Social work environment and premature departure from the nursing profession: A cross-cultural comparison on the impact of supervisory and close colleagues’ support upon job satisfaction, and intent to leave

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This study examined the importance of nurses’ social work environment in the light of prevention of premature leave of the nursing profession. A mediation model with social support as predictor, and with job satisfaction as a mediator, and intent to leave as the dependent has been tested. Data were obtained from 22,866 registered nurses working in hospitals, nursing homes, and home care institutions throughout Europe.

Our outcomes indicate that a lack of social support might indeed be interpreted to be an important risk factor in the light of nurses’ turnover. The outcomes of testing the mediation model indicate that both social support from immediate supervisors and social support from close colleagues are positively associated with higher job satisfaction, and consequently, with lower nurses’ intent to leave. The pattern of relationships that has been found is highly similar for all participating countries.

Keywords: Social support immediate supervisor, social support close colleagues, job satisfaction, intent to leave, nursing sector, age, Europe

Almost all countries in the European Union have a lack of active nurses. Demographic changes within the coming 20 to 30 years might even worsen this situation if no action is taken. Three aspects play a part in this: Firstly, the proportion of younger people in the

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1 This article forms part of the European NEXT study (Nurses Early Exit) that is financed by the European Commission within the Fifth Framework, Project ID: QLK-6-CT-2001-00475 (see Hasselhorn, Tackenberg & Müller, 2003).
working-age population will decrease. Secondly, the proportion of older people in the working-age population will increase. Thirdly, the number of people over 64 years will increase. In many (but not all) European countries nursing staff predominantly belongs to the younger age groups. Since it is the oldest members of the population who require the most care, the pressure on the health care service will significantly increase (see Hasselhorn, Tackenberg & Müller, 2003 for more detailed information). It is not known yet how the increasing future demands for nurses can be met (see also Kirpal, 2004; Widerszal-Bazyl et al., 2003).

In many countries such as Germany and Italy, already today there are only a few nurses who are active in their profession until normal retirement age. The most effective way of assuring nursing in the future therefore seems to be to promote the retention of existing nursing staff. Employee turnover is a concern to Human Resource Development (HRD) professionals as their main goal is to develop and maintain human expertise. It is important to understand by means of empirical studies what organizational practices influence employee turnover in order to provide a foundation for theory development and further research on the topic from an HRD perspective (see also Peterson, 2004).

Assessment of managerial practices and colleagues’ attitudes and their implications in terms of turnover rates appears to be of theoretical and empirical relevance. The first aim of the study is to understand the relationship between age and the prevalence of social support. The second aim is to examine differences in work characteristics, i.e. social support from immediate supervisors and close colleagues, on the one hand, and intent to leave the profession among nurses working in different European countries, on the other hand.

The NEXT study aims to contribute on knowledge building in an important domain of career research, i.e. premature leave of the profession among nursing staff and is executed in ten European countries. It provides both convergent findings as a result of the EU wide adoption of similar management measures and strategies concerning prevention of premature leave, and divergent ones because of the preservation of the specific characteristics of national systems and cultural influences on HRM in the different European countries.

Theoretical framework

The Importance of Work Environment Factors

Throughout decades theoretical models and theories to explain voluntary employee turnover have profiled (Bannister & Griffith, 1986; Blau & Boal, 1989; Dalessio, Silverman & Schuck, 1986; Dougherty, Bluedorn & Keon, 1985; Gaertner, 1999; Hom, Griffith & Sellaro, 1984; Lee et al., 1999; Mobley, Horner & Hollingsworth, 1978; Mowday, Porter & Steers, 1982). Although there is widespread and rigorous empirical support for theoretical models that focused on satisfaction, commitment and intention, so-called individual characteristics, as the key antecedents to employee turnover, some researchers did suggest that institutional characteristics and relationships might play an
important role as well (Allen & Meyer, 1990; Chao et al., 1994; Lambert, Hogan & Barton, 2001; Schneider, 1987; Sheridan, 1992).

Lambert, Hogan and Barton (2001) found work environment factors (such as role conflict, task variety, relations with colleagues, and autonomy) to be important in shaping job satisfaction. Research based upon two widely used and still promising models, i.e. the so-called Job Demand-Control (D-C) Model (Karasek, 1979), and an extension of this, the Demand-Control-Support (D-C-S) model (Johnson & Hall, 1988), revealed that social support, among others, is an important predictor of health complaints, stress reactions, and job satisfaction. In line with De Jonge (1995), Janssen et al. (1999), and Houkes et al. (2001) who advocate the examination of more specific predictions regarding work characteristics and work reactions, this contribution focuses upon the impact of social support from different parties (immediate supervisor and close colleagues) upon the intent to leave, while taking into account specific interaction variables.

**The Power of Social Support as a Buffer for Premature Leave from the Nursing Profession**

Rhoades et al. (2001) have concluded that perceptions of supportive HR practices, such as organizational rewards (e.g. recognition, opportunity for advancement), procedural justice (e.g. communication, decision making), and supervisory support (e.g. concern for employees' well-being) lead to perceived organizational support (e.g. organizational concern), which lead to affective organizational commitment (e.g. sense of belonging or integration, attachment). Integration of employees is supposed to be achieved through both formal and informal means. Formal experiences are deliberately planned interactive events (e.g. formal communication lines, policies, meetings). Informal experiences would tend to be more spontaneous opportunities to interact. As the opportunities for interactions, and information and feedback exchange overlap, and often involve the same people (e.g. supervisors and peers), formal and informal dimensions are connected and interrelated (see also Peterson, 2004).

Employees with jobs that score higher on feedback from others have more internal motivation and better performance (Hochwarter et al., 1999; Renn & Vandenberg, 1995). Individual differences among employees (personality, age, etceteras, may affect the relationship between social support, on the one hand, and the so-called psychological states of experienced meaningfulness of the work, experienced responsibility, and knowledge of the results regarding quality and quantity, on the other hand (see also Hackman & Oldham’s so-called Job Characteristics Model, 1980; Spector, Jex & Chen, 1995). The Job Characteristics Model (JCM) has provided a framework from which to view the effects that job characteristics have on employee outcomes such as job satisfaction, commitment, and intention to leave an organization (Hochwarter et al., 1999).

Our study builds upon a framework of research wherein social support is interpreted as a predictor variable that, via its impact upon individual perceptions regarding satisfaction at work, influences individual outcome variables, in this case, intent to leave. We assume that nurses will show lower intent to leave, if they experience high levels of support from their direct supervisor, and from close colleagues.
Interpersonal relationships appear to be important predictors of job satisfaction (see also Repeti & Cosmas, 1991; Stordeur et al., 2001; 2003), and as a consequence related to absenteeism, expression of grievances, and turnover (Lucas, Atwood & Hagaman, 1993; Tett & Meyer, 1993). Moreover, a positive working climate wherein supervisor and co-worker support is prevalent enhances the amount of professional growth of individual workers (Van der Heijden, 2002; 2003). Correspondingly, recent research on Leader-Member Exchange (LMX) indicates the importance of the relationship between supervisor and subordinate in the light of organisational outcomes, such as job satisfaction, organisational commitment, and well-being (see Mullarkey et al., 1999).

Research outcomes pertaining to the healthcare sector have indicated the positive impact of counselling and interactions between staff members, and between nurses and physicians (Debray et al., 1988; Estryn-Behar et al., 1990; Mac Grath, 1983;). Head nurses can develop an atmosphere in which staff members are encouraged to identify stress factors within the work environment and wherein it is possible to learn from mistakes. (S)he can use reporting times aimed at discussing psychological issues of their patients (Fawzy et al., 1983; Kornfeld, 1969).

Providing specific workshops, refreshing courses and establishment of consensus on protocols and techniques in use in the department appears to alleviate anxiety (Bilodeau, 1993). An example of the positive effects of certain protocols concerns the discussion of criteria for treatment versus non-treatment (see Bishop, 1983). Other authors refer to so-called ‘preceptor ships’ aimed at helping new graduates to closely collaborate with a role model and a resource person within the clinical setting. The ‘preceptor ships’ help new staff members to adjust to their job and might also be fruitful in case experienced nurses move into a different specialty (Dell & Griffith, 1977; Chickerella & Lutz, 1981; Jacobson & MacGrath, 1983; Murphy & Hammerstad, 1981).

Lepannen & Olkinuora (1987) have reviewed epidemiological studies on stress problems among Scandinavian healthcare staff. Next to insufficiency in training, role conflicts and role ambiguity were found to be important predictors of stress problems. Similarly, Estryn-Behar (1997) in her review on cognitive (e.g. interruptions in tasks, need of frequent reorganization of daily work program, and overwork) and affective strain (e.g. adequacy between training and actual tasks, time to talk to patients and preparation to answer to their questions, as well as satisfaction with job climate, and interest of the job) in health care, stressed that nurses’ ability to cope with stress depends upon the extent of their support network and upon their possibility to discuss and improve patient’s quality of life (see also Boulard, 1993; Estryn-Behar et al., 1990; Landau, 1992; Rodary & Gauvain-Pigaud, 1993; Saint-Arnaud et al., 1992).

**Social Support from Immediate Supervisor**

In previous research (Boerlijst, 1994; Boerlijst, Van der Heijden & Van Assen, 1993; Van der Heijden, 1998) it has been found that most supervisors fall short in devoting attention to the functions and functioning of their workers. This is apparent on a number of fronts, including the area of the stimulation of training and development and the promotion of the learning value of the function, i.e. the value that the function has as nutrient for the employee’s further development. Particular in the case of seniors, supervisors appear to be uncooperative and unhelpful with regard to their professional
performance and further development. In other words, the degree of social support from one’s immediate supervisor is declining when the employee gets older.

As work-based support correlates negatively with job insecurity, job dissatisfaction, and noncompliant job behaviours (see Lim, 1996) it is likely that the accessibility of social support from one’s immediate supervisor affects the employee’s intent to leave. When employees perceive their supervisors as supportive, they believe that the supervisor shows concern for their feelings and needs, encourages them to voice own concerns, provides positive, chiefly informational feedback, and facilitates employee skill development (Deci, Connell & Ryan, 1989; Greenhaus, Parasuraman & Wormley, 1990). Supervisory support may include career guidance, performance feedback, challenging work assignments, and work opportunities that promote employee development.

**Social Support from Close colleagues**

In each working organization, one’s peers must bear the responsibility of providing reliable information on current technical developments, for example by drawing one’s attention to useful new journals or training courses (Gaines, 1988). Peers must be willing to act as sounding boards for new ideas based on their own experiences. Where colleagues are prepared to provide feedback on each other’s work, such as regular reviews of progress, they convey a feeling of being interested in and of valuing the work and the output that is achieved.

In the case of middle-aged employees, determination of possibilities for advancement in one’s professional field seems to be a central theme (Schein, 1978). Because of the fact that vertical progress is not within everyone’s reach, owing to the increasing flattening of organizations, this gives rise to a great deal of competition between close colleagues. The individual’s social network, so to say, is subject to change in the course of life (see also Sarason et al., 1987). Accordingly we expect a decrease in social support from close colleagues when employees enter the mid-career phase. The difference between middle-aged employees and seniors is envisaged as being minimal.

And in line with what has been stated above for the supervisory support, as work-based support correlates negatively with job insecurity, job dissatisfaction, and noncompliant job behaviours (see Lim, 1996) it is likely that social support from one’s close colleagues is negatively related to the employee’s intent to leave.

**Job Satisfaction in the Nursing Sector**

For decades, organizational researchers have been intrigued by employee satisfaction with work. Some studies have examined antecedents of job satisfaction, specific dimensions of job satisfaction, and the relationship between job satisfaction and outcomes such as job performance or turnover (Fields, 2002). Job satisfaction is conceptually defined as an employee’s affective reactions to a job (environment) based on comparing actual outcomes with desired outcomes (Cranny, Smith & Stone, 1992; Locke, 1983). It is generally recognized as a multifaceted construct that includes
employee feelings about a variety of both intrinsic and extrinsic job elements (Howard & Frink, 1996).

Porter and Steers (1973) argued that the extent of employee job satisfaction reflected the cumulative level of met worker expectations. That is, employees expect their job to provide a mix of features (e.g., pay, promotion, autonomy) for which the employee has certain preferential values. The range and importance of these values vary across individuals, but when the accumulation of unmet expectations becomes sufficiently large, there is less job satisfaction, and greater probability of withdrawal behaviour, and even possibly turnover (Pearson, 1991).

Numerous authors tried to identify factors that influence job satisfaction. Hinshaw and Atwood (1984), in their excellent nursing literature review, underline the importance of environmental factors including: the clinical service and type of work, nursing care delivery model, degree of professionalism, organizational climate, supervision and interpersonal relationships. Moreover, they found certain job characteristics to be important: status, autonomy, repetition of duties, the nature of tasks to be performed, job outcomes and pay. Irvine and Evans (1995) also stress the importance of work characteristics (routinization, autonomy and feedback), characteristics of how the work role is defined (role conflict and role ambiguity), and characteristics of the work environment (leadership, stress, advancement opportunities and participation) for nurses’ job satisfaction. In the Davidson et al. study (1997), effective communication patterns contributed favourably to perceptions about quality of care, time available to accomplish work demands, and overall enjoyment of the job. Likewise, social climate, pay and meaningfulness of work were important predictors in other studies (Ingersoll et al., 2002).

Studies investigating the relationship between nursing care delivery models (primary, team and functional practices), and nurses’ satisfaction underscore the lack of a link between the two (Kangas et al., 1999; Thomas, 1992). The process of implementing a nursing care delivery model seems to be more important than the model itself. If nurses perceive themselves to be valued employees who are critically important to the institution and to their patients’ well being, then structural changes in the work environment are handled with equanimity. Conversely, if the opposite is true, and nurses feel devalued, differences in nursing care delivery models would have no effect on job satisfaction (Kangas et al., 1999).

Numerous studies have demonstrated that nurses’ satisfaction is positively linked to patients’ satisfaction (Cavanagh, 1992; Leiter, Harvie & Frizzell, 1998; Weisman & Nathanson, 1985). Nurses give higher quality of care when they are satisfied with their work environment and feel implied in the organization (McNeese-Smith, 1995).

In the light of predicting nurses’ intent to leave, job satisfaction is interpreted to be a mediator variable, while social support from immediate supervisor and social support from close colleagues will be dealt with as predictors. Due to multi-collinearity between the variables social support from immediate supervisor, and social support from close colleagues in all countries, sometimes up to $r=.47$, the influential power of the two support factors will be tested separately. Following the theoretical framework that has been outlined above we will end this section of our contribution with research hypotheses.
Hypothesis 1: There is a negative relationship between nurses’ age and social support from immediate supervisor.

Hypothesis 2: There is a curvilinear relationship between nurses’ age and social support from close colleagues. Among middle-aged nurses we expect a decrease in social support. The difference between middle-aged employees and seniors is envisaged as being minimal.

Hypothesis 3: Social support from one’s immediate supervisor is negatively related with intent to leave, and is mediated by the amount of job satisfaction in the sense that a positive relationship between social support and job satisfaction does exist.

Hypothesis 4: Social support from one’s close colleagues is negatively related with intent to leave, and is mediated by the amount of job satisfaction in the sense that a positive relationship between social support and job satisfaction does exist.

Methodology

Sample and Procedure
The cross-cultural NEXT study is performed in the same way in all participating countries (with some exceptions for Sweden), and includes hospitals, nursing homes and home care institutions. The initial questionnaire assessment was carried out in ten countries between October 2002 and June 2003. The varying dates were due to the fact that the research teams from Poland and Slovakia have not joined the NEXT study until 2003. The participation of these countries is being financed by a European Commission fund aimed at the ‘newly associated states’.

The questionnaires were sent out to a total of 77,681 nurses (covering all qualification levels) working in hospitals, nursing homes, and home care institutions, as well as in outpatient care. 39,894 participants have returned the questionnaire. The response rate is 51.4% for the total investigation and varies between the participating countries from 30.0% to 76.9%. Table 1 gives the country-specific information for our sample. For sake of homogeneity of this study’s sample, only registered nurses working in hospitals, that is, 22,866 participants have been included in the data analysis that is reported in this contribution (see Kümmerling et al., 2003) for more detailed information on the sample and on the psychometric properties of the instruments for the different participating countries. For all countries the appropriateness of the instruments for all variables in our model has been investigated and Cronbach’s alphas appear to be sufficient or high for all scales.
Table 1. Sample Sizes, Mean Age, and Gender Distribution by Country for Registered Nurses (RN) Working in Hospitals

<table>
<thead>
<tr>
<th>Country</th>
<th>Questionnaires sent out</th>
<th>Total response</th>
<th>Total response rate (%)</th>
<th>RN in hospitals that are included in the data analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Non</td>
</tr>
<tr>
<td>Belgium</td>
<td>7049</td>
<td>4257</td>
<td>30.4</td>
<td>1959</td>
</tr>
<tr>
<td>Germany</td>
<td>6484</td>
<td>3565</td>
<td>55.0</td>
<td>2524</td>
</tr>
<tr>
<td>Finland</td>
<td>5161</td>
<td>3970</td>
<td>76.9</td>
<td>1825</td>
</tr>
<tr>
<td>France</td>
<td>13,017</td>
<td>5376</td>
<td>41.3</td>
<td>2474</td>
</tr>
<tr>
<td>Great Britain</td>
<td>7962</td>
<td>2578</td>
<td>34.2</td>
<td>1845</td>
</tr>
<tr>
<td>Italy</td>
<td>7447</td>
<td>5641</td>
<td>75.8</td>
<td>4710</td>
</tr>
<tr>
<td>Netherlands</td>
<td>9309</td>
<td>4024</td>
<td>43.2</td>
<td>2162</td>
</tr>
<tr>
<td>Poland</td>
<td>7091</td>
<td>4354</td>
<td>61.4</td>
<td>3207</td>
</tr>
<tr>
<td>Slovakia</td>
<td>6382</td>
<td>3396</td>
<td>53.2</td>
<td>2160</td>
</tr>
<tr>
<td>Total</td>
<td>69,902</td>
<td>37,161</td>
<td>53.2</td>
<td>22866</td>
</tr>
</tbody>
</table>

In data analysis, due to the large sample size the limit for significance has been set at $p < .01$.

**Measures**

*Social support from immediate supervisor instrument*

For the measurement of the variable 'social support from immediate supervisor' four items have been used (derived from Van der Heijden, 1998, 2003): "Is your immediate supervisor able to evaluate the value of your work and your results?", "Does your immediate supervisor regularly express an opinion on your work?", "Is your immediate supervisor in general ready to help you with the performance of your tasks?" and "Does your immediate supervisor regularly give you supportive advice?"

For the first item a six-point rating scale has been used, ranging from: (1) not at all, to (6) very much. For the second and fourth item a six-point rating scale has been used, ranging from: (1) never, to (6) very often. For the third item a six-point rating scale has been used, ranging from: (1) In my opinion, (s) he shows little willingness to help me, to (6) In my opinion, (s) he is very willing to help me. For the calculation of the scale mean, one missing item per participant was allowed.

*Social support from close colleagues instrument*

Exactly the same four items measured the variable ‘social support from close colleagues’, with obviously ‘close colleagues’ instead of ‘immediate supervisor’ in the item formulation (derived from Van der Heijden, 1998, 2003). For the calculation of the scale mean, one missing item per participant was allowed.

*Job satisfaction*
The job satisfaction scale originates from the COPSOQ (Kristensen, 2000) and was measured by four items: “How pleased are you with .....?” respectively, “your work prospects”, “the physical working conditions”, “the way your abilities are used”, “your job as a whole”, “everything taken into consideration”. A four-point scale with the following response categories measured the responses: (1) very unsatisfied, (2) unsatisfied, (3) satisfied, and (4) very satisfied. For the calculation of the scale mean, one missing item per participant was allowed.

**Intent to leave**

The variable ‘intent to leave’ was measured by means of one item: “How often are you thinking of leaving the nursing profession?” For this item a five-point rating scale has been used, with the following range: “never”, “sometimes/year”, “sometimes/month”, “sometimes/week”, to “every day”.

**Results**

**Descriptive statistics**

As can be seen in Table 2, social support factors have indeed a significant positive relationship with job satisfaction and are negatively related to intent to leave, that is to say, the more positive the social environment is perceived, the less do nurses think of leaving. Moreover, Table 2 also shows that job satisfaction is negatively related to intent to leave.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>Sd</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Social support from immediate</td>
<td>3.11</td>
<td>1.00</td>
<td>.83</td>
<td>.368***</td>
<td>.326***</td>
<td>-.147***</td>
</tr>
<tr>
<td>supervisor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Social support from close</td>
<td>3.53</td>
<td>0.76</td>
<td>.74</td>
<td>.201***</td>
<td>-.092***</td>
<td></td>
</tr>
<tr>
<td>colleagues</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Job satisfaction</td>
<td>2.58</td>
<td>0.55</td>
<td></td>
<td>.78</td>
<td>-.3.47***</td>
<td></td>
</tr>
<tr>
<td>4 Intent to leave</td>
<td>1.77</td>
<td>1.02</td>
<td></td>
<td></td>
<td></td>
<td>---</td>
</tr>
</tbody>
</table>

**Occurrence of social support**

From Figures 1 and 2, we may conclude that in all countries support of close colleagues displays higher mean values compared with the scores for the amount of perceived support from immediate superiors.
As can be seen from Figure 1 the perception of social support from superiors is rather low. In no single country does the mean value exceed the scale mean of 3.5. An analysis of variance (ANOVA), followed by post-hoc Scheffé tests, reveals that
significant differences over countries have been found $F(8, 22.778) = 66.43$, $p<.0001$ ($\eta^2 = .023$). Comparatively, the lowest values are found in Italy and the Netherlands, and the highest ones in Great Britain. Significant differences ($p<.01$) have not been found when comparing Belgium, Germany and Great Britain, neither between Germany and Finland, nor between Finland and the Netherlands, Finland and France, Poland and Slovakia, France and the Netherlands, and France and Poland. Italy does not differ significantly from the Netherlands, and the Netherlands does not differ significantly from Poland.

As stated before, the mean values for social support from close colleagues are in general higher than those of support from superiors but still not very impressive in height (see Figure 2). The Italian participants report the relatively lowest amount of support from colleagues. The highest amounts are reported in the Netherlands and Great Britain. Analysis of variance (ANOVA) again shows that country has a significant effect upon the amount of social support from close colleagues, $F(8, 22734) = 75.76$, $p<.001$ ($\eta^2 = .026$). Post-hoc Scheffé tests reveal significant differences between Belgium and Great Britain, as well as between Belgium and Italy and The Netherlands. Furthermore, Germany differs significantly from all countries, with the exception of Belgium and Slovakia. Finland and France differ from Italy, the Netherlands and Slovakia, while Great Britain differs from Italy, Poland and Slovakia. Italy shows differences to all other countries, as do the Netherlands, with the exception of Great Britain. Poland differs significantly from Slovakia, though all these reported differences are not very large in magnitude.

**Age and social support**

As stated in hypotheses 1 and 2, we expected a negative relationship between nurses’ age and social support from supervisors, and a curvilinear relationship between age and social support from close colleagues. In order to investigate age effects we grouped the age variable in five categories and related this new categorical variable to the social support factors, country-wise. Mean values per age group and per country are shown in Figure 3.
As employee’s age is an important predictor for supervisory behaviour as regards their attention for career development and HR practices (see Boerlijst, Van der Heijden & Van Assen, 1993; Van der Heijden, 2001), it is assumed that older employees (over 45 years) are experiencing lesser support from their superiors compared to the younger ones. Figure 3 shows that this hypothesis cannot be supported with our data – in some countries the contrary is even the case. The latter implies that older nurses, more specifically in Belgium and Italy, are reporting more support than younger ones.

To test our assumption statistically we performed uni-variate analysis of variance with age group as predictor and with perceived social support from immediate supervisors as the dependent variable, for each country separately. As there is no theoretical reason for the assumption that country itself could have an influence upon perceived social support, we decided against a two-dimensional variance model.

Only in Belgium ($F(7, 1.932) = 5.458, p<.001$), Finland ($F(7, 1.796) = 2.880, p<.01$), and The Netherlands ($F(7, 2.922) = 3.920, p<.001$) could we prove a significant effect for age upon social support from superiors. In order to determine which age groups differ significantly from each other, the analysis of variance was followed by post-hoc Scheffé-tests. In Belgium we found that all age groups, with the exception of the group aged between 35 and 40, differ significantly from the oldest age group (55+). Surprisingly, the analysis for Finland revealed no significant group differences, that is to say, we were only able to indicate an overall effect of age. Moreover, in the Netherlands only the youngest age group (16+) shows differences to the ones who are between 40 and 45, no other differences reached significance level.

Figure 3. Nurses’ age and perceived social support from superiors by country
Figure 4 depicts the relationship between age and social support from close colleagues for all participating countries.

Table 8. Beta Weights for the Regression Analyses for Social Support from Close colleagues and Intent to Leave, Controlled for Age and Gender, and Divided by Occupational Level

<table>
<thead>
<tr>
<th>Path</th>
<th>Sister in charge and other highly qualified HCWs</th>
<th>Specialised nurses</th>
<th>State registered nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV-DV</td>
<td>-.095</td>
<td>-.089</td>
<td>-.109</td>
</tr>
<tr>
<td>C</td>
<td>-.012 ns</td>
<td>-.005 ns</td>
<td>-.039</td>
</tr>
</tbody>
</table>

(All results significant at the .001 level, unless otherwise indicated, * p<.01; ns, not significant)

As can be seen from Figure 4, in line with hypothesis 2, all in all, social support from close colleagues follows a U-shaped, or curvilinear, pattern. The amount of perceived social support from one’s colleagues tends to decline for the ones being 25 years or older (with some exceptions in France and Finland), and starting to increase again for the ones being 45+. This implies that the line of reasoning regarding rivalry and competition between colleagues during the mid-career phase, as indicated in our theoretical framework in this contribution, is supported. With the exception of Great Britain and Poland, the analysis of variance reveals a significant age effect for all countries (see Table 3 for all significant age effects).

Table 3. Significant age effects for the Amount of Perceived Social Support from Close colleagues per Country

<table>
<thead>
<tr>
<th>Country</th>
<th>F</th>
<th>df</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>9.50</td>
<td>7, 1.921</td>
<td>0.001</td>
</tr>
<tr>
<td>Germany</td>
<td>7.54</td>
<td>7, 2469</td>
<td>0.001</td>
</tr>
<tr>
<td>Finland</td>
<td>5.50</td>
<td>7, 1.786</td>
<td>0.001</td>
</tr>
<tr>
<td>France</td>
<td>9.33</td>
<td>7, 2.432</td>
<td>0.001</td>
</tr>
<tr>
<td>Italy</td>
<td>7.21</td>
<td>7, 4.527</td>
<td>0.001</td>
</tr>
<tr>
<td>Netherlands</td>
<td>20.46</td>
<td>7, 2.419</td>
<td>0.001</td>
</tr>
<tr>
<td>Slovakia</td>
<td>4.64</td>
<td>7, 1.980</td>
<td>0.001</td>
</tr>
</tbody>
</table>
**Social support and intent to leave**

Testing our mediation model involves several assumptions and tests (Baron & Kenny, 1986). Firstly, we ought to prove that there is an association between the independent variable (IV) and the dependent variable (DV). That is, in our research model, social support from immediate supervisors or support from close colleagues and intent to leave, respectively (see path c in Figure 5). Secondly, the independent variable is to influence the supposed mediator, here, job satisfaction. And thirdly, the mediator has to have an impact upon the dependent variable, here, intent to leave (see path b in Figure 5).

![Diagram of General mediation model](image)

**Figure 5.** General mediation model

A variable is then said to function as a mediator in case (1) variations in levels of the independent variable significantly account for variations in the presumed mediator, (2) variations in the mediator significantly account for variations in the dependent variable, and (3) when path a and path b are controlled. A previously significant relationship between the independent and the dependent variable is no longer significant, with the strongest demonstration of mediation occurring when path c is zero (Baron & Kenny, 1986, p. 1176). In order to verify a hypothesized mediator effect, three regression analyses are to be performed. The first one is aimed to detect the assumed association between the independent variable and the mediator (see row a in Table 4). The second one is aimed to show the impact of the independent variable upon the dependent one (see row b in Table 4). The third regression analysis is necessary in order to regress the dependent variable upon the independent variable and the mediator in order to show assumed changes in the independent variable when the mediator variable is controlled (see row c in Table 4). Table 4 depicts the beta weights, controlled for age and gender, for the three regression analyses for social support from immediate supervisors and intent to leave. All results are significant at the .001 level unless indicated otherwise (ns implies not significant, * for p<.01).
Table 4. Beta Weights for the Regression Analyses for Social Support from Immediate Supervisors and Intent to Leave, Controlled for Age and Gender

<table>
<thead>
<tr>
<th>Path</th>
<th>BE</th>
<th>DE</th>
<th>FI</th>
<th>FR</th>
<th>GB</th>
<th>IT</th>
<th>NL</th>
<th>PO</th>
<th>SLK</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV-DV</td>
<td>-.162</td>
<td>-.173</td>
<td>-.198</td>
<td>-.176</td>
<td>-.234</td>
<td>-.132</td>
<td>-.162</td>
<td>-.155</td>
<td>-.127</td>
</tr>
<tr>
<td>a</td>
<td>.303</td>
<td>.281</td>
<td>.345</td>
<td>.374</td>
<td>.444</td>
<td>.330</td>
<td>.298</td>
<td>.293</td>
<td>.290</td>
</tr>
<tr>
<td>b</td>
<td>-.384</td>
<td>-.460</td>
<td>-.421</td>
<td>-.372</td>
<td>-.437</td>
<td>-.352</td>
<td>-.385</td>
<td>-.331</td>
<td>-.317</td>
</tr>
<tr>
<td>c</td>
<td>-.050</td>
<td>-.046</td>
<td>-.062*</td>
<td>-.045</td>
<td>-.051</td>
<td>-.019</td>
<td>-.047</td>
<td>-.057*</td>
<td>-.038</td>
</tr>
<tr>
<td></td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td></td>
</tr>
</tbody>
</table>

(All results significant at the .001 level, unless otherwise indicated, *p<.01; ns, not significant)

The data in the first row of Table 4 indicates that the first condition of a mediator model is met, that is, with our data we are able to prove that a positive relationship between our independent variable social support from immediate supervisors and the mediator job satisfaction does exist. The more social support from superiors that is perceived, the more satisfied the nurse is. Moreover, the relationship is comparably high and strong for all countries. The second row in Table 4 contains the results for the estimation of the regression analysis aimed at understanding path b (mediator – dependent variable) and as one can deduce from the data, the second condition is met as well. Each beta coefficient is highly significant, and the direction of the coefficient indicates a negative association between job satisfaction and intent to leave. The more satisfaction a nurse has in his or her job, the lesser his or her intent to leave (a somewhat trivial investigation as the outcomes are fully expected).

Of higher interest is the association (c) between social support from superiors and intent to leave when controlling for job satisfaction (see the third row in Table 4). The results clearly show that job satisfaction serves as a mediator in all countries. The impact of social support from superiors upon intent to leave appears to be rigorously lower for all countries, and becomes, with an exception for Finland and Poland, even non-significant. These outcomes unequivocally indicate a mediator role for job satisfaction and support hypothesis 3.

Table 5 provides the outcomes in case our analyses are performed for social support from close colleagues.
Table 5. Beta Weights for the Regression Analyses for Social Support from Close colleagues and Intent to Leave, Controlled for Age and Gender

<table>
<thead>
<tr>
<th>Path</th>
<th>BE</th>
<th>DE</th>
<th>FI</th>
<th>FR</th>
<th>GB</th>
<th>IT</th>
<th>NL</th>
<th>PO</th>
<th>SLK</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV-DV</td>
<td>-.125</td>
<td>-.155</td>
<td>-.115</td>
<td>-.065*</td>
<td>-.145</td>
<td>-.091</td>
<td>-.091</td>
<td>-.091</td>
<td>-.023</td>
</tr>
<tr>
<td>A</td>
<td>.170</td>
<td>.185</td>
<td>.195</td>
<td>.130</td>
<td>.273</td>
<td>.205</td>
<td>.159</td>
<td>.145</td>
<td>.135</td>
</tr>
<tr>
<td>B</td>
<td>-.384</td>
<td>-.460</td>
<td>-.421</td>
<td>-.372</td>
<td>-.437</td>
<td>-.352</td>
<td>-.385</td>
<td>-.331</td>
<td>-.317</td>
</tr>
<tr>
<td>C</td>
<td>-.064*</td>
<td>-.069</td>
<td>-.037</td>
<td>-.020</td>
<td>-.029</td>
<td>-.019</td>
<td>-.033</td>
<td>-.036</td>
<td>-.019</td>
</tr>
</tbody>
</table>

(All results significant at the .001 level, unless otherwise indicated, p<.01; ns, not significant)

The results of the analyses with social support from close colleagues highly resemble those with social support from superiors as the independent variable, besides the fact that the relationship between the independent variable and the dependent one is, in general, a little lower. That is, the regression analyses reveal that the association between social support from close colleagues and intent to leave becomes non-existent after adding job satisfaction into the regression equation. Only for Belgium and Germany, the relation as indicated by path c, is still significant after controlling for job satisfaction. In all other countries the association comes close to zero (see Table 5 for all specific country outcomes). All in all, hypothesis 4 is highly supported.

In order to determine whether occupational position of nurses: (1) sisters in charge and other highly-qualified health care workers (HCWs), (2) specialised nurses, and (3) state-registered nurses, influences the picture of results, we have investigated whether there are differences in perceived social support and job satisfaction between the three types of occupational position. Testing for significant differences in social support reveals that sisters in charge and other highly qualified HCWs perceive a significantly higher amount of social support compared with both the specialised nurses and the state-registered nurses. On the other hand, their amount of perceived social support from close colleagues is significantly lower compared with both the specialised and state-registered nurses. The amount of job satisfaction appears to be highest for specialised nurses relatively. Table 6 provides the group means and standard deviations for the three variables.
Table 6. Profile of the Perceptions of Nurses regarding Social Support and Job Satisfaction divided by Occupational Level

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean 1</th>
<th>Mean 2</th>
<th>Mean 3</th>
<th>Standard deviation 1</th>
<th>Standard deviation 2</th>
<th>Standard deviation 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social support from superior</td>
<td>3.28</td>
<td>3.13</td>
<td>3.12</td>
<td>.99</td>
<td>.94</td>
<td>1.00</td>
</tr>
<tr>
<td>Social support from close colleagues</td>
<td>3.48</td>
<td>3.56</td>
<td>3.53</td>
<td>.76</td>
<td>.70</td>
<td>.78</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>2.66</td>
<td>2.67</td>
<td>2.57</td>
<td>.54</td>
<td>.51</td>
<td>.54</td>
</tr>
</tbody>
</table>

All results significant at the .001 level.
1) Sisters in charge and other highly qualified health care workers (N = 6211)
2) Specialised nurses (N = 4870)
3) State-registered nurses (N = 22.995)

Table 7. Beta Weights for the Regression Analyses for Social Support from Superior and Intent to Leave, Controlled for Age and Gender, and Divided by Occupational Level

<table>
<thead>
<tr>
<th>Path</th>
<th>Sister in charge and other highly qualified HCWs</th>
<th>Specialised nurses</th>
<th>State-registered nurses</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV-DV</td>
<td>-.172</td>
<td>-.144</td>
<td>-.166</td>
</tr>
<tr>
<td>C</td>
<td>-.035*</td>
<td>-.013 ns</td>
<td>-.0.51*</td>
</tr>
</tbody>
</table>

(All results significant at the .001 level, unless otherwise indicated, p<.01; ns, not significant)

Table 7 indicates that the association between social support of superiors and intent to leave is lower for specialised nurses and state registered nurses compared with sisters in charge and other highly qualified HCWs. Moreover, the outcomes in row c clearly show that job satisfaction serves as a mediator in all occupational positions. The impact of social support from superiors upon intent to leave appears to be rigorously lower for all occupational levels, and even becomes non-significant for specialised nurses. These outcomes unequivocally indicate a mediator role for job satisfaction and highly support hypothesis 3.

Table 8 indicates that the association between social support of colleagues and intent to leave is lower for specialised nurses and sisters in charge and other highly qualified HCWs compared with the state-registered nurses.
Table 8. Beta Weights for the Regression Analyses for Social Support from Close colleagues and Intent to Leave, Controlled for Age and Gender, and Divided by Occupational Level

<table>
<thead>
<tr>
<th>Path</th>
<th>Sister in charge and other highly qualified HCWs</th>
<th>Specialised nurses</th>
<th>State registered nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV-DV</td>
<td>-.095</td>
<td>-.089</td>
<td>-.109</td>
</tr>
<tr>
<td>C</td>
<td>-.012 ns</td>
<td>-.005 ns</td>
<td>-.039</td>
</tr>
</tbody>
</table>

(All results significant at the .001 level, unless otherwise indicated, *p<.01; ns, not significant)

The results of the analyses highly resemble those for social support from superiors, besides the fact that the relationship between the independent and the dependent variable is, in general, a little lower. That is to say, the regression analyses reveal that the association between social support from close colleagues and intent to leave becomes non-existent after adding job satisfaction into the regression equation for sisters in charge and other highly qualified HCWs, and for specialised nurses. Yet, for state-registered nurses group, the relationship is still significant after controlling for job satisfaction.

Conclusions and Discussion

**Interpretation of the study results**

Our outcomes indicate that age is negatively related with social support from immediate superiors, and that impact of social support from close colleagues seems to be curvilinear. The curvilinear relationship might be partially explained by the age distribution in our sample. 16.7% of the sister in charge and other highly qualified HCWs comprises younger nurses (below 35 years), versus 27.4% of the specialised nurses, 37% of the state-registered nurses. As sisters in charge and other highly qualified HCWs (the smallest group) appear to receive significantly less social support from close colleagues compared with specialised nurses and state-registered nurses there might be a slight bias as the first occupational category of nurses is relatively small and consequently the lack of support slightly less. The means are respectively 3.48 (s.d. .76), 3.56 (s.d. .70), and 3.53 (s.d. .77).

Shortcomings in attention and concern, for example as expressed by social support on the part of management are expected to represent important co-determinants of the increasing premature leave of nurses. In earlier research (Boerlijst, Van der Heijden & Van Assen, 1993; Van der Heijden, 2001; 2002) it was found that management does not appear to be much interested in the development and growth of its employees’ abilities, or lacks the know-how to stimulate, or support the increase of these faculties, especially as regards their older employees. One explanation is that the lack of interest or know-how is a feature of short-termist, instrumental leadership arising from the relatively short duration of relations between employees and supervisors (Boerlijst, 1994).
As regards the relationship between age and lack of social support from close colleagues, our analyses support the assumption that rivalry between colleagues might be a possible cause for a decline in peer support during the mid career (see also Van der Heijden, 2003 for a more elaborate outline on this matter). Competition for career advancements might evoke a tendency to cut down exchanges of help, information, and interest, due to the fact that the employees are inclined to stress their own interests first.

In order to better understand the impact of social support and the means by which it influences nurses’ intent to leave, a mediation model with job satisfaction as a mediator has been tested. The outcomes of testing our mediation model indicate that both social support from immediate supervisors and social support from close colleagues are positively associated with higher job satisfaction, and consequently, with lower nurses’ intent to leave. The pattern of relationships that has been found is highly similar for all participating countries.

The fostering of social networks, representing the human, innovative side of organizations, plays a key role in these turbulent and exciting times where expansion of professional knowledge and skills is becoming more important (Levine & Ursin, 1991; Mueller, 1991). The quality of an organization as an effective information-processing vehicle depends in large part on its social infrastructure. In its turn this infrastructure depends above all on the people taking part, on their qualities as partners and co-workers involved in social interaction with others both inside and outside the organization, including their abilities to exchange social support (Boerlijst, 1994, p. 271).

Network resources are part of an individual’s social capital (see also Tung, 2002). Social capital refers to the actual and potential resources individuals obtain from knowing others, being part of a social network with them, or merely from being known to them, and having a good reputation (Nahapiet & Goshal, 1998). Social capital signifies resources (i.e. information, influence, solidarity) that an individual has at one’s disposal by means of the nature of one’s relationship ties with others, by and one’s position in a particular social structure (Adler & Kwon, 2002; Coleman, 1988).

As those working in nursing are exposed to emotional involvement, stress, work constraints and role uncertainty, the need for talking things through with colleagues and supervisors is strongly apparent. When it comes to situations of psychological stress, colleagues appear to be the most important source of support, particularly when institutionally that kind of support is lacking (Kirpal, 2004). Many nurses perceive the institutional support mechanisms as inadequate and not supportive in practice.

In organizations that cannot provide (career) support that is satisfying, the needs of nurses will produce widening gaps between the two. Managers that fail to discover such deficiencies in good time will experience growing levels of dissatisfaction that might result in premature leave. If the nature of the deficiencies is only slight, job satisfaction and morale are reduced. If it is more serious, turnover intentions will increase, impacting upon corporate growth and long-term performance (Chen, Chang & Yeh, 2004).
Limitations of the study
Because of the self-report nature of the data, and the correlational analyses that have been employed, any attempt at a causal explanation of the results must remain tentative. A longitudinal study might reduce these limitations, although this design has also limitations, such as the problem of selecting appropriate time-intervals (Kessler & Greenberg, 1981; Frese & Zapf, 1988). In future research reports regarding the study we will go in-depth on an examination of causal patterns (see Hasselhorn et al., 2003 for more details).

Moreover, as we have used self-reports measures, both for the predictor variables, i.e. social support from both parties, for the mediators, i.e. job satisfaction, and for the dependent variable, i.e. intent to leave, a common-method bias might exist. In order to increase the validity of the outcomes, nurses’ self-assessments and supervisor assessments might be combined in future research.

Another limitation of our study is that our results should be viewed in light of the data having been collected in the healthcare industry. This may cast some doubt on the suitability of generalization to other professional sectors. Nevertheless, as our results are in line with theory and the pattern of relationships as assumed, we think they are noteworthy and provide challenges for future research.

Recommendations for further research
Future research wherein the impact of internal and external labour market opportunities is taken into account might enhance our understanding of the impact of social environmental factors upon nurses’ intent to leave. That is to say, employment opportunities should be used as a control variable, as the perception of these is supposed to highly influence nurses’ turnover rate. Even in case one has high employability (or career potential) scores, the labour market is crucial in the sense that a suitable job should be available at all.

The effects of employment opportunities within the nursing profession are determined by both environmental factors (labour market) and by the nurse’s perception of his or her career potential. While some nurses feel excited at moderate levels of uncertainty, others may be overwhelmed by worries about not being able to cope with future demands. A perceived lack of employment opportunities has shown to be significant to health and well being (Caplan et al., 1975; Catalona, 1991).

While job insecurity has been studied in relationship to occupational health (Caplan et al., 1975), until now, employment opportunities and its relationship with intent to leave, and the importance of social support in the light of this, have not been investigated systematically (for the nursing sector).

Despite the clear recognition in recent turnover models (Bretz, Boudreau & Judge, 1994; Hom et al., 1992) that two basic market opportunity destinations are available – internal and external – little is known about how these alternatives affect turnover patterns (Mano-Negrin & Tzafrir, 2004). Concluding, there is a theoretical and empirical need to take a more comprehensive look at the impact of labour market circumstances upon intent to leave and turnover. Only in case we are able to understand in how far labour market circumstances allow nurses to freely decide on career choices, the effect of social support from superiors and colleagues as a buffer preventing
premature leave can be more clearly understood. Micro- and meso-level models, taking into account individual, job-related, and organizational characteristics ought to be integrated with so-called micro-sociological models describing labour market circumstances and opportunities (see also Hulin et al., 1985).

References


