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Job Characteristics and Experience as Predictors of Occupational Turnover Intention and Occupational Turnover in the European Nursing Sector

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Introduction

Today, almost all industrialized countries have a shortage of active nurses (Boamah & Laschinger, 2015). Demographic changes are worsening the situation as the nursing population is increasingly ageing and the number of nurses entering the labor market is decreasing at the same time. Moreover, rates of occupational turnover among nurses are high. On top of this, most Western countries face an increased need for nursing care, as the 'baby boomer' generation approaches retirement (Buchan, Duffield, & Jordan, 2015). Therefore, it is all the more disturbing that the public image of the nursing profession is deteriorating, due to reports on decreasing standards of patient care (Dabney & Kalisch, 2015), and increased pressures on those who stay in the job (Hart & Warren, 2015). Obviously, the retention of highly qualified nursing staff is of utmost importance and deserves our full attention. In the case of a massive premature leave (before one's retirement age) of nurses from the labor market, the society as a whole may experience severe consequences, due to the loss of highly needed knowledge and skills. From a managerial perspective, the costs of high turnover rates (Hinkin & Tracey, 2000), such as opportunity costs, costs that are associated with selection and training of new staff, and decreased level of morale of the remaining workers (Yousaf, Sanders, & Abbas, 2012), stress the importance of retention as well. Moreover, the personal costs for the employee involved are also high, because of loss of seniority, diminished social recognition and career identity, loss of close personal relationships, loss of income, and occupational investment costs aimed at preparing for one's future job, such as time, money and training (Vardaman, Allen, Renn, & Moffitt, 2008).

The objective of the present longitudinal study was to gain more insight into predictors of occupational turnover intention, and, subsequently, premature exit behavior in the European nursing sector. To the best of our knowledge, up to now, no research has

addressed the role of occupational turnover intention in a research model wherein the Job Demands-Resources (JD-R) framework is used to predict occupational turnover. With this study, we aim to increase our insights into how to promote relevant working conditions of nurses in order to prevent premature occupational turnover, thereby contributing to effective organizational functioning. More specifically, although earlier scholarly work in this field has established a link between job characteristics, on the one hand, and attitudinal and behavioral outcomes, such as turnover, on the other hand (e.g, Hackman & Oldham, 1976), the work context has largely been ignored (Humphrey, Nahrgang, & Morgeson, 2007). In addition, previous research that tried to incorporate work context predominantly built upon Karasek's Job-Demand-Control-Support model (1979), which uses a rather restricted definition of job demands [being mainly quantitative in nature, such as workload and time pressure]. This contribution expands this view by using the 'broader' JD-R framework.

Moreover, most earlier research in this scholarly domain has focused upon organizational turnover instead of occupational turnover (Blau, 2007; Van der Heijden, Van Dam, & Hasselhorn, 2009). Whereas organizational turnover is often associated with high costs for the organization, leaving one's profession entirely (i.e., occupational turnover) implies both organizational and individual consequences. Therefore, this study aims to test whether the Job Demands-Resources framework has predictive value for the intention to leave the nursing profession, and subsequently for actual exit behavior.

Finally, because occupational turnover is often regarded as the outcome of a career decision-making process, researchers (e.g., Feldman & Ng, 2007) have generally focused on career aspects as important predictors of this decision, and less on organizational or work place characteristics (such as job demands and job resources) that may precede occupational turnover.

In order to comply with the need for more empirical research across the globe, the present study uses a large European sample. In particular, we tested the potential mediating role (cf. Hayes, 2009) of nurses' occupational turnover intention in the relationship between experience in the nursing profession, job demands and job resources, being the predictor variables, and occupational turnover, being the outcome.

Theoretical Framework

The Job Demands-Resources Model Applied to Predict Occupational Turnover Intention and Occupational Turnover

The Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007; Demerouti, Bakker, Schaufeli, & Nachreiner, 2001) states that every occupation has its own specific risk factors associated with job stress, and that these factors can be classified in two general categories (i.e., job demands and job resources).

Following the line of reasoning that lies at the heart of the JD-R model, we argue that job demands, although not necessarily negative, may result into strain when meeting those demands requires high effort from which the employee cannot adequately recover (Boyd, Bakker, Pignata, Winefield, Gillespie, & Stough, 2011). Job resources, on the other hand, are valued as being important means to either cope with job demands, or imply means to the achievement or protection of other valued resources, that is to say, may enhance employees' motivation (Demerouti et al., 2001).

The JD-R model is built upon two underlying psychological processes that play a role in the development of job strain and motivation (Bakker & Demerouti, 2007; Bakker, Demerouti, De Boer, & Schaufeli, 2003a). The first one comprises a so-called health-impairment process, that is, a situation wherein high job demands (such as a high level of emotional demands and work-home conflicts) exhaust employees' mental and physical resources and may therefore lead to exhaustion, health problems, and eventually

premature leave from one's profession (Bakker et al., 2003b). The second underlying process is motivational in nature and comprises that job resources (i.e., general resources and job recognition, such as influence at work and possibilities for development) have either intrinsic (because they foster growth, learning and development) or extrinsic (because they are instrumental in achieving work goals) motivational potential, and lead to positive work outcomes, such as work engagement and high job performance (Bakker & Demerouti, 2007; Bakker, Demerouti, & Schaufeli, 2003b). As such, job resources are essential in order to deal with job demands, but they are also rewarding in themselves, by fulfilling basic human needs (Deci & Ryan, 1985), such as the needs for autonomy, belongingness and competence.

Ample previous work provided evidence for the dual pathways to employee well-being as proposed by the JD-R model, and showed that it can predict important organizational outcomes (see Bakker & Demerouti, 2017 for an elaborate overview). In the light of the focus of our study, Bakker et al. (2003b) found support for the dual processes in a study investigating the JD-R model's predictive validity for self-reported absenteeism and turnover intention (see also Babakus, Yavas, & Karatepe, 2008; Jourdain & Chênevert, 2010; Schaufeli & Bakker, 2004) and determination to continue (Lewig, Xanthopoulou, Bakker, Dollard, & Metzer, 2007), herewith justifying the suitability of the JD-R framework as an overarching umbrella for the research model in the current study. In the next paragraph, we will go into the distinguished factors (i.e., job demands and job resources) in our research model.

In a recent paper by McVicar (2016) identifying important antecedents of nurses' psychosocial well-being based on the JD-R model, all of the indicators for job demands and job resources that have been incorporated in the present study are mentioned as key issues.. In particular, an increasing number of workers, health care professionals in particular,

experience primarily *Emotional Demands* (De Jonge, Mulder, & Nijhuis, 1999). In nursing, where staff is confronted with serious illness and death, as well as with violence at work, emotional demands are huge, and in case of a lack of resources to cope with these demands, nurses' intention to leave might be significantly enhanced (Widerszal-Bazyl, Radkiewicz, Hasselhorn, Conway, Van der Heijden, & the NEXT Study Group, 2008). Therefore, we incorporated emotional demands as a first indicator for job demands that nurses are exposed to in our research model.

Work-Home Interference (WHI) comprises the second indicator for job demands in our model. WHI is often defined as a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible (Eby, Casper, Lockwood, Bordeaux, & Brinley, 2005). As many nurses need to combine work and family demands, the occurrence of work-home conflict is a common experience for them (Luk & Shaffer, 2005), and an important antecedent of their job and life effectiveness (Kossek, Pichler, Bodner, & Hammer, 2011). Previous empirical research (e.g., Van der Heijden et al., 2009a) has indeed confirmed that WHI contributes to considerations to leave and/or exit behavior, be it directly and/or indirectly. Moreover, with the proliferation of dual-career couples, protecting work-home balance has become increasingly difficult, and, nowadays, WHI might be a significant factor explaining turnover intention, and, subsequently, premature leave from the nursing profession (see also Grandey & Cropanzano, 1999).

As regards job resources, in Westernized countries, there is a growing concern with personal growth, self-fulfillment, and self-awareness (see Carless & Bernath, 2007). Next to the traditional and narrower definition of career success in terms of 'climbing the corporate ladder' (Louis, 1980, p. 329), we observe changes in the context of organizational careers (Inkson, Gunz, Ganesh, & Roper, 2012). Nowadays, many employees strive for a 'career path with a heart' (Hall, 2004), and value a healthier work-life balance and the

further development of their human capital (Rodrigues & Guest, 2010). Concretely, individual employees value a challenging job wherein they have ample *Influence* and *Opportunities for Development* (Poell, Van Dam, & Van den Berg, 2004), that is to say, a job that enables them to practice and enhance their capabilities (Pulakos, Arad, Donovan, & Plamondon, 2000), and that involves novelty, autonomy (Dwyer, Schwartz, & Fox, 1992), and the possibility to explore alternative strategies and solutions (Maurer, Weiss, & Barbeite, 2003).

Opportunities for practicing and enhancing their capabilities assist employees in meeting their needs for personal growth through self-development and continuous learning (De Pater, Van Vianen, Fischer, & Van Ginkel, 2009), and as a result, may reduce intention to leave and/or actual turnover (De Cuyper, Mauno, Kinnunen, & Mäkikangas, 2011; Kim & Stoner, 2008). In a similar vein, from the Human Resource Development (HRD) literature, it may generally be concluded that employee development is perceived as a benefit that leads to - amongst others - retention (Bartlett, 2001; Tansky & Cohen, 2001).

Occupational Turnover Intention and Occupational Turnover

Occupational turnover, like organizational turnover, represents a form of voluntary withdrawal from a specific work situation (Adams & Beehr, 1998). Occupational turnover is not just of concern for an individual employee, but comprises an important organizational and societal issue as well (cf. Dalton & Todor, 1982). Therefore, it is understandable that we have seen an increased interest in better understanding the antecedents of employee turnover over the past decades (e.g, Griffeth, Hom, & Gaertner, 2000). However, researchers have paid less attention to professional or occupational turnover compared to other types of inter-role transitions, such as organizational turnover (Blau & Lunz, 1998). We argue that the former has more far-reaching consequences. After all, choosing and

developing a career is usually a long-term process that is characterized by substantial personal involvement and large investments (Carson, Carson, & Bedeian, 1995).

Many researchers consider turnover intention as the most immediate and most accurate predictor of actual turnover (Hom, Caranikas-Walker, Prussia, & Griffeth, 1992), although the strength of this relationship varies widely across empirical studies, and turnover intention rarely explains more than 20 percent of actual turnover variance (Griffeth et al., 2000). Nevertheless, following the theory of planned behavior (Ajzen, 1991), an individual's intention is considered to be a representation of one's plan of action that summarizes one's motivation to engage in a certain behavior, in this case exit behavior (see also Holtom, Mitchell, Lee, & Eberly, 2008). The theory of planned behavior has been applied to a wide range of domains, and has demonstrated its usefulness in predicting subsequent career behavior (Arnold, Loan-Clarke, Coombs, Wilkinson, Park, & Preston, 2006), including employee turnover (Van Breukelen, Van der Vlist, & Steensma, 2004). Therefore, following the theory of planned behavior, in the current contribution, occupational turnover intention is used as the most immediate predictor for occupational turnover.

Experience in the Nursing Profession as a Predictor for Occupational Turnover Intention and Occupational Turnover

In addition to the various work-related factors that have been shown to have an effect on occupational turnover intention and actual turnover (Mobley, 1977), there is also ample evidence that self-selection processes during the course of employees' careers play an important role in the turnover decision process. For instance, Van Breukelen et al. (2004) found that turnover intention in the Royal Netherlands Navy was negatively associated with the number of years people had served in the navy (which, in its turn, correlated strongly with their age). Their organizational tenure explained additional variance in turnover

intention, over and above the effects of these employees' attitudes towards leaving the Royal Netherlands Navy, the opinions of their partner and family, and the perceived chances of finding an alternative job. Besides, in a recent study among nurses, Lee, Dai and McCreary (2015) observed that age and tenure were negatively associated with the intention to leave the nursing profession.

Age and tenure are often considered as demographic variables and are subsequently treated as controls in studies on turnover. However, Arnold and Feldman (1982), and Bentler and Speckart (1981), among others, have pointed out that age and tenure are also clear indicators of past behavior. Employees who have been in an organization or profession for a longer time and who are older, may have had neither the plan to change nor the opportunity to do so. This may apply to an even greater extent to occupational fields such as the military and the nursing profession, i.e., occupations that are commonly seen as a calling instead of a regular job (cf. Arnold et al., 2006; Van Breukelen et al., 2004). After all, in these kinds of occupational fields, the costs associated with leaving the profession are high because of the investments made, both material and immaterial ones. Previous scholarly work referred to the so-called 'sunk cost effect' comprising "a greater tendency to continue an endeavor once an investment in money, effort, or time has been made" (Arkes & Blumer, 1985, p. 124). Therefore, we expect that nurses who are older and who have a longer tenure with their current employer and within their profession will be less likely to have plans or the intention to leave nursing.

Towards a Model aimed at a Better Understanding of Occupational Turnover

Occupational turnover intention is likely to play a mediating role in the relationship between nurses' experience in their profession, job demands and resources, on the one hand, and actual occupational turnover, on the other hand. Based upon the theoretical outline

given above, we will examine the model that is presented in Figure 1 and will test the following hypotheses:

********** Insert Figure 1 about here **********

Hypothesis 1: Experience in the nursing profession is negatively related to occupational turnover intention.

Hypothesis 2: Job demands are positively related to occupational turnover intention.

Hypothesis 3: Job resources are negatively related to occupational turnover intention.

Hypothesis 4: Occupational turnover intention is positively related to occupational turnover.

Hypothesis 5: Occupational turnover intention mediates the relationship between experience in the nursing profession (H5a), job demands (H5b), and job resources (H5c), on the one hand, and occupational turnover, on the other hand.

Methodology

Sample and Procedure

The present study was part of a large European study on nurses' intention to leave their profession [NEXT, Nurses' Early Exit (Hasselhorn et al., 2003)], financed by the European Commission within the 5th framework program. The NEXT study aimed to investigate the reasons, circumstances, and consequences surrounding premature departure from the nursing profession. The national NEXT study teams recruited health care institutions that were willing to participate, and strived for a valid representation of the national distribution of nurses working in three different types of institutions (hospitals, nursing homes, and community/home care), and across different geographical regions in the participating countries. In addition, they intended to include nurses working at different

occupational levels as this was expected to increase the variation in (the level of) job demands and resources (Warr, 1990). In each health care institution, a 'field manager' was appointed who organized the data collection, and who kept close contact with the specific national NEXT team throughout the conduct of the study. The questionnaires were either directly mailed to the nurses' home addresses or sent via the internal mail in the institution they worked for.

The longitudinal design of the study comprised a baseline survey covering aspects of nurses' current working and private life as well as their future perspectives. During the twelve months following the baseline survey, all nurses who left their current employer received an additional survey (the so-called leavers' survey) dealing with their exit behavior. Our final sample comprised 753 nurses from Finland (N = 312), France (N = 121), Germany (N = 112), Italy (N = 95), the Netherlands (N = 46), and Poland (N = 67). 544 (72.2%) of the nurses worked in hospitals, 107 (14.2%) worked in nursing homes, and 102 (13.6%) worked in community/home care. Participants' mean age was 38.97 years (SD = 11.21). Their mean organizational tenure was 3.98 years (SD = 1.28), and the average number of years in the nursing profession was 13.56 years (SD = 10.81). Most nurses were female (92.6%). Furthermore, 312 (40.7) had children who were still living at home, with 151 (19.7%) taking care of children under the age of seven. The attrition rates differed by country (ranging from 23.6% to 66.3%), with France and the Netherlands exhibiting a higher prevalence of drop-outs from the study.

Measures

The translation-back translation method was used for each participating country (Hambleton, 1994), i.e., the measurement scales were translated from one language to another and then back-translated to the original language by an independent translator. Subsequently, all scales were pretested in up to six pretests in three countries. The scale to

measure emotional demands had been specifically tailored to the nursing and other health care professions (De Jonge et al., 1999). In other cases, generic scales were used. The outcomes of the pretests enabled us to conclude that the measures that were developed in the framework of the NEXT study corresponded to our requirement to only include psychometrically sound (i.e., reliable and valid) instruments. Moreover, the instruments appeared to be user-friendly and easy to administer. Finally, measurement invariance (see Van de Schoot, Lugtig, & Hox, 2012, for more details) of the applied scales across the participating countries was established (see Hasselhorn et al., 2003).

Experience in the Nursing Profession. Age (in years), number of years working as a nurse (in years), and number of years working with the current employer (1 = less than 6 months; 2 = between 6 and 12 months; 3 = 1 to 2 years; 4 = 3 to 5 years; 5 = more than 5 years), were included as manifest indicators reflecting nurses' experience in their profession.

Two indicators for *Job Demands* were included in the present study. *Emotional Demands* was measured using a four-item scale developed by De Jonge et al. (1999). Participants were asked to indicate on a five-point rating scale how often they were confronted with 'death', 'illness or any other human suffering', 'aggressive patients', and 'troublesome patients' in their work. Response categories ranged from: (1) 'never' to (5) 'always'. Cronbach's alpha for this scale was .70. *Work-Home Interference* was measured using the five-item 'work-to-family conflict' scale developed by Netemeyer, Boles, and McMurrian (1996). An example item was: 'The amount of time my job takes makes it difficult to fulfill family responsibilities'. The respondents were asked to indicate on a five-point rating scale how accurate the statements were in relation to their personal situation, with response categories ranging from: (1) 'total disagreement' to (5) 'total agreement'. Cronbach's alpha for this scale was .88.

As regards *Job Resources*, two indicators were included as well. *Influence at Work* was measured using a four-item scale containing modified items based on the Demand-Control Questionnaire (Theorell, Perski, Åkerstedt, Sigala, Ahlberg-Hultén, Svensson, & Eneroth, 1988). An example item was: 'I can decide for myself how to fulfill the tasks that are assigned to me'. The respondents were asked to indicate on a five-point rating scale how accurate the statements were in relation to their personal occupational situation, with response categories ranging from: (1) 'totally inaccurate' to (5) 'totally accurate'. Cronbach's alpha was .81. *Opportunities for Development* were measured using a four-item scale from the COPSOQ (Copenhagen Psychosocial Questionnaire) (Kristensen, 2000). An example item was: 'Do you have the possibility to learn new things through your work?' Response categories ranged from: (1) 'to a very small extent' to (5) 'to a large extent'. Cronbach's alpha was .77.

Occupational Turnover Intention was measured with Hasselhorn et al.'s (2003) three-item scale. The items were: 'How often during the past year have you thought about further qualification outside nursing?' 'How often during the past year have you thought about starting a different kind of job' and 'How often during the past year have you thought about giving up nursing completely?' Responses were made on a five-point rating scale ranging from: (1) 'never', (2) 'sometimes a year', (3) 'sometimes a month', (4) 'sometimes a week' to (5) 'every day'. Cronbach's alpha for this scale was .86.

Occupational Turnover (measured after the one-year time lag) was assessed with a newly developed measure consisting of four possible outcomes ranging in their amount of seriousness or, otherwise stated, the impact of the specific exit behavior upon the nursing labor market supply: (1) 'I have stayed in my current nursing job' (N = 277; 36.8 %), (2) 'I have found a new job within the nursing sector' (N = 362; 48.1%), (3) 'I have found a new job outside the nursing sector (N = 60; 8.0%), and (4) 'I am not going to take on a new job

because I am bringing up children, or because I am nursing within my family' (N = 54; 7.2%). The first outcome comprises the so-called stayers. The second outcome implies that the nurse left his/her current health care institution, yet, was retained for the nursing sector, while the third outcome implies that the nurse left his/her occupational sector but remained active at the labor market. The fourth outcome implies the most serious form of exit behavior and has the highest impact upon the labor market, as the specific nurse is not available for the latter anymore. Because the focus in this article is on occupational turnover, we used the following dichotomous variable as our dependent outcome: 1 = stayed in the nursing profession (N = 639; 84.9%); 2 = left the nursing profession within the time period studied (N = 114; 15.1%).

Analytical Strategy

We tested the hypotheses by employing structural equation modeling, using three latent factors as exogenous variables. As a first exogenous latent factor, we included 'experience as a nurse' which was indicated by three observed (manifest) variables: age, number of years working with the present employer, and number of years working as a nurse. In line with previous research using the JD-R framework, second-order constructs were used for job demands and job resources (see e.g., Bakker & Demerouti, 2007; Bakker et al., 2003b). In particular, the second latent factor 'job demands' was indicated by two manifest variables, namely: emotional demands and work-home interference. The third latent factor 'job resources' was indicated by two manifest variables as well, namely: influence at work and possibilities for development. The assumed mediating variable, that is, occupational turnover intention, was operationalized by the scale score of three items, therefore consisting of one manifest indicator only. Finally, occupational exit behavior was included as a single manifest dichotomous indicator. This was the ultimate dependent variable in our study.

We estimated the fit of various models and the parameters of the models with the software program EQS (versions 6.2 and 6.3), developed by Bentler (1989, 2006; Bentler & Wu, 2002). Maximum likelihood estimation methods were used and the covariance matrix was the input for each analysis. The traditional chi-squared value, and the root mean square error of approximation (RMSEA) were calculated. As a rule of thumb, an RMSEA $\leq .08$ or .06 indicates a reasonable fit between the model and the data (Kenny, Kaniskan, & McCoach, 2015). Because these indices are dependent on sample size, as recommended by Marsh, Balla and Hau (1996), the Normed Fit Index (NFI), comparative fit index (CFI), Tucker-Lewis index (TLI), Bollen's Incremental Fit Index (IFI), and Jöreskog and Sörbom's Adjusted Goodness of Fit Index (AGFI) were also examined. These indices should have values of .90 or higher (Hoyle, 1995), although other authors (e.g., Schreiber, Stage, King, Nora, & Barlow, 2006) recommend values of .95 or higher.

First, we investigated whether a *measurement model* comprising the nine manifest indicators described before, had an acceptable fit (cf. Anderson & Gerbing, 1988). After that, we fitted the hypothesized *structural model* in which occupational turnover intention acted as a mediating variable between the three exogenous latent factors and the dependent variable occupational turnover. In this model, we also estimated the covariances between the three exogenous latent factors. Finally, we investigated whether the hypothesized structural model could be improved by adding direct paths between the exogenous variables and occupational turnover.

Results

Tabel 1 shows the descriptive statistics, scale reliabilities and inter-correlations between all variables included in the study.

********** Insert Table 1 about here **********

Table 1 shows that the correlation between the two manifest indicators of job demands was .25 ($p < .001$). The correlation between the two manifest indicators of job resources was .21 ($p < .001$) The correlation between age and tenure with the present employer was .50 ($p < .001$), while the correlation between tenure in the nursing profession and tenure with the present employer was .56, ($p < .001$).The correlation between age and tenure in the nursing profession was very high ($r = .87$), a result comparable with that found by Lee et al. (2015), i.e., $r = .86$, indicating that many nurses in these samples entered their profession at a very young age. The correlations between the indicators of experience in the nursing profession, job demands, and job resources, on the one hand, and occupational turnover intention, on the other hand, were considerably higher than the correlations between these indicators and nurses' actual exit behavior, i.e., occupational turnover. In addition to occupational turnover intention ($r = .09$, $p < .05$), only age ($r = -.11$, $p < .01$) and tenure ($r = -.09$, $p < .05$) correlated significantly with occupational turnover.

Assessment of the Measurement Model and the Hypothesized Structural Model

The measurement model with the nine manifest indicators had an acceptable fit: Chi-square = 55.64, df = 19, $p = .00002$; NFI = .967; TLI = .957; CFI = .977; IFI = .978, AGFI = .962; RMSEA = .051 (90% confidence interval: .035 - .066). This means that it is justified to carry out analyses investigating the tenability of various structural models (cf. Anderson & Gerbing, 1988). The fit of a measurement model is identical to the fit of a 'saturated' structural model which includes all the (unidirectional) paths between the manifest and latent variables (cf. Bentler & Bonett, 1980). This saturated model serves as a reference to which the fit of other structural models can be compared.

In order to test the hypotheses, we fitted a model in which only occupational turnover intention had a direct effect on occupational turnover. The three exogenous latent factors were

assumed to have direct effects on occupational turnover intention, but no direct effects on occupational turnover (see Figure 2).

********** Insert Figure 2 about here **********

This hypothesized model had an acceptable fit: Chi-square = 62.93, df = 22, *p* = 00001; NFI = .962; TLI = .959; CFI = .975; IFI = .975; AGFI = .963; RMSEA = .050 (90% confidence interval: .035 - .064). In this model, 0.9% of the variance in occupational turnover was explained by occupational turnover intention.

Next, we examined whether the hypothesized model could be improved by adding direct paths between the exogenous variables and occupational turnover. The presence of such direct paths would be evidence for a rejection of the hypothesized full mediation via occupational turnover intention (see Hypotheses 5a, 5b en 5c), Therefore, we inspected the modification indices presented through the Lagrange Multiplier Test (Chou & Bentler, 1990). The outcomes of this test revealed that the hypothesized model could indeed be improved by adding the direct path from experience in profession to occupational turnover. The fit indices of this alternative model (see Figure 3) were as follows: Chi-square = 58.87, df = 21, *p* = 00002; NFI = .965; TLI = .960; CFI = .977; IFI = .977; AGFI = .964; RMSEA = .049 (90% confidence interval: .034 - .064). The Chi-square difference between this model and the model in Figure 2 was 4.06 ($p < .05$). This means that the model in Figure 3 has a better fit than the hypothesized model in Figure 2. In this final model, 1.4% of the variance in occupational turnover is explained.

********** Insert Figure 3 about here **********

Figure 3 clearly shows that Hypothesis 1 is supported by the findings: indeed experience in the nursing profession is *negatively* associated with occupational turnover intention: standardized path coefficient (β = -.160, test statistic (t) = -4.30, p < .05). Hypothesis 2, stating that job demands are *positively* related to occupational turnover intention was also supported (β = .296; t = 3.86, p < .05). Hypothesis 3, stating that job resources would be *negatively* related to occupational turnover intention, was also supported (β = -.187, t = -2.31, p < .05). Together, the three exogenous latent factors in our model explained 22% of the variance in occupational turnover intention. Hypothesis 4 claimed that occupational turnover intention would be *positively* associated with occupational turnover. Indeed, the path from intention to actual exit behavior was significant (β = .077; t = 2.08, p < .05. The results pertaining to our fifth and final hypothesis were somewhat more complicated. Hypothesis 5 stated that the effects of experience in the profession (H5a), job demands (H5b), and job resources (H5c) would be mediated by occupational turnover intention. The Lagrange Multiplier Test accompanying the results of the hypothesized model in Figure 2 indicated that the direct paths from job demands and job resources to occupational turnover were not significant indeed. However, as remarked earlier, the fit of this model could be improved by adding a direct path from experience in the nursing profession to occupational turnover. The resulting (final) model in Figure 3 incorporates this path (β = -.077; t = -2.02, p < .05). This means that the more extended the experience of these nurses (i.e., the higher their age and the longer the tenure with their current employer and in their profession), the smaller the chances that they will actually leave the nursing profession, irrespective of their intention to do so. Obviously, occupational turnover intention does not fully mediate the relationship between experience in the nursing profession and occupational turnover.

We have supplemented our findings with bootstrapping (cf. Hayes, 2009), using 5000 replications with a sample size identical to the original sample (N = 753) and with resampling. These analyses confirmed the absence of an indirect effect of the three exogenous variables on occupational turnover, while supporting the presence of direct effects of experience as a nurse (mean parameter estimate = -.0274, mean SE = .0136, t = -2.01, $p < .05$) and occupational turnover intention (mean parameter estimate = .0271, mean SE = .0130, t = 2.08, $p < .05$) on occupational turnover. Together, these findings indicate that occupational turnover intention cannot be considered a mediator of the effects of job demands and job resources on occupational turnover (cf. Mathieu & Taylor, 2006).

Discussion

Past studies on turnover have paid relatively little attention to the role of working conditions in predicting premature exit behavior. The present longitudinal study aims to fill this gap by using the JD-R framework to predict nurses' occupational turnover. Results showed that our hypothesized mediation model fitted the data well, although an alternative model still had a better fit. In this final model, the experience in the nursing profession showed a direct (negative) effect on occupational turnover. In contrast to our fifth hypothesis, the intention to leave the nursing profession did not mediate the relationships of job demands and job resources with actual exit behavior. Whereas job demands were positively related to the intention to leave the nursing profession, the relationships of job resources and experience in the nursing profession with occupational turnover intention were negative. It can be concluded that the JD-R framework is a fruitful perspective to better understand and predict nurses' intention to leave their profession and offers useful starting-points for primary prevention. However, it appeared that the JD-R framework had no explanatory power with regard to the prediction of actual occupational turnover.

Although our model turned out to be useful in predicting European nurses' occupational turnover intention, several reflections can be made. First, the explained variance in exit behavior is quite small. However, from the turnover literature it is clear that even the most inclusive models leave the vast majority of variance unexplained (e.g., Griffeth et al., 2000). More specifically, in this study, the correlations of the other - continuous - variables with the dependent dichotomous variable Occupational Turnover are point-biserial correlations. In the present study, the distribution of the dichotomy was 85-15%, implying a less than optimal maximum value for the correlations caused by a serious restriction of variance in the dichotomous variable (see Steel, Shane, & Griffeth, 1990; Thorndike, 1978). In such a case, the limits of the point-biserial correlation are about ± .70. Over the years, several methods have been proposed to correct this correlation coefficient to account for the characteristics of the turnover distribution (e.g., Steel et al., 1990). Generally, these correction formulas lead to higher correlation coefficients resulting in a higher percentage of explained variance in the dependent (dichotomous) variable. However, a disadvantage of the application of correction formulas is that the comparability of the outcomes of specific empirical work with other studies would decrease. In addition, Williams (1990) pointed out that the skewed distributions of turnover variables in particular studies may reflect real underlying processes in the organizations or occupations under study. In the present research, the low percentage of leavers within the study period probably reflects the characteristics of the employees involved, i.e., nurses who consider their profession as a calling. Therefore, we did not apply correction formulas in this study. Moreover, given the size of the European nursing workforce, even a small percentage of explained variance in exit behavior implies a substantial loss of qualified staff for the labor market, due to the fact that it is not so easy to quickly find alternative staff with comparable levels of expertise and experience.

Second, although our model included various job demands and job resources of which the relevance for the nursing profession is undisputed, there might still be other job characteristics that contribute to the prediction of occupational turnover intention and actual exit behavior among nurses, such as a high workload, high physical demands, and feedback or support from colleagues and supervisor.. Future research could test the predictive value of models including other demands and resources in addition to those that were already studied in our current model.

Third, experience in the nursing profession turned out to have a direct effect on occupational turnover. This means that older and more experienced nurses show less actual exit behavior in comparison with their younger and less experienced counterparts, irrespective of whether or not they consciously think about leaving the nursing profession. A possible explanation might be that, due to stereotyping of older workers, these nurses do not view themselves as very employable (Van der Heijden, De Lange, Demerouti, & Van der Heijde, 2009b) (anymore), and therefore consider it safer to stay in their current profession. Another explanation might be the so-called healthy worker effect (Waldron, Herold, Dunn, & Staum, 1982), which means that only those nurses who are able to adequately cope with the demands of the profession will 'survive'.

Fourth, although quite some scholars have argued that job satisfaction is an important predictor of turnover intention and actual turnover (cf. Gray-Toft & Anderson, 1981; Mobley, 1977), we did not include this variable in our current model. Houkes, Janssen, De Jonge and Nijhuis (2001) stated that the concept of job satisfaction appears to be rather non-specific, and may be related to many other variables, such as work characteristics, as well as work outcomes (e.g., turnover intention) (see also Coomber & Barriball, 2007). Since our objective was to describe specific relationships between job demands and resources, on the one hand, and theoretically distinct dependent variables on

the other hand - i.e., occupational turnover intention and actual exit behavior - job satisfaction does not seem to be a suitable variable for our model.

Finally, even although turnover intention has been widely accepted as a proximal predictor of actual turnover, we propose two arguments indicating why it is important to incorporate both variables. First, though in general, scholars have found that employees' turnover intentions and actual quit behaviors are statistically correlated, findings as to the strength of this relationship are inconclusive, with some studies reporting high correlations and other studies reporting weaker, or even insignificant, correlations (Cohen, Blake, & Goodman, 2016). In line with Kirschenbaum and Weisberg (1990), who stressed that survey responses cannot actually attest to actual future behavior, with this study we wanted to do justice to the complexity of the turnover phenomenon. Second, there is ample empirical evidence (see the meta-analysis on job attitudes and behavior by Harrison, Newman, & Roth, 2006) for the basic assumption of attitude theory that intent is the best predictor of behavior (e.g., Fishbein & Ajzen, 1975). Therefore, occupational turnover has been included as a mediator in our empirical model.

Limitations of the Study and Recommendations for Future Research

Firstly, all data have been collected using survey research opening up the possibility of response set consistencies. Secondly, although our two-wave approach enabled us to address issues of causality, future research using multiple waves can provide more specific information about the stability and change of the variables, and about cross-lagged (i.e., over time) relationships compared with our cross-sectional approach (De Lange, Taris, Kompier, Houtman, & Bongers, 2003). Concrete, one suggestion for future research is to study the possibly mediating role of intention to leave in a longitudinal design in which job demands and resources, intention to leave, and actual exit behavior are measured at various (preferably theoretically chosen) points in time, and to compare mediation models with

models in which intention to leave has different positions in the models to be tested. Future work could also incorporate both *main* (additive) effects of job demands and job resources on intention to leave and exit behavior and *interactive* effects because each perspective has different theoretical and practical implications (see also Bakker & Demerouti, 2007; Bakker & Demerouti, 2017).

Thirdly, due to the limited sample sizes for some countries and the considerable skewness in the sampling distribution across institutional types (> 70% of the nurses were working in hospital settings), further research is needed to investigate the impact of country and institutional type. In order to get more insight in the extent to which generalization of results across these countries and institutional types is meaningful, we conducted a series of multi-sample or multiple-group analyses (cf. Bentler, 1989, 2006; Kenny, 2011), distinguishing between the three working contexts and the three European regions [i.e., Northern Europe (N = 312; Finland), Mediterranean Europe (N = 216; France and Italy) and Central-Western Europe (N = 225, Germany, Poland, and the Netherlands)] included in this study. Results showed that, although several of the equality constraints imposed in the series of multiple group models were disputable, the various subsamples also had many similarities. With regard to the various work contexts, the findings in this study particularly reflect the situation of nurses working in a hospital. With respect to the three European regions we distinguished, we found differences in the meaning and importance of the variables measuring job resources.

Related to the former issue, more research is needed to better understand the extent to which our findings would generalize to other occupational settings and/or to other countries (outside Europe), that is to say, whether they are culturally-invariant. As exit behavior is highly dependent upon labor market situations, the predictive value of job demands and resources might be different depending upon country. For instance, a number

of studies has shown that in individualistic cultures, compared with collectivist cultures, the relationship between satisfaction with one's job and withdrawal behavior is significantly stronger (Thomas & Au, 2002).

Moreover, self-perceived employability (career potential) (see Fugate, Kinicki, & Ashforth, 2004; Van der Heijde & Van der Heijden, 2006), personality characteristics, and age may moderate the effects of job demands and job resources upon occupational turnover intention and resulting actual exit behavior. While increasing job demands may lead to exit behavior, we expect that for some employees a perceived lack of employability, and/or age-related stereotyping will frustrate them in looking for better job alternatives. In addition, employees are expected to differ highly as regards their abilities to cope with a stressful job, and to keep up performance expectations, depending upon their specific personality constellation (see also Zimmerman, 2008). Also, job/or organizational (Ng & Feldman, 2011) and career embeddedness (Feldman & Ng, 2007) are important factors to take into account, referring to the totality of forces that keep people in their current employment situations.

Despite the clear recognition in turnover models (Bretz, Boudreau, & Judge, 1994) that two basic market opportunity destinations are available, i.e., internal and external ones, little is known about how these alternatives affect turnover patterns (Mano-Negrin & Tzafrir, 2004). Therefore, there is a theoretical and empirical need to take a more comprehensive approach in studying exit behavior. Only if we are able to understand to what extent labor market circumstances allow or hinder nurses to 'freely' make career choices, the effects of job demands and resources can be more clearly understood. We also recommend to pursue research aimed at disentangling the effects of decreasing mobility due to a lack of opportunities (i.e., 'negative' reasons for age-related retention) versus the effects due to perceiving one's profession as a calling (i.e., positive reasons for age-related retention). Micro- and meso-level models, taking into account individual, job-related, and

organizational characteristics, need to be integrated with so-called micro-sociological models describing labor market circumstances and opportunities (see also Widerszal-Bazyl et al., 2008).

Finally, we call for additional research wherein the incremental validity of the current empirical model is investigated. Models wherein both variables pertaining to working conditions and variables concerning career aspects are taken into account are necessary to increase our understanding of the effects of one's current work situation versus one's broader career issues, respectively.

Practical Implications

First, employers in health care should secure that the emotional demands of the job (which are inherent to the nursing profession characterized by the close interaction with patients and their relatives, and wherein confrontations with negative emotions, suffering, and chronic stress are prevalent) and the level of work-home interference of their nursing staff remain at tolerable levels in order to retain them for the nursing profession. Given the importance of a healthy work-life balance, we advocate the development of workplace flexibility, for instance by flexible rostering and opportunities to skip night shifts if one's sustainable employability is seriously at risk, in order to attract and retain a talented workforce and to optimize workforce productivity and well-being over the life-span (see also Kossek, Lewis, & Hammer, 2010). Notwithstanding the importance of organizational efforts in this regard, part of the solution for effectively dealing with work-home interference lies with the individual employee as well (see for instance Kossek & Lautsch, 2012). After all, protecting and enhancing sustainable careers comprises a dual responsibility (Van der Heijden & De Vos, 2015). However, in case high job demands are unavoidable, managers in health care institutions should at least try to provide nurses with

enough job resources, such as influence at work and opportunities for development, in order to be able to cope with the pressure and to decrease their intention to leave nursing.

Second, they should counteract negative stereotyping of older nurses and instead make active efforts to replace their image of no longer being able to learn and to adapt to new circumstances by an image that values the skills and experiences these older nurses have built up over the years, and that can be an important source of 'professional wisdom' for their younger and less experienced colleagues. Moreover, managers in health care institutions could also invest in getting rid of the possible negative self-image of older nurses by offering them training and education programs on a regular basis in order to keep them up to date with the most recent professional developments in their field, and as such to increase their self-efficacy (Hsu, Chang, & Hsieh, 2015).

To conclude, the results of this study may form the basis for formulating an effective retention management plan for nurses working in health care institutions. Ideally, this should be based upon a thorough turnover analysis, for instance by performing exit interviews dealing with the specific (risk) factors in our theoretical model. As many nurses perceive their occupation to be a calling instead of a regular job (cf. Arnold et al., 2006), they might be inclined to stay in their profession, even in case their sustainable employability (Van der Heijden & De Vos, 2015) is seriously endangered. Obviously, thorough attention for nurses' sustainable careers is of utmost importance to be able protect and support them throughout the life-span.

References

Adams, G. A., & Beehr, T. A. (1998). Turnover and retirement: A comparison of their similarities and differences. *Personnel Psychology*, *51*(3), 643-665. http://dx.doi.org/10.1111/j.1744-6570.1998.tb00255.x

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179-211. http://dx.doi.org/10.1016/0749-5978(91)90020-T

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, *103*(3), 411-423. http://dx.doi.org/10.1037/0033-2909.103.3.411

Arkes, H. R., & Blumer, C. (1985). The psychology of sunk cost. *Organizational Behavior and Human Decision Processes, 35*(1), 124-140. http://dx.doi.org/10.1016/0749-5978(85)90049-4

Arnold, H. J., & Feldman, D. C. (1982). A multivariate analysis of the determinants of job turnover. *Journal of Applied Psychology, 67*(3), 350-360. http://dx.doi.org/10.1037/0021-9010.67.3.350

Arnold, J., Loan-Clarke, J., Coombs, C., Wilkinson, A., Park, J., & Preston, D. (2006). How well can the theory of planned behavior account for occupational intentions? *Journal of Vocational Behavior, 69*(3), 374-390. http://dx.doi.org/10.1016/j.jvb.2006.07.006

Babakus, E., Yavas, U., & Karatepe, O. M. (2008). The effects of job demands, job resources and intrinsic motivation on emotional exhaustion and turnover intentions: A study in the Turkish hotel industry. *International Journal of Hospitality & Tourism Administration*, *9*(4), 384-404. http://dx.doi.org/10.1080/15256480802427339

Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: state of the art. *Journal of Managerial Psychology, 22*(3), 309-328. http://dx.doi.org/10.1108/02683940710733115

Bakker, A. B., & Demerouti, E. (2017). Job Demands–Resources Theory: Taking Stock and Looking Forward. *Journal of Occupational Health Psychology, 22*(3), 273-285. http://dx.doi.org/10.1037/ocp0000056

Bakker, A. B., Demerouti, E., De Boer, E., & Schaufeli, W. B. (2003a). Job demands and job resources as predictors of absence duration and frequency. *Journal of Vocational Behavior, 62*(2), 341-356. http://dx.doi.org/10.1016/S0001-8791(02)00030-1

Bakker, A. B., Demerouti, E., & Schaufeli, W. B. (2003b). Dual processes at work in a call centre: An application of the job demands–resources model. *European Journal of Work and Organizational Psychology, 12*(4), 393-417.` http://dx.doi.org/10.1080/13594320344000165

Bartlett, K. (2001). The relationship between training and organizational commitment: A study in the health care field. *Human Resource Development Quarterly, 12*(4), 335-353. http://dx.doi.org/10.1002/hrdq.1001

Bentler, P. M. (1989). *EQS structural equations program manual.* Los Angeles, California: BMPD Statistical Software.

Bentler, P. M. (2006). *EQS 6 Structural Equations Program Manual.* Los Angeles, Encino, Ca: Multivariate Software, Inc.

Bentler, P. M., & Bonett, D.G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*(3), 588-606. http://dx.doi.org/10.1037/0033-2909.88.3.588

Bentler, P. M., & Speckart, G. (1981). Attitudes 'cause' behaviors: a structural equation analysis. *Journal of Personality and Social Psychology, 40*(2), 226-238.

http://dx.doi.org/10.1037/0022-3514.40.2.226

Bentler, P. M., & Wu, E. J. C. (2002). EQS 6 for Windows user's guide. *Encino, CA: Multivariate Software Inc*.

Blau, G. (2007). Does a corresponding set of variables for explaining voluntary turnover transfer to explaining voluntary occupation turnover. *Journal of Vocational Behavior, 70*(1), 135-145.

http://dx.doi.org/10.1016/j.jvb.2006.07.007

Blau, G. J., & Lunz, M. E. (1998). Testing the incremental effect of professional commitment on intent to leave one's profession beyond the effects of external, personal, and work-related variables. *Journal of Vocational Behavior, 52*(2), 260-269.

http://dx.doi.org/10.1006/jvbe.1997.1601

Boamah, S. A., & Laschinger, H. (2015). The influence of areas of worklife fit and work-life interference on burnout and turnover intentions among new graduate nurses. *Journal of Nursing Management, 24*(2), E164-E174.

http://dx.doi.org/10.1111/jonm.12318

Boyd, C. M., Bakker, A. B., Pignata, S., Winefield, A. H., Gillespie, N., & Stough, C. (2011). A longitudinal test of the job demands-resources model among Australian University Academics. *Applied Psychology: An International Review, 60*(1), 112-140.

http://dx.doi.org/10.1111/j.1464-0597.2010.00429.x

Bretz, R. D., Boudreau, J. W., & Judge, T. A. (1994). Job search behavior of employed managers. *Personnel Psychology*, *47*(2), 275-301.

http://dx.doi.org/10.1111/j.1744-6570.1994.tb01725.x

Buchan, J., Duffield, C., & Jordan, A. (2015). 'Solving' nursing shortages: do we need a New Agenda? *Journal of Nursing Management*, *23*(5), 543-545. http://dx.doi.org/10.1111/jonm.12315

Carless, S. A., & Bernath, L. (2007). Antecedents of intent to change careers among psychologists. *Journal of Career Development, 33*(3), 183-200. http://dx.doi.org/10.1177/0894845306296646

Carson, K. D., Carson, P. P., & Bedeian, A. G. (1995). Development and construct validation of a career entrenchment measure. *Journal of Occupational and Organizational Psychology*, *68*(4), 301-320. http://dx.doi.org/10.1111/j.2044-8325.1995.tb00589.x

Chou, C. P., & Bentler, P. M. (1990). Model modification in covariance structure modeling: A comparison among likelihood ratio, Lagrange Multiplier, and Wald tests. *Multivariate Behavioral Research, 25*(1), 115-136. http://dx.doi.org/10.1207/s15327906mbr2501_13

Cohen, G., Blake, R. S., & Goodman, D. (2016). Does turnover intention matter? Evaluating the usefulness of turnover intention rate as a predictor of actual turnover rate. *Review of Public Personnel Administration*, *36*(3), 240-263. http://dx.doi.org/10.1177/0734371X15581850

Coomber, B., & Barriball, K. L. (2007). Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. *International Journal of Nursing Studies, 44*(2), 297-314. http://dx.doi.org/10.1016/j.ijnurstu.2006.02.004

Dabney, B. W., & Kalisch, B. J. (2015). Nurse staffing levels and patient-reported missed nursing care. *Journal of Nursing Care Quality*, *30*(4), 306-312. http://dx.doi.org/10.1097/NCQ.0000000000000123

Dalton, D. R., & Todor, W. D. (1982). Turnover: a lucrative hard dollar phenomenon. *Academy of Management Review, 7*(2), 212-217. http://dx.doi.org/10.5465/AMR.1982.4285569

Deci, E. L., & Ryan, R. M. (1985). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality, 19*(2), 109-134. http://dx.doi.org/10.1016/0092-6566(85)90023-6

De Cuyper, N., Mauno, S., Kinnunen, U., & Mäkikangas, A. (2011). The role of job resources in the relation between perceived employability and turnover intention: A prospective two-sample study. *Journal of Vocational Behavior, 78*(2), 253-263. http://dx.doi.org/10.1016/j.jvb.2010.09.008

De Jonge, J, Mulder, M. J. G. P., & Nijhuis, F. J. N. (1999). The incorporation of different demand concepts in the Job Demand-Control model: effects on health care professionals. *Social Science and Medicine, 48*(9), 1149-1160. http://dx.doi.org/10.1016/S0277-9536(98)00429-8

De Lange, A. H., Taris, T. W., Kompier, M. A., Houtman, I. L., & Bongers, P. M. (2003). "The very best of the millennium": longitudinal research and the demand-control-(support) model. *Journal of Occupational Health Psychology*, *8*(4), 282-305. http://dx.doi.org/10.1037/1076-8998.8.4.282

Demerouti, E., Bakker, A. B., Nachreiner, F., & Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499-512. http://dx.doi.org/10.1037/0021-9010.86.3.499

De Pater, I. E., Van Vianen, E. M., Fischer, A. H., & Van Ginkel, W. P. (2009). Challenging experiences: gender differences in task choice. *Journal of Managerial Psychology, 24*(1), 4-28. http://dx.doi.org/10.1108/02683940910922519

Dwyer, D. J., Schwartz, R. H., & Fox, M. L. (1992). Decision-making autonomy in nursing. *Journal of Nursing Administration, 22*(2), 17-23. http://dx.doi.org/10.1097/00005110-199202000-00020

Eby, L. T., Casper, W. J., Lockwood, A., Bordeaux, C., & Brinley, A. (2005). Work and family research in IO/OB: Content analysis and review of the literature (1980-2002). *Journal of Vocational Behavior, 66*(1), 124-197. http://dx.doi.org/10.1016/j.jvb.2003.11.003

Feldman, D. C., & Ng, T. W. (2007). Careers: Mobility, embeddedness, and success. *Journal of Management*, *33*(3), 350-377. http://dx.doi.org/10.1177/0149206307300815

Fishbein, M., Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. Reading, MA: Addison–Wesley.

Fugate, M., Kinicki, A. J., & Ashforth, B. E. (2004). Employability A psycho-social construct, its dimensions, and applications. *Journal of Vocational Behavior*, *65*(1), 14-38. http://dx.doi.org/10.1016/j.jvb.2003.10.005

Grandey, A. A., & Cropanzano, R. (1999). The conservation of resources model applied to work–family conflict and strain. *Journal of Vocational Behavior*, *54*(2), 350-370. http://dx.doi.org/10.1006/jvbe.1998.1666

Gray-Toft, P., & Anderson, J. G. (1981). Stress among hospital nursing staff: Its causes and effects. *Social Science and Medicine, 15*(5), 639-647. https://doi.org/10.1016/0271-7123(81)90087-0

Griffeth, R. W., Hom, P. W., & Gaertner, S. (2000). A meta-analysis of antecedents and correlates of employee turnover: Update, moderator tests, and research implications for the next millennium. *Journal of Management, 26*(3), 463-488. http://dx.doi.org/10.1177/014920630002600305

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, *16*(2), 250-279. http://dx.doi.org/10.1016/0030-5073(76)90016-7

Hall, D. T. (2004). The protean career: A quarter-century journey. *Journal of Vocational Behavior, 65*(1), 1-13. http://dx.doi.org/10.1016/j.jvb.2003.10.006

Hambleton, R. K. (1994). Guidelines for adapting educational and psychological tests: A progress report. *European Journal of Psychological Assessment*, *10*, 229–244.

Harrison, D. A., Newman, D. A., Roth, P. L. (2006). How important are job attitudes? Meta-analytic comparisons of integrative behavioral outcomes and time sequences. *Academy of Management Journal, 49*(2), 305-325. http://dx.doi.org/10.5465/AMJ.2006.20786077

Hart, S. M., & Warren, A. M. (2015). Understanding nurses' work: Exploring the links between changing work, labour relations, workload, stress, retention and recruitment. *Economic and Industrial Democracy*, *36*(2), 305-329. http://dx.doi.org/10.1177/0143831X13505119

Hasselhorn, H., Tackenberg, P., & Müller, B. (2003). Work Conditions and Intent to Leave the Profession Among Nursing Staff in Europe. Report no. 2003:7. A research project initiated by SALTSA (Joint Program for Working Life Research in Europe) and funded by the European Committee (QLK6-CT-2001-00475) National Institute for Working Life and the Swedish Trade Union in co-operation. Stockholm, Sweden.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs, 76*(4), 408-420. http://dx.doi.org/10.1080/03637750903310360

Hinkin, T. R., & Tracey, J. B. (2000). The cost of turnover: Putting a price on the learning curve. *The Cornell Hotel and Restaurant Administration Quarterly*, *41*(3), 14-21. https://doi.org/10.1016/S0010-8804(00)80013-0

Holtom, B. C., Mitchell, T. R., Lee, T. W., & Eberly, M. B. (2008). Turnover and retention research: A glance at the past, a closer review of the present, and a venture into the future. *Academy of Management Annals, 2*(1), 231-274. http://dx.doi.org/10.1080/19416520802211552

Hom, P. W., Caranikas-Walker, F., Prussia, G. E., & Griffeth, R. W. (1992). A meta-analytical structural equations analysis of a model of employee turnover. *Journal of Applied Psychology, 77*(6), 890-909. http://dx.doi.org/10.1037/0021-9010.77.6.890

Houkes, I., Janssen, P. M., De Jonge, J., & Nijhuis, F. J. N. (2001). Specific relationships between work characteristics and intrinsic work motivation, burnout and turnover intention: A multi-sample analysis. *European Journal of Work and Organizational Psychology, 10*(1), 1-23. http://dx.doi.org/10.1080/13594320042000007

Hoyle, R. H. (1995). *Structural equation modeling: Concepts, issues, and applications.* Thousand Oaks, CA: Sage.Hsu, L. L., Chang, W. H., & Hsieh, S. I. (2015). The effects of scenario-based simulation course training on nurses' communication competence and self-efficacy: a randomized controlled trial. *Journal of Professional Nursing*, *31*(1), 37-49. https://doi.org/10.1016/j.profnurs.2014.05.007.

Humphrey, S. E., Nahrgang, J. D., & Morgeson, F. P. (2007). Integrating motivational, social, and contextual work design features: a meta-analytic summary and theoretical extension of the work design literature. *Journal of Applied Psychology, 92*(5), 1332-1356.

http://dx.doi.org/10.1037/0021-9010.92.5.1332

Inkson, K., Gunz, H., Ganesh, S., & Roper, J. (2012). Boundaryless careers: Bringing back boundaries. *Organization Studies*, *33*(3), 323-340.

http://dx.doi.org/10.1177/0170840611435600

Jourdain, G., & Chênevert, D. (2010). Job demands–resources, burnout and intention to leave the nursing profession: A questionnaire survey. *International Journal of Nursing Studies*, *47*(6), 709-722.

http://dx.doi.org/10.1016/j.ijnurstu.2009.11.007

Karasek Jr, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly, 24*(2), 285-308.

http://dx.doi.org/10.2307/2392498.

Kenny, D. A., Kaniskan, B., & McCoach, D. B. (2015). The performance of RMSEA in models with small degrees of freedom. *Sociological Methods & Research, 44*(3), 486-507.

http://dx.doi.org/10.1177/0049124114543236

Kenny, D.A. (2011). *Multiple Groups.* http://davidakenny.net/cm/mgroups.htm.

Kim, H., & Stoner, M. (2008). Burnout and turnover intention among social workers: Effects of role stress, job autonomy and social support. *Administration in Social Work, 32*(3), 5-25.

http://dx.doi.org/10.1080/03643100801922357

Kirschenbaum, A., Weisberg, J. (1990). Predicting worker turnover: An assessment of intent on actual separations. *Human Relations, 43*(9), 829-847. http://dx.doi.org/10.1177/001872679004300902

Kossek, E. E., & Lautsch, B. A. (2012). Work–family boundary management styles in organizations: A cross-level model. *Organizational Psychology Review*, *2*(2), 152-171. http://dx.doi.org/10.1177/2041386611436264

Kossek, E. E., Lewis, S., & Hammer, L. B. (2010). Work—life initiatives and organizational change: Overcoming mixed messages to move from the margin to the mainstream. *Human Relations*, *63*(1), 3-19. http://dx.doi.org/10.1177/0018726709352385

Kossek, E., Pichler, S., Bodner, T., & Hammer, L. B. (2011). Workplace social support and work-family conflict: A meta-analysis clarifying the influence of general and work-family-specific supervisor and organizational support. *Personnel Psychology, 64*(2), 289-313. http://dx.doi.org/10.1111/j.1744-6570.2011.01211.x

Kristensen, T. S. (2000). *A new tool for assessing psychosicial factors at work: the Copenhagen Psychosocial Questionnaire.* Copenhagen: National Institute of Health.

Lee, Y-W., Dai, Y-T., & McCreary, L. L. (2015). Quality of work life as a predictor of nurses' intention to leave units, organizations and the profession. *Journal of Nursing Management, 23*(4), 521-531. http://dx.doi.org/10.1111/jonm.12166

Lewig, K. A., Xanthopoulou, D., Bakker, A. B., Dollard, M. F., & Metzer, J. C. (2007). Burnout and connectedness among Australian volunteers: A test of the Job-Demands-Resources model. *Journal of Vocational Behavior, 71*(3), 429-445.

http://dx.doi.org/10.1016/j.jvb.2007.07.003

Louis, M. R. (1980). Career transitions: Varieties and commonalities. *Academy of Management Review, 5*(3), 329-340.

http://dx.doi.org/10.2307/257108

Luk, D. M., & Shaffer, M. A. (2005). Work and family domain stressors and support: Within-and cross-domain influences on work–family conflict. *Journal of Occupational and Organizational Psychology*, *78*(4), 489-508.

http://dx.doi.org/10.1348/096317905X26741

Mano-Negrin, R., & Tzafrir, S. S. (2004). Job search modes and turnover. *Career development International*, *9*(5), 442-458.

http://dx.doi.org/10.1108/13620430410550727

Marsh, H. W., Balla, J. R., & Hau, K. T. (1996). An evaluation of incremental fit indices: A clarification of mathematical and empirical properties. In G. A. Marcoulides & R. E. Schumacker (Eds.), *Advanced structural equation modeling: Issues and techniques*. Mahwah, NJ: Erlbaum.

Mathieu, J. E., & Taylor, S. R. (2006). Clarifying conditions and decision points for mediational type inferences in Organizational Behavior. *Journal of Organizational Behavior, 27*(8), 1031-1056.

https://doi.org/10.1002/job.406

Maurer, T.J., Weiss, E.M., & Barbeite, F.G. (2003). A model of involvement in work-related learning and development activity: The effects of individual, situational, motivational, and age variables. *Journal of Applied Psychology, 88*(4), 707-724.

http://dx.doi.org/10.1037/0021-9010.88.4.707

McVicar, A. (2016). Scoping the common antecedents of job stress and job satisfaction for nurses (2000–2013) using the job demands–resources model of stress. *Journal of Nursing Management, 24*(2), E112-E136. http://dx.doi.org/10.1111/jonm.12326

Mobley, W. H. (1977). Intermediate linkages in the relationship between job satisfaction and employee turnover. *Journal of Applied Psychology*, *62*(2), 237-240. http://dx.doi.org/10.1037/0021-9010.62.2.237

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)*, 400–10. http://dx.doi.org/10.1037/0021-9010.81.4.400

Ng, T. W., & Feldman, D. C. (2011). Locus of control and organizational embeddedness. *Journal of Occupational and Organizational Psychology, 84*(1), 173-190. http://dx.doi.org/10.1348/096317910X494197

Poell, R. F., Van Dam, K., & Van den Berg, P. T. (2004). Organising learning in work contexts. *Applied Psychology: An International Review*, *53*(4), 529-540. http://dx.doi.org/10.1111/j.1464-0597.2004.00186.x

Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology*, *85*(4), 612-624. http://dx.doi.org/10.1037/0021-9010.85.4.612

Rodrigues, R. A., & Guest, D. (2010). Have careers become boundaryless? *Human Relations*, *63*(8), 1157-1175. http://dx.doi.org/10.1177/0018726709354344

Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, *25*(3), 293-315.

http://dx.doi.org/10.1002/job.248

Schreiber, J. B., Stage, F. K., King, J., Nora, A., & Barlow, E. A. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research, 99*(6), 323-337.

http://dx.doi.org/10.3200/JOER.99.6.323-338

Steel, R. P., Shane, G. S., & Griffeth, R. W. (1990). Correcting turnover statistics for comparative analysis. *Academy of Management Journal, 33*(1), 179-187.

http://dx.doi.org/10.2307/256357

Tansky, J., & Cohen, D. (2001). The relationship between organizational support, employee development, and organizational commitment: An empirical study. *Human Resource Development Quarterly*, *12*(3), 285-300.

http://dx.doi.org/10.1002/hrdq.15

Theorell, T., Perski, A., Åkerstedt, T., Sigala, F., Ahlberg-Hultén, G., Svensson, J., & Eneroth, P. (1988). Changes in job strain in relation to changes in physiological state: a longitudinal study. *Scandinavian Journal of Work, Environment & Health*, *14*(3), 189-196.

http://dx.doi.org/10.5271/sjweh.1932

Thomas, D. C., & Au, K. (2002). The effect of cultural differences on behavioral responses to low job satisfaction. *Journal of International Business Studies, 33*(2), 309-326.

http://dx.doi.org/10.5271/sjweh.1932

Thorndike, R. M. (1978). *Correlational procedures for research.* New York: Gardner Press.

Van Breukelen, W., Van der Vlist, R., & Steensma, H. (2004). Voluntary employee turnover: combining variables from the 'traditional' turnover literature with the theory of planned behavior. *Journal of Organizational Behavior, 25*(7), 893-914. http://dx.doi.org/10.1002/job.281

Van der Heijde, C. M., & Van der Heijden, B. I. J. M. (2006). A competence-based and multidimensional operationalization and measurement of employability. *Human Resource Management, 45*(3), 449-476. http://dx.doi.org/10.1002/hrm.20119

Van der Heijden, B. I. J. M., De Lange, A. H., Demerouti, E., & Van der Heijde, C. M. (2009b). Employability and Career Success Across the Life-Span. Age Effects on the Employability-Career Success Relationship. *Journal of Vocational Behavior, 74*(2), 156-164. http://dx.doi.org/10.1016/j.jvb.2008.12.009

Van der Heijden, B. I. J. M. & De Vos, A. (2015). Sustainable careers: Introductory chapter. In A. De Vos & B. I. J. M. Van der Heijden (Eds), *Handbook of Research on Sustainable Careers* (pp. 1-19), Cheltenham, UK and Northampton, MA, USA: Edward Elgar Publishing.

Van der Heijden, B. I. J. M., Van Dam, K., & Hasselhorn, H. M. (2009a). Intention to leave nursing: The importance of interpersonal work context, work-home interference, and job satisfaction beyond the effect of occupational commitment. *Career Development International, 14*(7), 616-635. https://doi.org/10.1108/13620430911005681

Van de Schoot, R., Lugtig, P., & Hox, J. (2012). A checklist for testing measurement invariance. *European Journal of Developmental Psychology*, *9*(4), 486-492.

http://dx.doi.org/10.1080/17405629.2012.686740

Vardaman, J. M., Allen, D. G., Renn, R. W., & Moffitt, K. R. (2008). Should I stay or should I go? The role of risk in employee turnover decisions. *Human Relations, 61*(11), 1531-1563. http://dx.doi.org/10.1177/0018726708096637

Waldron, I., Herold, J., Dunn, D., & Staum, R. (1982). Reciprocal effects of health and labor force participation among women: Evidence from two longitudinal studies. *Journal of Occupational Medicine, 24*(2), 126-132

Warr, P. B. (1990). Decision latitude, job demands, and employee well-being. *Work & Stress, 4*(4), 285-294. http://dx.doi.org/10.1080/02678379008256991

Widerszal-Bazyl, M., Radkiewicz, P., Hasselhorn, H. M., Conway, P. M., Van der Heijden, B. I. J. M., & the NEXT Study Group (2008). The Demand-Control-Support model and intent to leave across six European countries: The role of employment opportunities. *Work & Stress, 22*(2), 166-184. http://dx.doi.org/10.1080/02678379008256991

Williams, C.R. (1990). Deciding when, how, and if to correct turnover correlations. *Journal of Applied Psychology, 75*(6), 732-737. http://dx.doi.org/10.1037/0021-9010.75.6.732

Yousaf, A., Sanders, K., & Abbas, Q. (2015). Organizational/occupational commitment and organizational/occupational turnover intentions: A happy marriage?. *Personnel Review, 44*(4), 470-491. http://dx.doi.org/10.1108/PR-12-2012-0203

Zimmerman, R. D. (2008). Understanding the impact of personality traits on individuals' turnover decisions: A meta-analytical path model. *Personnel Psychology, 61*(2), 309-348.

http://dx.doi.org/10.1111/j.1744-6570.2008.00115.x

Figure 1 The variables in this study with their hypothesized interrelationships and causal paths.

Figure 2 Hypothesized structural model (Chi-square = 62.93, df = 22, *p* = .00001, NFI = .962, TLI = .959, CFI = .975, IFI = .975, AGFI = .963, RMSEA = .050).

Figure 3 Final structural model with a direct path from experience in profession to occupational turnover (Chi-square = 58.87, df = 21, *p* = .00002, NFI = .965, TLI = .960; CFI = .977, IFI = .977, AGFI = .964, RMSEA = .049).

Table 1: Means, standard deviations, scale reliabilities, and correlations of the variables in this study

	M	*SD*	1	2	3	4	5	6	7	8	9
1. Age in years	38.97	11.21	---								
2. Tenure in profession	13.56	10.81	.87	---							
3. Tenure with present employer		3.98	1.28	.50	.56	---					
4. Emotional demands	3.50	0.70	-.07	-.07	.02	(0.70)					
5. Work-home interference	2.74	1.05	-.07	-.05	.06	.25	(0.88)				
6. Influence at work	2.97	0.84	.06	.08	.10	.12	-.21	(0.81)			
7. Opportunities for development	3.83	0.78	.07	.06	.07	.02	-.11	.21	(0.77)		
8. Occupational turnover intention	1.96	1.03	-.25	-.20	-.10	.16	.28	-.19	-.16	(0.86)	
9. Occupational turnover	1.15	0.36	-.11	-.09	-.03	.03	-.03	-.07	.00	.09	---

Note. *N* = 753; Cronbach's Alphas on the diagonal;

r > |.075|, *p* < .05; *r* > |.097|, *p* < .01; *r* > |.135|, *p* < .001 (two-tailed)

Highlights

- Longitudinal study on the role of occupational turnover intention in predicting exit behavior
- The Job Demands-Resources framework as an explanatory mechanism in predicting exit behavior
- Useful insights for preventing turnover intention and exit behavior

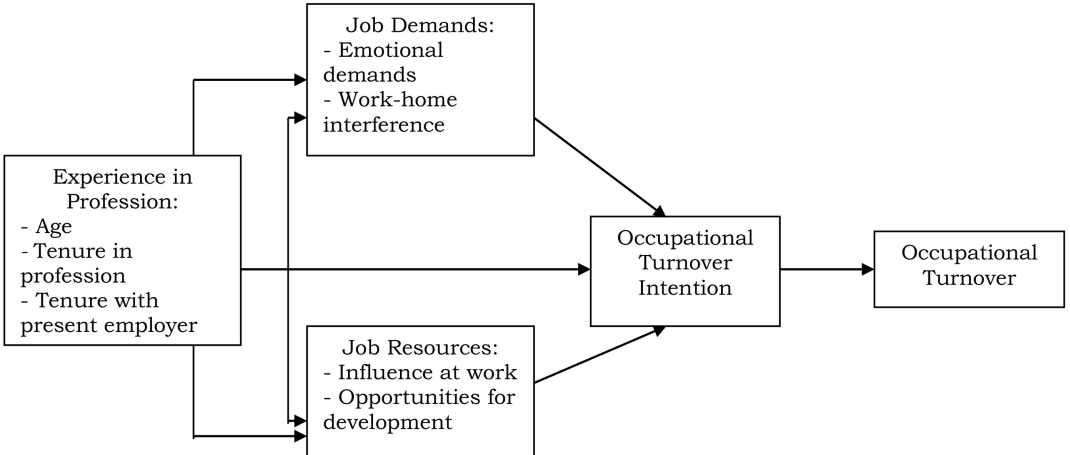
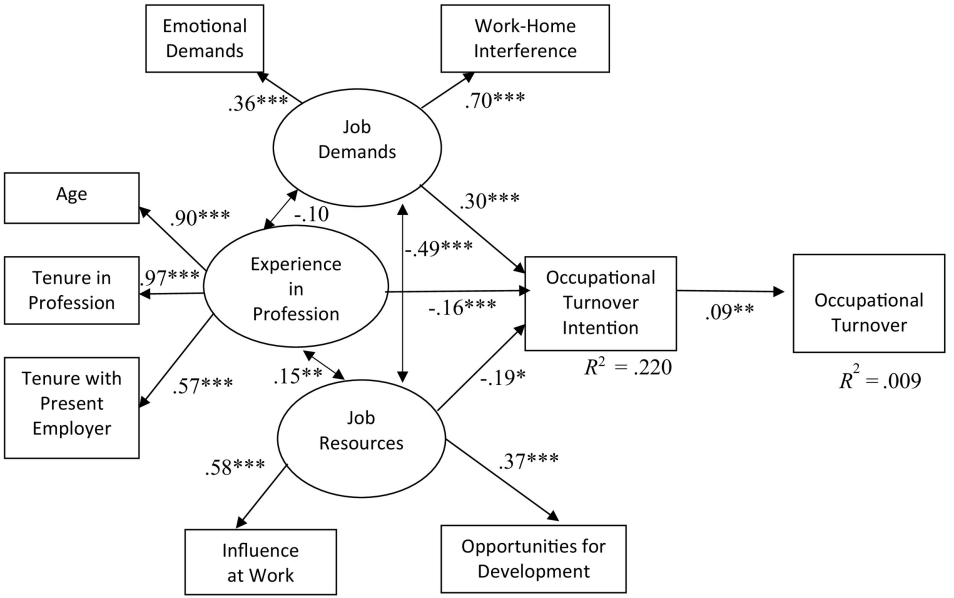
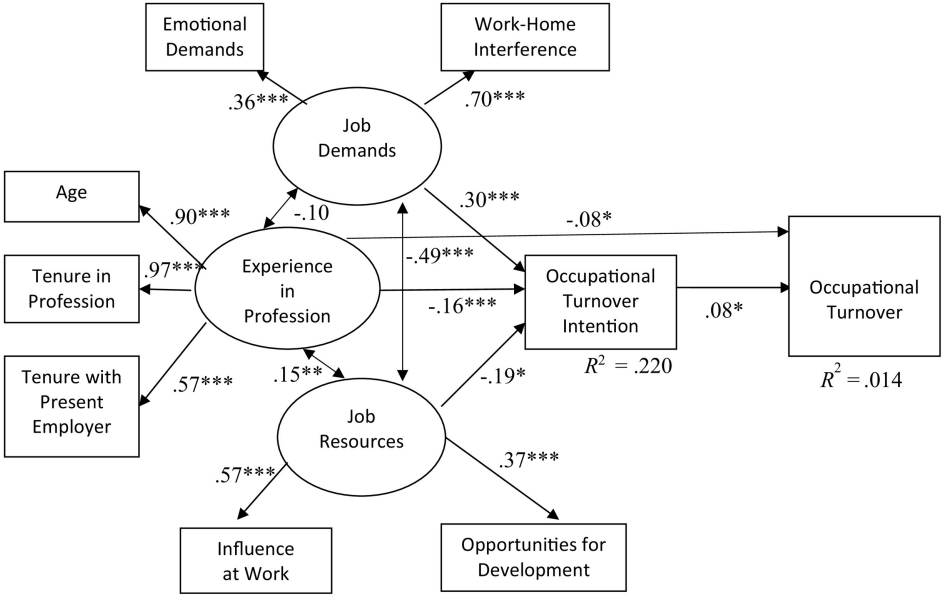

Job Demands:
- Emotional demands
- Work-home interference
Experience in Profession:
- Age
- Tenure in profession
- Tenure with present employer
Occupational Turnover Intention
Occupational Turnover
Job Resources:
- Influence at work
- Opportunities for development

Figure 1



*** $p < .001$; ** $p < .01$; * $p < .05$

Figure 2



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*** $p < .001$; ** $p < .01$; * $p < .05$

Figure 3