No days; 9 days at most; 10 and more days	–
Shift	Self-developed; 1; care worker level	When do you work most often?	Day shift; split day shift; evening and night shift; regular change	–
Staffing adequacy	Subscale of the Practice Environment Scale–Nurse Working Index (PES-NWI) (Lake, 2007); 3; care worker level	<p>Statements about your workplace: There is</p> <ul style="list-style-type: none"> Enough time and opportunity to discuss resident care problems with other care workers Enough registered nurses/qualified personnel to provide quality resident care Enough staff to get the work done 	1 = strongly disagree; 2 = slightly disagree; 3 = slightly agree; 4 = strongly agree	Cronbach's α : 0.76; Mean-score over all items. Care workers who answered at least one item were included. Higher number indicates a better rated staffing adequacy.
Leadership support	Subscale of the Practice Environment Scale – Nurse Working Index (PES-NWI) (Lake, 2007); 5; care worker level	<p>Statements about your workplace: There is</p> <ul style="list-style-type: none"> A supervisory staff who is supportive of the care workers A supervisory staff, who uses mistakes as learning opportunities, not criticism A nurse/unit manager who is a competent leader Praise and recognition for a job well done A nurse/unit manager who backs up the care worker staff in decision making, even if the conflict is with other professions 	1 = strongly disagree; 2 = slightly disagree; 3 = slightly agree; 4 = strongly agree	Cronbach's α : 0.83; Mean-score over all items. Care workers who answered at least one item were included. Higher number indicates a better rated leadership support.

TABLE 1 (Continued)

Variable name	Source; number of items used; level	Items	Answer options	Cronbach's alpha; calculation for scales
Control variables				
Profession	Self-developed; 1; care worker level	What is your job position in this nursing home?	Registered N=nurse and higher (BScN and MScN); licensed practical nurse; certified Nursing assistant; nursing aides; other (e.g. trainee)	-
Gender	Self-developed; 1; care worker level	What is your gender?	Female; male	-
Age	Self-developed; 1; care worker level	To which age category do you belong to?	≤35; 36–50; ≥51	-
Full-time equivalent	Self-developed; 1; facility level	Full-time equivalent per 100 beds	Numeric, not specified	-
Grade mix	Self-developed; 1; facility level	Percentage of registered nurses in the unit (out of all care workers)	0–100	-
Care level	Krankenpflege-Leistungsverordnung (KLV) (2022); 1; resident level	BESA (Version 5), RAI-NH (Minimum Data Set 2016)	1–12	-

Abbreviations: BESA, 'BewohnerInnen-Einstufungs- und Abrechnungssystem' (Resident classification and billing system); BScN, Bachelor of Science in Nursing; MScN, Master of Science in Nursing; RAI-NH, Resident Assessment Instrument for Nursing Homes'.

assigning the same values to care workers from the same facilities to merge with the care worker level data, resulting in a final data set on the care worker level. Data were checked for missing values. Generally, missing values were low as the item with the highest percentage of missing was presenteeism with 1.5% (see Table 2). Depending on the distribution of the data, we calculated the mean and the standard deviation (SD) for numeric variables. For factor variables and also to describe the prevalence of WFC, we calculated percentages. Additionally, we calculated the mean WFC score of subgroups on the different response options of factor variables. To assess whether a multilevel model was indicated, we calculated the intraclass correlation 1 (ICC1). Based on the ICC 1 score (0.07) we used a multilevel analysis approach for the inferential analysis. Given the normal distribution of the outcome, we computed linear mixed models (LMMs). Predictor and control variables were introduced in the model at the care worker level and NHs were included as a random effect.

We first created a regression model for each predictor variable on its own to see the association between WFC and the predictor variable. If the p -value was $\leq .2$, the predictor variable was kept in the regression model. In a second step, we did run the model with all predictor variables. The level for significance was set at $p < .05$. Nonsignificant variables were removed stepwise from this model, so that the final model only contained significant variables and had the best fit. We generally chose the simpler model, meaning the model with fewer variables and a lower Akaike information criterion (AIC).

4.7 | Validity and reliability

The psychometric properties of the scales used are described in the section 'variables and measurements' and in Table 1. The scales, originally written in English or German, have been translated into German and French with a forward and backward translation approach, assessing contextual fit with native speakers from the field (Schwendimann et al., 2014). Comprehensibility and understandability of items were assessed with care workers for the staff questionnaire. NH administrators and Swiss NH Association executives gave feedback on the relevancy and comprehensibility of items and data availability at facility level (Schwendimann et al., 2014).

5 | RESULTS

5.1 | Characteristics of the sample

As shown in Table 2, our study sample consists of 4324 care workers working in a total of 114 NHs. Of care workers, 88.5% were female. A 37.2% of care workers were 35 years old or younger, 29.2% were between 36 and 50 years old and 33.6% were 51 years and older. Approximately half of the care workers (47.5%) worked in a medium NH (50–99 beds), 29.7% in a large NH (≥ 100 beds) and 22.8% in a small NH (< 50 beds). Most care workers (83.1%) worked in the German-speaking language region, while only 16.9% worked in the French-speaking language region. About half of the care workers

TABLE 2 Characteristics of the included variables.

Variable name	n (%)	Mean (SD)	Missings (%)
Total	4324		
Outcome			
WFC (range: 1–5)	4316	2.5 (1.1)	8 (0.2)
Predictors			
Overtime	4292		32 (0.7)
Almost every shift to every 4 working days	804 (18.7)		
Every 5–7 working days	796 (18.6)		
Less frequently	2692 (62.7)		
Work for residents during free time	4296		28 (0.6)
Always–Sometimes	1001 (23.3)		
Rarely	1465 (34.1)		
Never	1830 (42.6)		
Employment percentage	4324		0 (0.0)
≤50%	663 (15.3)		
51–90%	2316 (53.6)		
91–100%	1345 (31.1)		
Presenteeism	4258		66 (1.5)
No days	1357 (31.9)		
9 days at most	1894 (44.5)		
More than 10 days	1007 (23.6)		
Shift	4310		14 (0.3)
Day shift	876 (20.3)		
Evening and night shift	664 (15.4)		
Regular change	2142 (49.7)		
Split day shift	628 (14.6)		
Staffing adequacy (range: 1–4)	4278	2.7 (0.7)	46 (1.1)
Leadership support (range: 1–4)	4281	3.2 (0.6)	43 (1.0)
Control variables			
Profession	4308		16 (0.4)
Registered nurse and higher (BScN and MScN)	1140 (26.8)		
Licensed practical nurse	1211 (28.5)		
Certified nursing assistant	726 (16.6)		
Nursing aides	886 (20.2)		
Other (e.g. trainee)	345 (7.9)		

TABLE 2 (Continued)

Variable name	n (%)	Mean (SD)	Missings (%)
Gender	4275		49 (1.1)
Female	3786 (88.5)		
Male	489 (11.5)		
Age	4307		17 (0.4)
≤35	1601 (37.2)		
36–50	1248 (29.2)		
>50	1458 (33.6)		
FTE per 100 beds (range: 13.4–85.0) ^a	114	47.0 (14.1)	0 (0.0)
Grade mix (% registered nurses) (range: 8.3–67.2) ^a	114	28.3 (10.6)	0 (0.0)
Care level of the residents (range: 1.6–10.3) ^a	114	6.1 (1.7)	0 (0.0)

Abbreviations: BScN, Bachelor of Science in Nursing; FTE, Full-time equivalent; MScN, Master of Science in Nursing; SD, Standard deviation; WFC, Work–family conflict.

^aValues refer to facility level data.

reported working in public NHs (45.8%) and the other half in private NHs (54.2%). Overall response rate was 66.0%. Detailed information about the characteristics of our included variables can be seen in [Table 2](#).

5.2 | Prevalence of WFC in NHs

Almost one third (31.2%) of the care workers had a mean WFC score of over 3, meaning they have experienced WFC. A total of 12.7% care workers stated to never experience WFC (WFC=1). Overall, the mean score for WFC was 2.5 with an SD of 1.1. The mean score of WFC was slightly higher for male care workers (mean=2.6) than for female care workers (mean=2.5). As for profession, LPNs had the highest mean score of WFC with 2.7 and NAs the lowest with a mean of 2.3. Care workers with an educational degree as RN or higher as well as CNAs had a mean score of 2.5.

Care workers who reported working overtime *every five to seven working days* (mean: 2.7) or *less frequently* (mean: 2.3) experienced less WFC than care workers working overtime *almost every shift to every four working days* (mean: 3.0). Also, care workers who reported to work for residents during free time *rarely* (mean: 2.5) or *never* (mean: 2.3) experienced less WFC than those reporting working during free time *always to sometimes* (mean: 2.9). In terms of employment percentage, care workers who were working part-time showed less WFC

(51%–90%, mean: 2.5; $\leq 50\%$, mean: 2.1) than care workers with a higher employment percentage ($\geq 91\%$, mean: 2.6). Furthermore, care workers who were experiencing presenteeism *9 days at most* (mean: 2.6) or *no days* (mean: 2.0) during the last year had lower WFC, than those who worked *10 or more days* (mean: 3.1) despite feeling ill. Regarding shift work, care workers who mostly worked during *evening and night shift* (mean: 2.3) or during *day shift* (mean: 2.4) showed lower scores for WFC than care workers who usually worked shifts in *regular change* (mean: 2.6) or *split day shift* (mean: 2.8).

5.3 | Predictors for WFC

In our LMM with only one predictor, every included variable besides care level (p -value: .63) had at least one answer option with a p -value $\leq .2$ (Table 3). Therefore, all variables except care level were introduced in further modelling. With the backward approach, the variables FTE posts and age were nonsignificant (p -value $>.05$). All other variables were significant and included to the final model (Table 3). The final model had the lowest AIC of all LMM. Tests for multicollinearity indicated non-multicollinearity (variance inflation factor range: 1.03–1.54).

5.3.1 | Results for time-based predictors

Working overtime or during free time for residents showed a negative association. Based on the answer options for these variables, care workers who worked overtime or during free time for residents less often reported lower scores for WFC. The other time-based predictors employment percentage, presenteeism and shift had positive associations. This indicates that care workers who reported to have a higher employment percentage, to experience presenteeism more often and to do shift work had higher scores for WFC. Estimates and p -values for each answer option of the predictors can be seen in Table 3.

5.3.2 | Results for strain-based predictors

Staffing adequacy and leadership support showed a negative association with WFC. Care workers who reported poor perceived staffing adequacy or leadership support had higher WFC scores than care workers reporting good staffing adequacy or leadership support. Estimates and p -values can be found in Table 3.

6 | DISCUSSION

This is the first theory-driven study investigating WFC of NH care workers by differentiating between time- and strain-based conflict. We found that 31.2% of the care workers in our sample have experienced WFC to some degree (scale mean >3.0). Our model indicated

several time-based and strain-based predictors of WFC, among them more working overtime, more working for residents during free time, higher employment percentage, higher presenteeism, shift working, lower staffing adequacy and lower leadership support. Accordingly, multiple factors should be considered when tackling the problem to create an attractive workplace for care workers in NHs.

Prevalence of WFC in our study shows that WFC is an issue which affects many care workers in NHs. Given the multiple detrimental consequences WFC has (for the individual and the institution), the importance to consider WFC in NHs seems to be confirmed. Our mean score for WFC of all care workers (2.5) was similar to mean scores from previous studies, with a mean score of 2.7 for RNs and CNAs working in long-term care institutions in the United States of America (USA) (Fan et al., 2019) and a mean score of 2.4 for NAs working in NHs in Maryland and New England USA (Zhang et al., 2016). But in the study of Heidenreich and Kuhnke-Wagner (2012) a much higher mean score of 3.4 for WFC was observed for care workers in geriatric institutions in Germany. These differences could be due to different contexts and health care systems, as, for example, the nurse-to-patient ratio in Germany is much higher than in the USA and Switzerland.

Consistent with previous research (Galletta et al., 2019; Raffenaud et al., 2020) the time-based factors working overtime and shift working were related to WFC. Additionally, our data showed that care workers with regular change of shifts and split day shifts had higher scores for WFC than those working on other shifts. This could be because rotating shifts (change of shifts) may interfere with private/family life, as they disrupt circadian rhythms, prevent the establishment of a daily routine, and limit the opportunity to participate in social activities (Wöhrmann et al., 2020). Regarding this matter, Shiffer et al. (2018) found that a counter-clockwise rotation is worse for work-life balance than a clockwise rotation. But shift work itself is inevitable in nursing care. A promising and realistic approach, therefore, seems to be enhancing regularity of shift work and adherence to scheduled working hours. This includes not only the attempt to minimize change of shifts and split day shifts, but also to omit working overtime or during free time. Therefore, the planning of work schedules seems to be key. However, planning with already short staffing may result in suboptimal work schedules. This, in turn, could result in the loss of more staff and even worse schedules, creating a downward spiral that is difficult to break. Considering this, adequate staffing appears to be essential (e.g. by having enough staff to respond to unforeseen circumstances, allowing for greater flexibility in planning).

New insights of our study are that devoting more time to work by working for residents during free time, a higher employment percentage, or more presenteeism were also associated with higher WFC in the NH setting. Potentially, not only the additional working hours during free time or the higher employment percentage itself, but basically more working hours per week and a resulting cumulative strain with less time for relief could have an influence on WFC. Consistent with this thought Asiedu et al. (2018) were able to show that more working hours per week were associated with higher

TABLE 3 Factors associated with work-family conflict.

Variable name	One predictor models			Final model		
	Estimate	p-value	AIC	Estimate	p-value	AIC
Predictors						
Intercept				3.838	<.001	10,904.01
Overtime (ref: almost every shift to every 4 working days)			11,845.70			-
Every 5-7 working days	-0.236	<.001	-	-0.141	.002	-
Less frequently	-0.604	<.001	-	-0.304	<.001	-
Work for residents during free time (ref: always-sometimes)			11,896.72			-
Rarely	-0.346	<.001	-	-0.182	<.001	-
Never	-0.560	<.001	-	-0.248	<.001	-
Employment percentage (ref: ≤50%)			11,992.36			-
51%-90%	0.372	<.001	-	0.207	<.001	-
91%-100%	0.447	<.001	-	0.277	<.001	-
Presenteeism (ref: no days)			11,602.35			-
9 days at most	0.503	<.001	-	0.336	<.001	-
More than 10 days	0.948	<.001	-	0.568	<.001	-
Shift (ref: day shift)			11,991.23			-
Evening and night shift	-0.007	.913	-	0.048	.329	-
Regular change	0.198	<.001	-	0.150	<.001	-
Split day shift	0.469	<.001	-	0.372	<.001	-
Staffing adequacy	-0.629	<.001	11,424.05	-0.354	<.001	-
Leadership support	-0.582	<.001	11,610.06	-0.253	<.001	-
Control variables						
Profession (ref: Registered nurse and BScN and MScN)			12,045.56			-
Licensed practical Nurse	0.179	<.001	-	0.148	<.001	-
Certified nursing assistant	-0.011	.828	-	0.060	.203	-
Nursing aides	-0.090	.067	-	0.021	.637	-
Other (e.g. trainee)	0.042	.530	-	0.124	.04	-
Gender (ref: female)			12,059.96			-
Male	0.083	.111	-	0.096	.041	-
Age (ref: ≤35)			12,034.54			-
36-50	-0.177	<.001	-	-	-	-
>50	-0.221	<.001	-	-	-	-
Full-time equivalent per 100 beds	-0.005	.039	12,064.26	-	-	-
Grade mix (% Registered Nurses)	0.005	.156	12,065.95	0.005	.019	-
Care level of the residents	-0.010	.628	12,064.11	-	-	-

Abbreviations: AIC, Akaike information criterion; BScN, Bachelor of Science in Nursing; MScN, Master of Science in Nursing.

conflict between work and family life. Reducing the overall working time per week could be an answer to this issue. It would give care workers more time to rest which could have a positive impact on presenteeism by allowing a healthier balance between work and family. Presenteeism is of concern as care workers experiencing presentism for at least 10 days per year had the highest mean score for WFC in our sample, with nearly one-quarter of care workers reporting this.

According to Dhaini et al. (2017), presenteeism is associated with implicit rationing of care in NHs. Thus, presenteeism has not only adverse consequences for care workers but also for quality of care and therefore, the care-dependent person. Pressure to come to work even when feeling sick should be avoided, for example, by NH managers having possibilities to substitute for the missing care worker. Staffing ratios with a buffer factored in or a pool of floating care

workers as well as support from an information technology-based rescheduling program (Tuominen et al., 2020) could be an option because they allow flexibility. Here, too, adequate staffing seems to be of importance. Additionally, Rainbow (2019) suggested culture and policy changes to address presenteeism, as care workers consider multiple factors (e.g. guilt, availability of leave time, illness) when deciding about whether to go to work although feeling sick.

As suspected, the two strain-based factors staffing adequacy and leadership support were negatively associated with WFC. Our study specifically focused on care workers' perceived staffing adequacy, meaning that individual care workers compared existing staffing to their current workload on an individual experience. The factor FTE posts showed no significant association with WFC, which emphasizes the idea that team composition, collaboration and good processes play a role and not headcount. In practice, this means, for example, that care workers should be more involved in staffing considerations, as their assessment of adequacy is important in creating an attractive workplace. Having a supportive leadership is associated with lower WFC in our sample. NHs should therefore invest in their leadership personnel by training them on a leadership style, that supports care workers and increases their job satisfaction. For instance, leadership that is relational, rather than task oriented, can be key in creating such a sustainable care workforce for NHs (Cummings et al., 2018). Allowing care workers flexibility in planning work schedules (e.g. change a shift in order to be able to attend the child's doctor's appointment) could be a way to accomplish both, leading supportive and addressing staffing adequacy. Furthermore, the downward spiral mentioned earlier may be avoided. Additionally, work schedule flexibility could help reconcile the demands of the institutions with the needs of individual care workers (Dhaini et al., 2018).

6.1 | Strengths and limitations

This study investigated WFC among a large number of care workers and NHs which enhanced the power of the study. As many features of the work environment were assessed, many possible work-related factors could be investigated. However, certain limitations should be considered. First, most variables are self-reported by care workers which may introduce bias. Second, conclusions about a causal relationship between work-related factors and WFC are not possible due to the cross-sectional design. Additionally, the sample is non-representative as data from SHURP 2018 are based on convenience sampling.

7 | CONCLUSION

Our study indicates that the conflict between work-life and family/private-life concerns about one third of the care workers in NHs and that WFC could be reduced through improved working conditions. The conceptual model that guided our study highlighted the various

aspects of possibly affected working conditions. Because WFC contributes to the deterioration of the care workforce situation in NHs, both policy and NH managements need to improve the identified work-related factors to maintain a healthy and sufficient care workforce. Implications for practice would be increasing care workers' influence in planning work schedules and staffing, enable flexible planning to ensure adequate staffing, implementing programs to support employee health targeted in reducing presenteeism, and training leadership personnel on how to appropriately support their care workers. These strategic decisions seem even more important in the wake of the Covid-19 pandemic and the heavy burden it placed on care workers. Action for improved working conditions in nursing care in NHs is needed promptly, but with a lasting impact to stop the downward spiral. In this regard, future research should consist of observational and qualitative studies which accompany the development, implementation and impact of these interventions to assess the impact on working conditions, WFC and ultimately workforce retention.

AUTHOR CONTRIBUTIONS

All authors have agreed on the final version and meet at least one of the following criteria (recommended by the ICMJE*):

1. substantial contributions to conception and design, acquisition of data or analysis and interpretation of data;
2. drafting the article or revising it critically for important intellectual content.

*<http://www.icmje.org/recommendations/>.

ACKNOWLEDGEMENTS

The authors thank the participating nursing homes for their time and effort invested in this study. Open access funding provided by Universitat Basel.

FUNDING INFORMATION

SHURP 2018 was funded by participation fees from the included nursing homes.

CONFLICT OF INTEREST STATEMENT

No conflict of interest has been declared by the authors.

REPORTING METHOD

STROBE.

PEER REVIEW

The peer review history for this article is available at <https://www.webofscience.com/api/gateway/wos/peer-review/10.1111/jan.15704>.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

PATIENT OR PUBLIC CONTRIBUTION

No patient or public contribution.

ORCID

Michael Simon  <https://orcid.org/0000-0003-2349-7219>

Franziska Zúñiga  <https://orcid.org/0000-0002-8844-4903>

TWITTER

Franziska Zúñiga  @fzuniga300

REFERENCES

- Asiedu, E. E. A., Annor, F., Amponsah-Tawiah, K., & Dartey-Baah, K. (2018). Juggling family and professional caring: Role demands, work-family conflict and burnout among registered nurses in Ghana. *Nursing Open*, 5(4), 611–620. <https://doi.org/10.1002/nop2.178>
- Berkman, L. F., Liu, S. Y., Hammer, L., Moen, P., Klein, L. C., Kelly, E., Fay, M., Davis, K., Durham, M., Karuntzos, G., & Buxton, O. M. (2015). Work-family conflict, cardiometabolic risk, and sleep duration in nursing employees. *Journal of Occupational Health Psychology*, 20(4), 420–433. <https://doi.org/10.1037/a0039143>
- Blanco-Donoso, L. M., Moreno-Jiménez, J., Hernández-Hurtado, M., Cifri-Gavela, J. L., Jacobs, S., & Garrosa, E. (2021). Daily work-family conflict and burnout to explain the leaving intentions and vitality levels of healthcare workers: Interactive effects using an experience-sampling method. *International Journal of Environmental Research and Public Health*, 18(4), 1932. <https://www.mdpi.com/1660-4601/18/4/1932>
- Buonocore, F., & Russo, M. (2013). Reducing the effects of work-family conflict on job satisfaction: The kind of commitment matters. *Human Resource Management Journal*, 23(1), 91–108. <https://doi.org/10.1111/j.1748-8583.2011.00187.x>
- Cummings, G. G., Tate, K., Lee, S., Wong, C. A., Paananen, T., Micaroni, S. P. M., & Chatterjee, G. E. (2018). Leadership styles and outcome patterns for the nursing workforce and work environment: A systematic review. *International Journal of Nursing Studies*, 85, 19–60. <https://doi.org/10.1016/j.ijnurstu.2018.04.016>
- Dhaini, S. R., Denhaerynck, K., Bachnick, S., Schwendimann, R., Schubert, M., De Geest, S., & Simon, M. (2018). Work schedule flexibility is associated with emotional exhaustion among registered nurses in Swiss hospitals: A cross-sectional study. *International Journal of Nursing Studies*, 82, 99–105. <https://doi.org/10.1016/j.ijnurstu.2018.03.019>
- Dhaini, S. R., Zúñiga, F., Ausserhofer, D., Simon, M., Kunz, R., De Geest, S., & Schwendimann, R. (2017). Are nursing home care workers' health and presenteeism associated with implicit rationing of care? A cross-sectional multi-site study. *Geriatric Nursing*, 38(1), 33–38. <https://doi.org/10.1016/j.gerinurse.2016.07.003>
- Dowd, W. N., Bray, J. W., Barbosa, C., Brockwood, K., Kaiser, D. J., Mills, M. J., Hurtado, D. A., & Wipfli, B. (2017). Cost and return on Investment of a Work-Family Intervention in the extended care industry: Evidence from the work, family, and health network. *Journal of Occupational and Environmental Medicine*, 59(10), 956–965. <https://doi.org/10.1097/jom.0000000000001097>
- Fan, W., Moen, P., Kelly, E. L., Hammer, L. B., & Berkman, L. F. (2019, Feb). Job strain, time strain, and well-being: A longitudinal, person-centered approach in two industries. *Journal of Vocational Behaviour*, 110(Pt A), 102–116. <https://doi.org/10.1016/j.jvb.2018.10.017>
- Galletta, M., Portoghese, I., Melis, P., Gonzalez, C. I. A., Finco, G., D'Aloja, E., Contu, P., & Campagna, M. (2019). The role of collective affective commitment in the relationship between work-family conflict and emotional exhaustion among nurses: A multilevel modeling approach. *BMC Nursing*, 18(1), 5. <https://doi.org/10.1186/s12912-019-0329-z>
- Greenhaus, J., & Beutell, N. (1985). Source of conflict between work and family roles. *The Academy of Management Review*, 10, 76–88. <https://doi.org/10.2307/258214>
- Grzywacz, J. G., Frone, M. R., Brewer, C. S., & Kovner, C. T. (2006). Quantifying work-family conflict among registered nurses. *Research in Nursing & Health*, 29(5), 414–426. <https://doi.org/10.1002/nur.20133>
- Haddad, L. M., Annamaraju, P., & Toney-Butler, T. J. (2023). Nursing shortage. In *StatPearls [Internet]*. StatPearls Publishing.
- Heidenreich, J., & Kuhnke-Wagner, I.-A. (2012). Correlation between resident aggression and depressive symptoms, meaningless/burn-out and work-privacy conflicts among staff in residential care, non-psychiatric and non-clinical facilities: An approach for stress prevention. *Pflegewissenschaft*, 14(12), 679–687. <http://search.ebscohost.com/login.aspx?direct=true&db=cin20&AN=108087439&site=ehost-live>
- Hox, J. J., Moerbeek, M., & Van de Schoot, R. (2017). *Multilevel analysis: Techniques and applications*. Routledge. <https://doi.org/10.4324/9781315650982>
- International Council of Nurses. (2021). *The global nursing shortage and nurse retention*. https://www.icn.ch/sites/default/files/inline-files/ICN%20Policy%20Brief_Nurse%20Shortage%20and%20Retention_0.pdf
- Kristensen, T. S., Hannerz, H., Høgh, A., & Borg, V. (2005). The Copenhagen Psychosocial Questionnaire—a tool for the assessment and improvement of the psychosocial work environment. *Scandinavian Journal of Work, Environment & Health*, 31(6), 438–449.
- Lake, E. T. (2007). The nursing practice environment. *Medical Care Research and Review*, 104S–122S. <https://doi.org/10.1177/1077558707299253>
- Nei, D., Snyder, L. A., & Litwiller, B. J. (2015). Promoting retention of nurses: A meta-analytic examination of causes of nurse turnover. *Health Care Management Review*, 40(3), 237–253. <https://doi.org/10.1097/hmr.000000000000025>
- Netemeyer, R. G., Boles, J. S., & McMurrian, R. (1996). Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81(4), 400–410. <https://doi.org/10.1037/0021-9010.81.4.400>
- Pien, L.-C., Cheng, W.-J., Chou, K.-R., & Lin, L.-C. (2021). Effect of work-family conflict, psychological job demand, and job control on the health status of nurses. *International Journal of Environmental Research and Public Health*, 18(7), 3540. <https://www.mdpi.com/1660-4601/18/7/3540>
- Raffenaud, A., Unruh, L., Fottler, M., Liu, A. X., & Andrews, D. (2020). A comparative analysis of work-family conflict among staff, managerial, and executive nurses. *Nursing Outlook*, 68(2), 231–241. <https://doi.org/10.1016/j.outlook.2019.08.003>
- Rainbow, J. G. (2019). Presenteeism: Nurse perceptions and consequences. *Journal of Nursing Management*, 27(7), 1530–1537. <https://doi.org/10.1111/jonm.12839>
- Schwendimann, R., Zúñiga, F., Ausserhofer, D., Schubert, M., Engberg, S., & De Geest, S. (2014). Swiss nursing homes human resources project (SHURP): Protocol of an observational study. *Journal of Advanced Nursing*, 70(4), 915–926. <https://doi.org/10.1111/jan.12253>
- Shiffer, D., Minonzio, M., Dipaola, F., Bertola, M., Zamuner, A. R., Dalla Vecchia, L. A., Solbiati, M., Costantino, G., Furlan, R., & Barbic, F. (2018). Effects of clockwise and counterclockwise job shift work rotation on sleep and work-life balance on hospital nurses. *International Journal of Environmental Research and Public Health*, 15(9), 2038. <https://www.mdpi.com/1660-4601/15/9/2038>
- Simon, M., Kümmerling, A., & Hasselhorn, H.-M. (2004). Work-home conflict in the European nursing profession. *International Journal of*

- Occupational and Environmental Health*, 10(4), 384–391. <https://doi.org/10.1179/oe.2004.10.4.384>
- Tuominen, O., Lundgren-Laine, H., Teperi, S., & Salanterä, S. (2020). Comparing the two techniques for nursing staff rescheduling to streamline nurse managers' daily work in Finland. *Computers, Informatics, Nursing*, 38(3), 148–156. <https://doi.org/10.1097/CIN.0000000000000567>
- Wang, Y., Chang, Y., Fu, J., & Wang, L. (2012). Work-family conflict and burnout among chinese female nurses: The mediating effect of psychological capital. *BMC Public Health*, 12(1), 915. <https://doi.org/10.1186/1471-2458-12-915>
- Wöhrmann, A. M., Müller, G., & Ewert, K. (2020). Shift work and work-family conflict. *Sozialpolitik.Ch*, 3, 3.2.
- Wüstner, K. (2019). Work-life balance as challenge in long-term care. *Pflegewissenschaft*, 21(5/6), 266–279. <https://doi.org/10.3936/1605>
- Yildiz, B., Yildiz, H., & Ayaz Arda, O. (2021). Relationship between work-family conflict and turnover intention in nurses: A meta-analytic review. *Journal of Advanced Nursing*, 77(8), 3317–3330. <https://doi.org/10.1111/jan.14846>
- Zhang, Y., Punnett, L., Mawn, B., & Gore, R. (2016). Working conditions and mental health of nursing staff in nursing homes. *Issues in Mental Health Nursing*, 37(7), 485–492. <https://doi.org/10.3109/01612840.2016.1162884>
- Zhang, Y., Punnett, L., & Nannini, A. (2017). Work-family conflict, sleep, and mental health of nursing assistants working in nursing homes. *Workplace Health & Safety*, 65(7), 295–303. <https://doi.org/10.1177/2165079916665397>

How to cite this article: Hauser, C., Stahl, J., Simon, M., Valenta, S., Favez, L., & Zúñiga, F. (2023). Identifying work-related factors associated with work–family conflict of care workers in nursing homes: A cross-sectional study. *Journal of Advanced Nursing*, 79, 3935–3945. <https://doi.org/10.1111/jan.15704>

The *Journal of Advanced Nursing (JAN)* is an international, peer-reviewed, scientific journal. *JAN* contributes to the advancement of evidence-based nursing, midwifery and health care by disseminating high quality research and scholarship of contemporary relevance and with potential to advance knowledge for practice, education, management or policy. *JAN* publishes research reviews, original research reports and methodological and theoretical papers.

For further information, please visit *JAN* on the Wiley Online Library website: www.wileyonlinelibrary.com/journal/jan

Reasons to publish your work in JAN:

- High-impact forum: the world's most cited nursing journal, with an Impact Factor of 2.561 – ranked 6/123 in the 2019 ISI Journal Citation Reports © (Nursing; Social Science).
- Most read nursing journal in the world: over 3 million articles downloaded online per year and accessible in over 10,000 libraries worldwide (including over 6,000 in developing countries with free or low cost access).
- Fast and easy online submission: online submission at <http://mc.manuscriptcentral.com/jan>.
- Positive publishing experience: rapid double-blind peer review with constructive feedback.
- Rapid online publication in five weeks: average time from final manuscript arriving in production to online publication.
- Online Open: the option to pay to make your article freely and openly accessible to non-subscribers upon publication on Wiley Online Library, as well as the option to deposit the article in your own or your funding agency's preferred archive (e.g. PubMed).