

# The transition to hospital consultant: Denmark and the Netherlands compared on preparedness for practice, perceived intensity and contextual factors

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## Abstract

**Introduction:** Danish and Dutch new consultants' perceptions regarding the transition to consultant were compared to gain insight into this period, particularly the influence of contextual factors concerning the organisation of specialty training and health care therein. Preparation for medical and generic competencies, perceived intensity and burnout were compared. Additionally, effects of differences in working conditions and cultural dimensions were explored.

**Methods:** All consultants registered in the Netherlands in 2007–2009 ( $n = 2643$ ) and Denmark in 2007–2010 ( $n = 1336$ ) received in June 2010 and April 2011, respectively, a survey about their preparation for medical and generic competencies, perceived intensity and burnout. Power analysis resulted in required sample sizes of 542. Descriptive statistics and independent *t*-tests were used for analysis.

**Results:** Data were available of 792 new consultants in the Netherlands and 677 Danish new consultants. Compared to their Dutch counterparts, Danish consultants perceived specialty training and the transition less intensely, reported higher levels of preparation for generic competencies and scored lower on burnout.

**Conclusions:** The importance of contextual aspects in the transition is underscored and shows that Denmark appears to succeed better in aligning training with practice. Regulations regarding working hours and progressive independence of trainees appear to facilitate the transition.

## Introduction

On starting work after completion of training, recently qualified specialists find themselves confronted with, if not overwhelmed by, a host of new challenges, such as final responsibility for patient care and novel non-clinical tasks relating to financial, leadership and management responsibilities. Many doctors find themselves struggling during this transitional stage (Brown et al. 2009; Morrow et al. 2009; Westerman et al. 2010), dealing with their new situation in a dynamic interplay between preparation through training, psychological characteristics – including coping strategies – and contextual factors (Nicholson 1990; Westerman et al. 2010, 2011), such as social support from colleagues and the culture and organisation of the new work environment (Tallentire et al. 2011; Teunissen & Westerman 2011b). Results of research into effective alignment of training with the work of a hospital consultant (Teunissen & Westerman 2011a) can be translated into measures to alleviate the burden caused by this stressful period, such as curriculum change or organisational and contextual interventions.

## Practice points

- An international comparison aids the understanding of the influence of contextual factors in the transition to hospital consultant.
- Danish consultants reported higher levels of preparation for generic competencies and experienced the transition to consultant as less intense and stressful, with significantly fewer female Danish consultants meeting the criteria for burnout.
- Regulations regarding working hours and progressive independence of trainees in Denmark appear to facilitate the transition but warrant further investigation.

The transition from trainee to consultant has been studied in various countries (Naeem et al. 2005; Beckett et al. 2006; Kite & Salt 2006), but the research has been mostly descriptive (Cook et al. 2008) and not explicitly aimed at clarifying the processes involved. The transferability of most of these studies is likely limited as they were conducted in one medical

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specialty in one geographical region. Higgins et al., therefore, advocated investigating the needs of new consultants in empirical studies transcending geographical and professional contexts (Higgins et al. 2005) and looking into contextual factors, such as working conditions, the design of specialty training programmes, the organisation of health care and cultural characteristics. We therefore investigated the transition from specialty trainee to consultant in two countries by surveying newly qualified consultants in all specialties in order to gain a deeper understanding of this important phase in the medical education continuum.

We focused on the Netherlands and Denmark because they are Western European countries with similar socioeconomic conditions (OECD 2011). As the CanMEDS framework was recently incorporated into postgraduate training in both countries, we expected the relative similarity of training approaches (Scheele et al. 2008; Lillevang et al. 2009) to facilitate the identification of differences with a marked impact on the transition from trainee to consultant. To do justice to the multifaceted and dynamic interplay between individual, educational and contextual factors in this transition, we explored aspects of each of these three areas to find answers to the following research questions:

- (1) Are newly qualified consultants in Denmark and the Netherlands similar or dissimilar in the way their training has equipped them with the medical and generic competencies required for work as a hospital consultant?
- (2) Are newly qualified consultants in Denmark and the Netherlands similar or dissimilar in their perceptions of the intensity of the transitional period when starting work as a hospital consultant?

We conducted two nationwide surveys among new consultants in all clinical specialties in Denmark and the Netherlands to identify areas in which supportive measures might be taken to facilitate the transition.

## Setting the scene

### Educational setting

Undergraduate medical education lasts six years in both Denmark and the Netherlands. Immediately after graduation, Dutch junior doctors can apply for a place in a training programme in one of the specialties, varying in duration from three to six years. Programmes are run by the eight university medical centres and affiliated general teaching hospitals. On completion of training, specialists usually find a position as a hospital consultant in a university medical centre or general hospital. In Denmark, specialty training varies from five to six years, depending on the specialty. The actual training programme is preceded by a mandatory internship in internal medicine, surgery and general practice, recently shortened from 18 to 12 months. After the internship trainees must undertake an introduction-year post in a specialty of the trainee's preference offered by general teaching hospitals and it is acceptable for trainees to undertake several introduction years in different specialties before deciding in which specialty

they will undertake the second part of training, comprising a programme of rotations offered by hospital trusts through regional postgraduate training secretariats. After completion of training, Danish doctors have to work as a hospital specialist for at least one year before they are entitled to apply for a consultant position. Before 2004 specialist training included a one week mandatory seminar on health care organisation and management. After 2004 postgraduate training includes several mandatory seminars related to the generic competencies: nine days on health care organisation and management; four days on teaching and learning and three days on communication skills. Apart from communication skills training, none of the generic skills are included in the undergraduate curriculum.

### Contextual and cultural setting

We expected the transition to be affected by interactions between preparation through training, psychological factors, contextual variables and contextual and cultural characteristics of the two countries. Based on the literature on (coping with) transitions we focused on working time regulations, income, parental leave and child day-care facilities, additionally considering Hofstede's cultural dimensions (Hofstede 1980, 2001) as potential contributors to the differences between the two study populations.

*Working conditions.* Whereas in Denmark trainees are allowed to work a maximum of 37 hours a week, in the Netherlands the limit is set at 48 hours for both trainees and consultants. Arrangements for parental leave differ as well. In Denmark mothers are entitled to 18 weeks and fathers to two weeks paid leave, and parents can divide an additional 32 weeks between them, resulting in a total of 52 weeks. In the Netherlands mothers are entitled to 16 weeks of maternity leave and fathers to a maximum of three days, resulting in a total of 16.5 weeks. This may explain the difference between the countries in the percentage of children under the age of one year attending day care facilities in Denmark (17%) and the Netherlands (65%).

Hospital consultants' salaries too differ, with almost all Danish consultants being employed by a hospital and earning an average annual income of €100,000, whereas in the Netherlands new consultants earn around €150,000 with considerable differences depending on whether they are employed by a hospital or have joined a private partnership with earnings based on a fee-for-service system.

*Cultural dimensions.* The Dutch sociologist Hofstede has developed cultural dimensions that are widely used in international comparisons of organisational settings and values, including those in medical education. The dimensions are rated on a scale from 0 to 100 and research has established scores for many countries, including Denmark and the Netherlands. In this study, we considered three of the five dimensions (Jippes & Majoor 2011): the power distance index (PDI), individuality index (II) and uncertainty avoidance index (UAI). The PDI indicates to which extent members of organisations expect and accept a hierarchical power structure. In the Netherlands, the PDI is moderate at 38 and in

Denmark it is low at 18, indicating that Dutch culture is more hierarchical. A high score on the II indicates that individuals are expected to look after themselves rather than depend on the collective (a low score on the individuality index). II scores are quite similar in the Netherlands and Denmark: 80 and 74, respectively, indicating that both cultures have a predominantly individualistic orientation. The UAI is low in Denmark (23) and moderate in the Netherlands (53). It is indicative of tolerance for uncertainty and ambiguity, as reflected in the extent to which members of an organisation are uncomfortable with unstructured and novel situations. Countries with a high UAI generally have high levels of legislation and regulation allowing for cautious planning to avoid uncertainty.

## Method

### Participants and procedure

*The Netherlands.* Through the Dutch Medical Registration Committee we retrieved the addresses of all 2643 hospital consultants registered in the Netherlands who had completed specialty training in one of the 27 medical specialties in 2007, 2008 or 2009. In June 2010 we sent all new consultants a Dutch language questionnaire covering different aspects of the transition from trainee to consultant, followed by a reminder three weeks later. The questionnaire could be completed online or on paper (and returned in a prepaid envelope), and participation was voluntary and anonymous. Nearly all study participants in both countries had completed their specialty training before the recent implementation of CanMEDS-based competency-oriented postgraduate curricula.

*Denmark.* From the database of the National Board of Health in Denmark, we retrieved the names of all 1618 registered new hospital consultants who had completed specialty training in one of the 37 medical specialties in the period 2007–2010. Since general medicine is not a recognised specialty in the Netherlands, it was not included in the study. Addresses were retrieved for 1336 new Danish consultants, to whom we sent an English translation of the Dutch questionnaire in April 2011. The original Dutch questionnaire was translated into English by the main researcher with help from a native speaker. Translation back into Dutch by a professional translator resulted in a version that was similar to the original Dutch one.

### Questionnaire

We used a three-part Dutch-language questionnaire covering different aspects of the perceived transition from specialty training to work as a hospital consultant. The first part contained items on demographics such as age, gender, registered specialty and year of completion of specialty training. The second part, addressed consultants' perceived preparation by training (first research question) by asking them to rate on a five-point Likert scale (very poor–excellent) for each of the 19 competencies: (A) their perceived level of competence at the end of specialty training and (B) the level of competence required for their current position as a hospital consultant. Subtracting A from B yielded a score that was

interpreted as the 'competency gap', with high scores being assumed to be indicative of low levels of preparation. The 19 competencies ranged from medical competencies, that is clinical knowledge and skills and the ability to carry responsibility for patient care, to generic competencies, such as supervision of junior doctors during on call shifts, management skills, handling financial issues within health care and collaboration (Table 1). The list of competencies was based on the CanMEDS framework, which guided the design of the new specialty training programmes that were recently introduced in both Denmark and the Netherlands. The 19 competencies were based also on the literature on transitions in the medical education continuum (Prince et al. 2005; Schmidt et al. 2006; Jaarsma et al. 2008), the role of medical and generic competencies in the labour market (Meng 2005; Semeijn 2005) and previous research on the transition to hospital consultant (Westerman et al. 2010; Teunissen & Westerman 2011a).

The third part of the questionnaire was designed to collect data on the second research question and consisted of items with a five-point Likert scale measuring the perceived intensity of both specialty training and the transition to hospital consultant and also two items measuring the amount of social support received from colleagues and significant others. Finally, the Maslach Burnout Inventory (MBI) Human Services Survey (Maslach et al. 1996) was included in order to obtain a better perspective on the perceived intensity of the transition. The MBI consists of 20 items in three subscales: emotional exhaustion, depersonalisation and reduced sense of personal accomplishment. Burnout is defined as scores above the cut-off values for high emotional exhaustion and depersonalisation or as high scores on emotional exhaustion with low scores on personal accomplishment (Schaufeli & Dierendonck van 2000).

### Statistical analysis

During the data collection phase, we used preliminary data characteristics to perform power analyses with G\*Power 3 (Faul et al. 2007). This enabled us to check whether our sample sizes yielded enough power (>90%) to detect a difference between the study populations with an effect size of 0.2. With an alpha of 0.05 the required sample size for each of the two groups was 542.

After replacing missing values by means of two-way imputation (Sijsma & Van der Ark 2003), we used descriptive statistics and chi-square tests to compare the demographic characteristics of the Danish and Dutch participants and to screen for any differences between the countries or between specialty groups, that is medical, surgical or supportive specialties (radiology, pathology, etc.) and psychiatry. Furthermore, we compared whether the distribution of respondents over the four specialty groups was representative of the total study populations of the two countries in order to screen for possible response bias. We investigated for any significant between-country differences in preparation for practice by performing independent *t*-tests for the data on competencies and the perceived intensity of the transition. Regression analyses were performed to determine whether

**Table 1.** Competency gap scores as indicated by new hospital consultants in the Netherlands ( $p = 792$ ) and Denmark ( $p = 677$ ).

|  | Mean (SD) NL | Mean (SD) DK | Independent $t$ -test df = 1469 |
|--|--------------|--------------|---------------------------------|
| <i>Medical competencies</i>  |              |              |                                 |
| 1. Mastery of clinical knowledge   | 0.31 (0.66)  | 0.38 (0.87)  | $t = -1.86$ $\Phi$              |
| 2. Mastery of clinical skills  | 0.32 (0.70)  | 0.34 (0.88)  | $t = -0.62^*$                   |
| 3. Capability of carrying final responsibility for patient care  | 0.61 (0.85)  | 0.26 (0.90)  | $t = 7.61^{**}$                 |
| <i>Generic competencies</i>  |              |              |                                 |
| 4. Capability of practicing evidence based medicine  | 0.17 (0.77)  | 0.38 (0.92)  | $t = -4.60^{**}$                |
| 5. Skill at keeping knowledge and skills 'up to date' through, for instance, continuous professional development | 0.29 (0.77)  | 0.55 (0.99)  | $t = -5.51^{**}$                |
| 6. Skill at communicating with patients  | 0.33 (0.70)  | 0.42 (1.03)  | $t = -1.98^*$                   |
| 7. Skill at giving feedback  | 0.64 (0.85)  | 0.58 (0.99)  | $t = 1.24^*$                    |
| 8. Skill at receiving feedback   | 0.35 (0.84)  | 0.59 (0.94)  | $t = -5.03^{**}$                |
| 9. Skill at asking for feedback  | 0.42 (0.89)  | 0.65 (0.98)  | $t = -4.65^{**}$                |
| 10. Capability of working in a team with colleagues and other medical specialists                                | 0.20 (0.66)  | 0.21 (0.91)  | $t = -0.08^*$                   |
| 11. Capability of working in a team with nurses and others   | 0.16 (0.64)  | 0.10 (0.83)  | $t = 1.39^*$                    |
| 12. Skill at training specialist registrars and medical students   | 0.36 (0.91)  | 0.44 (0.95)  | $t = -1.79^*$                   |
| 13. Capability of supervising specialist registrars on the ward  | 0.77 (1.11)  | 0.42 (0.99)  | $t = 6.31^{**}$                 |
| 14. Capability of supervising specialist registrars from a distance during on call shifts                        | 1.16 (1.27)  | 0.51 (1.03)  | $t = 10.81^{**}$                |
| 15. Skill at leadership with regard to individuals and teams   | 1.13 (1.04)  | 0.67 (1.03)  | $t = 8.50^{**}$                 |
| 16. Skill at management  | 1.60 (1.10)  | 0.71 (1.05)  | $t = 15.88^{**}$                |
| 17. Skill at time management   | 1.13 (1.20)  | 0.68 (1.09)  | $t = 7.55^{**}$                 |
| 18. Capability of handling financial aspects of health care  | 1.89 (1.16)  | 1.02 (1.14)  | $t = 14.51^{**}$                |
| 19. Capability of working effectively within the organisational structure of the hospital and health care system | 1.08 (1.12)  | 0.62 (1.13)  | $t = 7.69^{**}$                 |

New consultants scored on a five-point scale for each competency (A) their perceived level of competence achieved at the end of specialty training and (B) the level of competence required for their current position as a hospital consultant. Subtracting A from B yielded the 'competency gap' score and high competency gap scores are considered indicative of low levels of preparedness for that competency. Significance levels were set at  $p < 0.05$ .

\* $p > 0.05$

\*\* $p < 0.001$

significant demographic differences between the countries contributed to differences in levels of preparation or perceived intensity. All significance levels were set at  $p < 0.05$ .

### Ethical considerations

*The Netherlands.* Ethical approval was granted by the Medical Ethical Review Committee of the Sint Lucas Andreas Hospital Amsterdam, the Netherlands. The cover letter informed the participants that returning the completed questionnaire signified informed consent for anonymous use of the data for scientific research and publication.

*Denmark.* Ethical approval was received from the Ethical Review Committee of the Capital Region, Denmark. We received permission from the Danish Data Protection Agency to retrieve the addresses of potential participants from the database of the National Board of Health. The cover letter informed the participants that all data would be used anonymously for scientific research into the transition to hospital consultant.

## Results

The Dutch and Danish consultants returned 840 (32%) and 691 (52%) completed questionnaires, respectively. We rejected data from 48 Dutch and 14 Danish consultants due to gross incompleteness, such as no data for an entire subscale, resulting in 792 Dutch and 677 Danish (total 1469) questionnaires for the analysis. There were no between-country

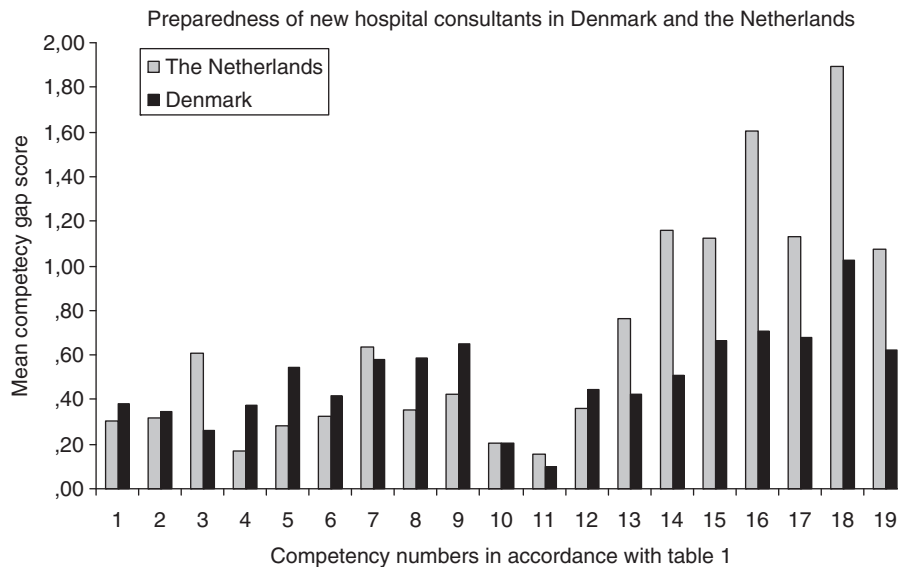
differences in male/female ratio and amount of time in the new consultant position. Dutch and Danish new consultants were 36 (SD 4.0) and 44 (SD 5.4) years of age, respectively, a difference of eight years. The distribution over specialty groups of the respondents (medical, surgical, etc.) was similar to the total population in the Netherlands, but in Denmark the surgical consultants were slightly underrepresented whereas the consultants in a supportive specialty were somewhat overrepresented. All demographics are presented in Table 2.

Participants from both countries showed similar small competency gaps, indicating high levels of preparation, for medical competencies, with mean scores on clinical knowledge and skills of 0.38 (SD 0.66) and 0.32 (SD 0.70) for the Dutch participants and 0.38 (SD 0.87) and 0.34 (SD 0.88) for the Danish participants ( $t(1469) = -1.86$ ,  $p = 0.06$ ) and ( $t(1469) = -0.62$ ,  $p = 0.53$ ), respectively. On several other competencies, however, the Danish participants reported better preparation than their Dutch colleagues. For Dutch new consultants we found significantly larger competency gaps for the generic competencies handling management issues (1.60 (SD 1.10) versus Danish participants 0.71 (SD 1.05) ( $t(1469) = 15.88$ ,  $p < 0.001$ )) and handling financial aspects in health care (1.89 (SD 1.16) versus Danish participants 1.02 (SD 1.14) ( $t(1469) = 14.51$ ,  $p < 0.001$ )). Table 1 and Figure 1 show the competency gaps for all competencies in the questionnaire.

Compared to their Dutch counterparts the Danish new consultants had lower scores on the perceived intensity of specialty training (mean 3.08, SD 0.97 versus Dutch consultants mean 3.82, SD 0.76;  $t(1469) = 16.12$ ,  $p < 0.001$ ) and the

**Table 2.** Demographic characteristics of the participating new hospital consultants in the Netherlands ( $n = 792$ ) and Denmark ( $n = 677$ ).

| Demographics                      | Respondents (NL) $n = 792$ (%) | Population (NL) $n = 2643$ (%) | Respondents (DK) $n = 677$ (%) | Population (DK) $n = 1336$ (%) | Pearson chi square                        |
|-----------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---|
| Gender                            |                                |                                |                                |                                |   |
| Men                               | 43                             |                                | 48                             |                                | $\chi^2 = 2.58, p = 0.11$                 |
| Women                             | 57                             |                                | 52                             |                                |   |
| Age distribution (years)          |                                |                                |                                |                                |   |
| < 35                              | 46                             |                                | 1                              |                                | $\chi^2 = 747.96, p < 0.001$              |
| 35–40                             | 45                             |                                | 24                             |                                |   |
| 40–45                             | 7                              |                                | 43                             |                                |   |
| > 45                              | 2                              |                                | 32                             |                                |   |
| No. of months as a new consultant |                                |                                |                                |                                |   |
| 0–6                               | 15                             |                                | 14                             |                                | $\chi^2 = 3.68, p = 0.30$                 |
| 6–12                              | 29                             |                                | 27                             |                                |   |
| 12–24                             | 32                             |                                | 31                             |                                |   |
| > 24                              | 24                             |                                | 28                             |                                |   |
| Specialty group                   |                                |                                |                                |                                |   |
| Medical specialties               | 42 <sup>1</sup>                | 41 <sup>2</sup>                | 35 <sup>3</sup>                | 32 <sup>4</sup>                | $(1 \times 2) = \chi^2 = 0.87, p = 0.83$  |
| Surgical specialties              | 24 <sup>1</sup>                | 24 <sup>2</sup>                | 25 <sup>3</sup>                | 31 <sup>4</sup>                | $(3 \times 4) = \chi^2 = 45.0, p < 0.001$ |
| Supportive specialties            | 20 <sup>1</sup>                | 21 <sup>2</sup>                | 30 <sup>3</sup>                | 25 <sup>4</sup>                |   |
| Psychiatry                        | 14 <sup>1</sup>                | 14 <sup>2</sup>                | 10 <sup>3</sup>                | 12 <sup>4</sup>                |   |



**Figure 1.** Presentation of competency gap scores as indicated by new hospital consultants in the Netherlands ( $n = 792$ ) and Denmark ( $n = 677$ ).

**Table 3.** Perceived intensity and support in the transition of new hospital consultants in the Netherlands ( $n = 792$ ) and Denmark ( $n = 677$ ).

| Descriptive of measurements                     | Mean (SD) (NL) | Mean (SD) (DK) | Independent $t$ -test $df = 1469$ |
|---|----------------|----------------|-----------------------------------|
| Perceived intensity of specialty training       | 3.82 (0.76)    | 3.08 (0.97)    | $t = 16.12, p < 0.001$            |
| Perceived intensity of starting as a consultant | 3.97 (0.85)    | 3.17 (1.19)    | $t = 14.52, p < 0.001$            |
| Perceived support during the transition         | 4.10 (0.65)    | 4.15 (0.79)    | $t = -1.46, p = 0.14$             |

transition to hospital consultant (mean 3.17, SD 1.19 versus 3.97, SD 0.85;  $t(1469) = 14.52, p < 0.001$ ) (Table 3). Table 4 shows no significant differences for the total amount of social support from colleagues and significant others, but a significantly higher percentage of burnout among Dutch female consultants compared to their Danish counterparts

(11.8% versus 6.5%;  $\chi^2(1, N = 1469) = 8.08, p = 0.004$ ), whereas no significant difference in this respect was found between the male consultants.

Secondary regression analysis showed that of the demographic characteristics only gender had an impact on four of the 12 generic competencies showing significant

**Table 4.** Percentages of new hospital consultants that meet the criteria of burnout in the Netherlands ( $n = 792$ ) and Denmark ( $n = 677$ ).

| Burnout | % (NL)      | % (DK)     | Pearson chi-square                     |
|---------|-------------|------------|--|
| Men     | 6.4 $n=22$  | 9.0 $n=29$ | $\chi^2(1, N=1469)=2.47,$<br>$p=0.12$  |
| Female  | 11.8 $n=53$ | 6.5 $n=23$ | $\chi^2(1, N=1469)=8.08,$<br>$p=0.004$ |
| Total   | 9.5 $n=75$  | 7.7 $n=52$ | $\chi^2(1, N=1469)=1.48,$<br>$p=0.22$  |

between-country differences in levels of preparation. Female consultants reported significantly larger competency gaps for competencies 4, 5, 13 and 14 (Table 1), relating to professional development and supervision, with standardised betas of 0.07,  $p=0.007$ ; 0.10,  $p < 0.001$ ; 0.1,  $p < 0.001$  and 0.09,  $p=0.001$ , respectively. The eight-year age difference between Danish and Dutch new consultants was not associated with levels of preparation, perceived intensity and burnout.

## Discussion

We conducted an international comparative study on the transition from postgraduate trainee to hospital consultant expecting that the results of comparisons between perceived levels of preparation for independent practice as a consultant, intensity of the transition and burnout would provide insight into the transition process that might be used to inform measures to ease the transition. The main differences were related to generic competencies, with Danish consultants reporting higher levels of preparation for leadership, management and handling financial aspects of health care while Danish consultants also appeared to experience both their training and the transition to consultant as less intense and stressful, with significantly fewer female Danish consultants meeting the criteria for burnout.

### Interpretation, explanation and comparison with the literature

The comparison of contextual characteristics, such as working conditions and organisation of health care and specialty training, provides valuable background information and possible explanations for the differences between the countries. We will elaborate on some of the main differences and relate them to the relevant literature. However, we do not postulate that this connection to literature results in overarching explanations, but rather in assumptions that should receive further attentions in future research. By doing so, it is illustrated that there is more to the transition to consultant than just preparation through the content of postgraduate medical training.

*Preparation for generic competencies.* Danish new consultants reported better preparation for several generic competencies, suggesting that in Denmark specialty training is better geared to meeting the requirements of a new consultant. This raises the question whether the reported higher level of

preparation is attributable to specialty training or to less heavy demands with respect to generic competencies due to organisational factors. The latter explanation might apply, for example, for 'handling financial aspects of patient care', where the difference may be explained by the fact that Danish consultants do not depend for their income on the financial status of their department or hospital. More specifically, unlike the earnings of Dutch consultants, the income of Danish consultants is not based on a fee for service system, and the 'urgency' of this competency is therefore likely to be lower in Denmark than in the Netherlands. Although the differences between some gaps in generic competencies may be partially related to organisational aspects, the results nevertheless suggest that Denmark has achieved a better overall alignment of specialty training with practice, and consequently provides doctors with better preparation for generic competencies. For example, Danish consultants showed smaller competency gaps for 'capability of supervising specialist registrars from a distance during on call shifts' and 'capability of carrying final responsibility for patient care', areas in which consultants are expected to be competent regardless of organisational conditions. The differences with regard to these two competencies may be explained by the fact that Danish senior registrars from an early stage of training regularly supervise interns and junior registrars, enabling them to master this competency and offering opportunities to experience what it means to be responsible for patient care while being unable to examine patients hands on. Such progressive independence during specialty training may enhance the development and identity building of Danish consultants (Kennedy et al. 2005; Dijksterhuis et al. 2009; Rudland et al. 2010), whereas the lower scores on these competencies reported by the Dutch consultants are probably associated with their relative inexperience in supervising junior trainees.

*Intensity of training and transition.* The Danish consultants scored lower on the intensity of specialty training and the transition to consultant compared to their Dutch colleagues. This may reflect first of all that Danish specialty training offers better preparation for hospital work, which would be consistent with statements by Brown et al. that better alignment could result in a smoother and less intense transition (Brown et al. 2009). Secondly, as described in the methods section, working conditions differ quite considerably between the two countries. In Denmark, working hours are limited to 37 hours a week compared to 48 hours in the Netherlands. There is compelling evidence that longer working hours are associated with higher stress levels, reduced job satisfaction and burnout in specialty trainees and hospital consultants (Fletcher et al. 2005; Balch et al. 2010). Impairment of the work-life balance due to longer working hours has been shown to cause stress and negative emotions (Keeton et al. 2007), and was identified previously as adding to stress related to the transition to consultant, as many new consultants have young families with attending responsibilities such as finding suitable day care facilities and schools (Westerman et al. 2010). The transition period consequently appears to be affected by the discrepancy between the two countries in working hours and parental leave. It seems likely that regulatory aspects like

working hours, maternity leave and day care facilities contribute to the differences between Danish and Dutch consultants in the experienced intensity of the transition alongside adjacent to the differences in levels of preparedness. The significantly lower degree of burnout among Danish female consultants lends further support to this interpretation. Since stress and burnout among physicians are known predictors for diminished quality of delivered patient care and increased adverse outcomes (Shanafelt et al. 2002; West et al. 2006), these findings deserve serious consideration.

*Differences in age and training programmes.* Although our analysis showed no significant effect of the eight-year age difference between the Danish and Dutch new consultants on preparation for practice or the intensity of the transition, there may have been an effect that was not captured by our results. Emotional maturity due to life experience and increasing age has been shown to influence the transition from pre-clinical to clinical training (Shacklady et al. 2009) and may have contributed also to Danish consultants perceiving the transition as a less intense period. Training programmes may also have impacted on between-country differences, since some of the Danish participants (cohorts 2009 and 2010) were enrolled in programmes designed in accordance with the CanMEDS framework, whereas almost all the Dutch participants finished their training before the introduction of CanMEDS-based programmes. However, the absence of significant differences in competency gaps and perceived intensity of the transition between the Danish cohorts of 2007–2008 and 2009–2010 suggests that it is unlikely that the smaller competency gaps in Denmark can be attributed solely to competency-based training.

*Cultural and societal differences.* Another explanation for Danish new consultants perceiving the transition as less intense may be related to the lower score on Hofstede's PDI, implying that in Denmark it is more usual for decisions to be made in a communal setting where individual decisions are commonly questioned by other team members (Hofstede 1980, 2001). Moreover, junior doctors in Denmark are expected to contribute to clinical decision-making from an early stage of training, giving them ample experience with shared decision-making, which may alleviate the burden of individual responsibility. Dutch consultants, on the other hand, who are generally not trained in a culture of shared decision-making characterised by 'all for one and one for all' may consequently experience a stronger sense of individual responsibility causing them to perceive the transition as more stressful due to the huge increase in new tasks and responsibilities (Westerman et al. 2010; Teunissen & Westerman 2011a).

### Strengths and limitations

To our knowledge, this is the first study to examine the transition from trainee to hospital consultant from an international comparative perspective. This strengthens the originality of these results and the derived insights. However, we acknowledge that the accompanying complexity of such an

international comparison is likely to mark the onset of an arduous research agenda, rather than result in an inclusive understanding of all factors present in the transition, due to clouding of the findings by possible confounders outside the scope of this research project.

Another strength is the large study population, comprising all new hospital consultants in the Netherlands and Denmark who completed their training in the same three to four-year period. However, the low response in the Netherlands (32%) may have introduced some form of non-response bias and the results should therefore be interpreted with some caution, although several arguments appear to challenge this point of view. Firstly, the risk of selection bias is reduced in population studies, and recent evidence on non-response rates and non-response bias suggests that the assumed association between these aspects may often be absent (Groves 2006). Secondly, the actual sample sizes of 792 and 677 are well over the required sample size (542) calculated in the power analysis. Finally, the fact that the distribution of respondents in the Netherlands over the specialty groups (Table 2) is almost identical to that of the Dutch study population further diminishes the possibility of selection bias due to non-response in the Netherlands. Therefore, it seems reasonable to assume that our sample sizes consisting of 32% and 52% of the total new consultants were acceptable for these study purposes. Another possible limitation is the use of a self-assessment survey, which may not be an optimal predictor of actual performance (Eva & Regehr 2008). We were more interested, however, in identifying differences between Danish and Dutch consultants in their perceived preparation through specialty training and the experienced intensity of transitioning to hospital consultant than in measuring objective competence levels. Although the large systematic differences that we found between the countries were based on self-report measures, they nevertheless provide valuable insights into the transition process. A final limitation could be the language of the questionnaire. Dutch participants were given a questionnaire in their native language, whereas the Danish participants were given an English-language questionnaire. Considering that the Danish population in general is quite familiar with the English language, it seems safe to assume that this did not pose a real problem to the well-educated Danish participants.

### Possible implications and future research

This study illustrates how investigating the transition to consultant can provide insight into the alignment of the content of specialty training and the work of a hospital consultant as a measure of the efficacy of training programmes. Also we have shown that a comparison of different settings or countries affords more in-depth understanding of this transition and the contextual factors involved. In both Denmark and the Netherlands, new consultants reported better preparation for medical than generic competencies. Clinical supervisors, curriculum architects and specialty trainees might strive to achieve better preparation for generic competencies by either more attention to these competencies during specialty training or by offering new consultants remedial courses or coaching to alleviate the transition stage.

Generic competencies are incorporated in the new CanMEDS-based specialty training programmes in the Netherlands and Denmark, but only the two most recent cohorts of Danish new consultants were trained in the new programmes. Programme directors and clinical supervisors, however, have been reported to struggle with the generic CanMEDS roles (Davis et al. 2005; Ten & Scheele 2007) and it seems therefore plausible that it will take time before any measurable effects of the new programme will be noticeable. Future research should investigate if over time new consultants will report higher levels of preparation for generic competencies as the new competency-based programmes with explicit attention for generic competencies become more firmly established.

The fact that Danish consultants reported better preparation for the generic competencies of a consultant warrants further investigation. We have suggested several possible explanations for this, which should be tested in future research, such as the relationship between working time and the perceived intensity of the transition. Working time restrictions for specialty trainees are a controversial issue within the medical domain, and it is often argued that a reduction in training hours will result in less well-prepared consultants (Steinbrook 2002; Mullins & Mascolo 2003; Charap 2004). A transatlantic comparison of surgeons' competencies, however, failed to substantiate this effect for both procedural skills and cognitive knowledge (Schijven et al. 2010). Our study confirms this finding by showing that despite their 37 hour week as trainees, the Danish consultants reported better preparation than their Dutch counterparts, who worked a 48 hour week. The impact of working hour restrictions on the quality of specialty training and consequently on the transition to consultant appears to be an important area for further research.

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