



## Gender, gender roles and completion of nursing education: A longitudinal study

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### SUMMARY

The current worldwide nursing shortage and high attrition of nursing students remain a challenge for the nursing profession. The aim of this paper was to investigate how key psychological attributes and constructions differentiate between completers and non-completers of nursing education. A questionnaire including measures of gender role identity and perceived gender appropriateness of careers was administered to 384 students early in the first year of the course. At the end of the programme attrition rates were obtained. The findings indicate that males were more likely to leave the course than females. Furthermore, those who completed the course tended to view nursing as more appropriate for women, in contrast to the non-completers who had less gender typed views. The female-dominated nature of nursing, prevalent stereotypes and gender bias inherent in nursing education seem to make this an uncomfortable place for males and those with less gendered typed views. Whilst it is acknowledged that attrition is undoubtedly a complex issue with many contributing factors, the nursing profession need to take steps to address this bias to ensure their profession is open equally to both female and male recruits.

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### Introduction

There is virtually no disagreement with the suggestion that there is a serious nurse shortage worldwide (Crow et al., 2005; Gould and Fontenla, 2006). The current shortage in the USA is expected to last into 2020, with one in three nurses under 30 years intending to leave their job within 1 year resulting in an aging workforce (Blais et al., 2006). It is not surprising then that results of a recent Delphi survey conducted in Ireland highlight the topic of recruitment and retention of nurses as being one of the highest ranked nursing research priorities, indeed not only in Ireland but worldwide (Drennan et al., 2007).

A more effective selection process, and strategies to enhance the retention of student nurses and new nurses are vital in order to address both the high attrition rate of nursing students and the current nursing shortage (McLaughlin et al., 2008). Whilst the turnover rate amongst new nurses is worrying, the specific focus of this paper is attrition in student nurses, which is unacceptably high and a major source of concern not least for those involved in nursing education (Jeffreys, 2007; Stott, 2007). There are many factors which play a role in attrition, however a key factor in the recruitment and retention crisis in nursing has, and continues to be the profession's systematic over-reliance on only one half of the population for new recruits. Despite efforts to

recruit nurses from both the male and female population, the proportion of men entering and working in the nursing profession in the UK remains low. Men comprise approximately 10.2% of registered nursing staff in the UK (Oxtoby, 2003), with an even smaller percentage in the USA, amounting to just 5% of the total workforce (Needleman et al., 2002). It has been reported that the recruitment and retention of men in nursing would go some way to reducing the present shortage (Brady and Sherrod, 2003).

Gender can interact with career choice and aspirations in a number of ways. First, gender can mark you out as different in any occupational context including nursing. The gender of a female nurse is unremarkable whereas a man who is a nurse is often referred to as not just a nurse but a 'male nurse' (Muldoon and Reilly, 2003). The growing body of research on men in the nursing profession underpins this contention. Kelly et al. (1996) in a focus group study found that men perceived an inherent bias within the nurse education system. These respondents reported feelings of isolation and loneliness which was exacerbated by underlying assumptions of nurses as female in both lectures and textbooks, and as evidenced by the ubiquitous use of the pronoun she, when referring to a nurse (Kelly et al., 1996; Inoue et al., 2006). Additionally male nurses have reported experiencing direct and open discrimination, as well as subtle criticism from their peers, co-workers or employing institutions (The Bernard Hodes Group, 2004). The behaviour and characteristics of nurse educators has also been highlighted as negative, with male students recounting that, its not what they say, but 'how' they say it (Bell-Scriber, 2008).

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Other commentators have added to our understanding of the role of gender in nurse education by attending to gender related constructs such as gender roles and gender role identity. These constructs place importance on subjective views of one's own gender and how that interacts with perceived appropriateness of jobs and behaviours for both men and women. Essentially, since the time of Florence Nightingale, nursing has been stereotyped as a female-dominated profession throughout the world (Thomas, 1998). Fletcher (2007) argues that stereotypes have far reaching implications and consequences for the nursing profession, not least as they distort the public's view of nursing, and of particular relevance to this paper may affect the quality and number of people that remain in the nursing profession. Loughrey (2008) asserts that men tend to avoid careers such as nursing due to their stereotypically association with women.

Available empirical evidence would appear to support this view. According to Yang et al. (2004) in terms of traditional gender stereotypes, males and females are often rigidly typed, and career choices and professional development are by no means exempt from such expectations. As Romen and Anson (2005) state, the public perception of a profession, particularly its status, plays an important role on an individual's decision to enter and remain in it. Muldoon and Reilly (2003) found that gendered constructions of nursing acted as a barrier to engaging with many careers within nursing, and Muldoon and Kremer (1995) found that less gendered identities in student nurses were associated with lower job satisfaction.

Such stereotyped constructions may be particularly difficult for those with incongruent constructions of nursing or indeed for those who see themselves and the world as increasingly androgynous. Considerable evidence exists to suggest that nurses are consistently portrayed in novels, television, and in advertisements as female, single, childless and under 35 years of age (Kalisch and Kalisch, 1982a,b; Hallam, 1998, 2000). Bridges (1990) identified four reoccurring images of nursing in the media, namely the ministering angel, the battleaxe, the physician handmaiden and the naughty nurse. The portrayals and stereotypes of men in nursing are equally unflattering. Indeed many male nurses report that their sexuality is often questioned (Kelly et al., 1996), and as Yang et al. (2004) report many male nurses are perceived by others as strange or effeminate. These stereotypes of nursing that persist can create serious problems for recruitment and job satisfaction of nurses regardless of their gender (Roth and Coleman, 2008).

#### *The current paper*

The present study represents an important addition to the current literature. Much of the previous research in this area has been cross-sectional, exploring the nature of the relationship between gender, gender identity, recruitment and retention. Our study benefits from a longitudinal analysis and thus allows us to explore the predictive power of some of these constructs in a cohort of nursing students. We examine the differences between those who complete and those who do not complete their nurse education in terms of gender role identity and perceived gender appropriateness of nursing careers for men and women. Building on the person-environment fit theory we explore the perceived compatibility between the individuals characteristics or needs and their occupational environment (Dawis and Lofquist, 1984; Walsh and Holland, 1992). The theory postulates that behaviour and motivation are influenced by the fit between the characteristics individuals bring to their environment, and the characteristics of the environments themselves. When individuals perceive a fit, they tend to display favourable behaviours such as enhanced performance, increased satisfaction and lowered intention to leave their occupation (Dawis and Lofquist, 1984; Walsh and Holland,

1992). Conversely, when they perceive a misfit and view their characteristics or needs as incompatible with their occupational environment, then feelings of dissatisfaction and frustration can ensue. Person-environment fit theory predicts that a match will be beneficial to the individual through reduced conflict and stress, whereas mismatches result in a decline in motivation, interest and performance. The ultimate solution to avoiding the burden of mismatch is to leave the organisation or occupation and search for a more compatible environment (Dawis and Lofquist, 1984). Hence our data informs how key psychological attributes and constructions related to gender differentiate between successful completers and non-completers of undergraduate nurse education programmes.

## **Method**

### *Design*

This was a longitudinal study which examined how gender, gender role identity and views of nursing careers assessed at the beginning of a nursing course related to course completion. Participants completed a questionnaire in the first 4 weeks of study and were then followed up at the end of the course to monitor attrition.

### *Participants*

A convenience sample of 384 nursing students from a UK university, 350 female and 34 male, completed the initial questionnaire. All participants were in the first 4 weeks of study on a university-based Common Foundation Programme for a preregistration Higher Education Diploma in Nursing Studies (equivalent to the first 2 years of a bachelor's degree). Their mean age was 20.7 years (sd = 3.95).

### *Measures*

All participants were asked to indicate their gender. The questionnaire also included the following measures:

#### *Gender role identification*

The Bem Sex Role Inventory (BSRI Bem, 1974) is a 60 item measure designed to measure psychological characteristics which are consistent with traditional sex role attributes (Bem, 1974). The instrument has 20 items traditionally associated with masculinity, 20 items associated with femininity, and 20 which provide an index to which individuals are providing socially desirable answers. It was scored using the *t*-ratio method: high scores representing psychological femininity (scores more than +1) and low scores indicate psychological masculinity (scores less than -1). Psychological androgyny is represented by mid scores (scores between -1 and +1). According to Pallant (2001) ideally the Cronbach  $\alpha$  of a scale should be above 0.7. On this occasion the Cronbach  $\alpha$  was 0.83. Thus, the scale's reliability was satisfactory.

#### *Gendered views of nursing careers*

The appropriateness of 19 nursing careers for men and women were assessed using a seven point likert scale. Participants were asked to rate each career domain on a scale of 1–7 with a score of 1 indicating a career is viewed as appropriate for men, and a score of 7 indicating the career is appropriate for women. Careers viewed by respondents to be equally appropriate for men and women were rated as 4. Cronbach  $\alpha$  was 0.81.

The final section of the questionnaire elicited biographical information including their permanent home address so that stu-

dents could be followed up subsequent to their exit from the programme.

#### Data collection

To avoid coercion of the students, the details of the research were explained to them at the beginning of a lecture by an independent researcher. They were then given the opportunity at the end of the lecture to leave if they did not wish to participate. The majority remained to complete the questionnaire, which was administered by the same researcher. Students were assured that their participation was entirely voluntary. Instructions for completion and the purpose of the research were also presented on the first page of the questionnaire. Students were then followed up at the end of the programme, and attrition data were obtained from university records. All participants who had completed the questionnaire were accessed using their student number which they had provided on the initial questionnaire, to determine whether or not they had completed the programme. Attrition rates were comprised of those who failed to complete the programme. The reasons for dropout were also recorded. Data for the remaining 34 students were not accessible due to respondents' failure to supply a correct student identity number making follow-up impossible.

#### Ethical considerations

We obtained permission to conduct the research from the Head of School and the head of the preregistration division in the school of nursing. Students were assured that participation was voluntary and that all information would be treated with the strictest confidence. They were also informed that the biographical information they provided would be used to follow them up at a later date.

#### Results

A total of 350 students were successfully followed-up, 318 female and 32 male, representing 91% of the original study. Three hundred and seven participants completed the programme and 43 dropped out. This attrition rate of 12%, which in comparison to attrition rates elsewhere in the UK and worldwide, is relatively low. Of the 43 that withdrew, 34 were female and nine were male. Table 1 provides a picture of age and entry qualifications of participants.

#### Course completion, gender and gender role orientation

Chi-squares analyses were performed to assess associations between course completion and gender, and course completion and gender role orientation. There was a significant relationship be-

tween gender and course completion ( $\chi^2 = 8.200$ ,  $df = 1$ ,  $p = 0.009$ ); males (28.1% of all males) were more likely to withdraw from their course than females (10.7% of all females). Contrary to expectations there was no significant relationship between gender role orientation and course completion, ( $\chi^2 = 2.43$ ,  $df = 2$ ,  $p = 0.229$ ).

#### Course completion, gender and gendered views of nurse careers

The majority of careers were considered by participants to be more appropriate for women, and previous research indicates that the data from this scale is not normally distributed (Muldoon and Reilly, 2003). Thus, the 25th and 75th percentiles of the data relating to this measure were used as cut off points to characterise careers as gender neutral, feminine or highly feminine. Seven of the 19 careers were in the lower quartile, and the mean scores indicated that they were viewed as occupations most suitable for both males and females and were labelled gender neutral (GN). These career options included mental health, accident and emergency, learning disability, theatre, surgical and medical nursing, as well as nurse teaching and management. Six of the 19 careers had scores in the upper quartile and the mean scores suggested that most respondents believed these to be careers best suited to women. These were labelled as highly feminine (HF) career options; midwifery, school nursing, district nursing, health visiting, paediatric nursing, and practice nursing. The remainder of the careers were labelled as feminine (F) career options given mean scores indicated they were viewed as more appropriate careers for women than men.

In a two between and three within subjects multivariate analysis of variance (see Table 2), we examined the differences between males and females and those who completed and those who did not complete the programme in relation to how students rated the appropriateness of GN, F, and HF careers. A main effect for course completion was observed in that there was a significant difference between those who completed and those who did not complete the programme on the combined dependent variables, [ $F(3, 344) = 3.305$ ,  $p = 0.020$ ]. Univariate follow-up tests indicated that the only difference between completers and non-completers was related to the perceived gender neutrality of the careers [ $F(1, 346) = 7.033$ ,  $p = 0.008$ ]. The mean score indicated that those who completed (mean = 28.02,  $sd = 2.95$ ) believed that nursing was more appropriate for women than those who did not complete (mean = 26.53,  $sd = 2.88$ ).

A main effect for gender was also observed in that there was a significant difference between males and females on the combined dependent variables. Univariate follow-up tests revealed the only difference between males and females was again in relation to the gender neutral careers, [ $F(1, 346) = 16.224$ ,  $p = 0.000$ ]. Overall this indicates that both men and women believe that the feminine and highly feminine careers are more appropriate for women. The only difference was in relation to the gender neutral careers, these are considered appropriate for men and women. The mean score indicated that males (mean = 25.69,  $sd = 3.20$ ) believed that the gender neutral careers were more appropriate for both males and females than did females (mean = 28.06,  $sd = 2.87$ ). No interaction effect between gender and course completion was observed. These MANOVA results are presented in Table 2.

#### Predictors of course completion

A logistic regression was used to predict students' course completion, with BSRI scores, gendered views of nursing careers and gender as predictor variables. A total of 385 cases were analysed and the full model was significantly reliable ( $\chi^2 = 13.8456$ ,  $df = 2$ ,

**Table 1**  
Age and entry qualifications of students.

|                             | Completed             | Not completed | Total     |
|-----------------------------|-----------------------|---------------|-----------|
| <b>Age</b>                  |                       |               |           |
| 18–22 years                 | 260 (88%)             | 36 (12%)      | 296 (84%) |
| 23–27 years                 | 25 (78%)              | 7 (22%)       | 32 (9%)   |
| 28–32 years                 | 13 (100%)             | 0 (0%)        | 13 (4%)   |
| 33 years and over           | 9 (100%)              | 0 (0%)        | 9 (3%)    |
| Total                       | 307 (88%)             | 43 (12%)      | 350       |
| <b>Entry qualifications</b> |                       |               |           |
| O level                     | 10 (77%)              | 3 (23%)       | 13 (4%)   |
| GNVQ                        | 63 (88%)              | 9 (12%)       | 72 (21%)  |
| A level                     | 208 (87%)             | 30 (13%)      | 238 (68%) |
| Degree                      | 21 (95%)              | 1 (5%)        | 22 (6%)   |
| Total                       | 302 (5 missing) (88%) | 43 (12%)      | 345 (99%) |

**Table 2**

Results of MANOVAS examining the effects of gender, and gendered views of nursing careers on completion.

| Source of variation         | Pillais           | Univar   |     |          |       |
|-----------------------------|-------------------|----------|-----|----------|-------|
|                             | Multivar <i>F</i> | <i>F</i> | df  | <i>p</i> | Power |
| <b>Programme completion</b> |                   |          |     |          |       |
| Perceived gender            |                   |          |     |          |       |
| Appropriateness             | 3.305             | –        | 344 | 0.020*   | 0.752 |
| Gender neutral              | –                 | 7.033    | 346 | 0.008**  | 0.753 |
| Female typed                | –                 | 1.709    | 346 | 0.192    | 0.256 |
| Highly typed                | –                 | 0.354    | 346 | 0.552    | 0.091 |
| <b>Gender</b>               |                   |          |     |          |       |
| Perceived gender            |                   |          |     |          |       |
| Appropriateness             | 7.487             | –        | 344 | 0.000*** | 0.986 |
| Gender neutral              | –                 | 16.224   | 346 | 0.000*** | 0.980 |
| Female typed                | –                 | 0.000    | 346 | 0.999    | 0.050 |
| Highly typed                | –                 | 0.897    | 346 | 0.344    | 0.077 |

\*  $p < 0.05$ .\*\*  $p < 0.01$ .\*\*\*  $p < 0.000$ .

$p < 0.001$ ). This model accounted for between 3.9% and 7.5% of the variance. The significant predictor was the gendered view of nursing careers. Those who believed the gender neutral careers were more appropriate for both males and females were most likely to withdraw ( $\beta = -.166$ ,  $p < 0.01$ ).

## Discussion

The results of the study show that males were more likely to leave the course than females. A review of the available literature would indicate that the high male attrition rate is not that surprising. The widely held stereotypes of male nurses (Roth and Coleman, 2008), the difficulties they may encounter particularly with providing intimate care to female patients (Patterson and Morin, 2002), the discrimination and isolation that is sometimes reported (O'Lynn, 2004), and the lack of successful male role models (Brady and Sherrod, 2003), all serve to illustrate the difficulty in attracting and retaining men in nursing.

These findings go beyond past research suggesting that it is not only men who have difficulty with the nursing environment. Our research indicated that course completion was also predicted by the extent to which respondents gendered nursing as an occupation. Specifically those most likely to withdraw were the individuals who initially viewed nursing as an appropriate occupation for both males and females – i.e. the ones with the least gendered typed views of nursing. Students who do not agree that nursing should be viewed as 'women's work' or that the profession should be segregated according to gender (irrespective of their own gender), were those that left the profession in greater proportions.

Interestingly when we examine the history of men in nursing, as Cude and Winfrey (2007) point out, there are accounts of men as nurses dating as far back as the Byzantine period, in Biblical accounts and through the Middle ages. Nonetheless this is often overlooked in nursing textbooks and nursing education. Thus the unacknowledged contribution of men to the history of nursing reinforces the widespread belief that nursing began with Florence Nightingale, and the idea that the presence of men in the profession is a recent phenomenon. Moreover, the incessant labelling of men as 'male' nurses sets them apart from the remainder of the nursing population and infers that one group is essentially different from the other (Muldoon and Reilly, 2003; Brady and Sherrod, 2003). All of these factors, coupled with the inherent bias within the nurse education system (Kelly et al., 1996; Inoue et al., 2006), highlight the difficulties that men may encounter in their experiences of nursing education. Theoretically, in line with

person-environment theory, this decision to leave is as a result of the needs and/or expectations of the individual not being matched by their chosen career. Thus as Kermode (2006) suggests, ideological issues based on gender and the feminisation of the nursing curriculum may represent a source of resentment and be a cause of gender dissonance, in both male and female students. Simpson (2005) having interviewed men in female-dominated occupations argued that where negative stereotyping occurs then decisions to withdraw from the occupation are much more likely. Our results illustrate that this is the case for women also, those who find themselves at odds with their occupational environment will experience dissatisfaction and in an attempt to address this mismatch may decide to leave.

The results of this study also revealed that gender role identity was not a predictive factor on nursing students' course completion. Previously research revealed gender role identity to be of central importance to career preferences of nursing students (Muldoon and Reilly, 2003). Thus at least in light of the present findings, whilst gender role identity may influence work related decisions in that it may have a bearing on the area individuals choose to specialise in, it does not appear to predict who may leave the nursing profession. Consequently, it seems fair to suggest that nursing education can accommodate all types of students those that are psychologically masculine, feminine or androgynous.

It is now time for nurse educators to work harder at breaking down the gender stereotypes in nursing. For many years, the feminist movement has worked against the over use of terms such as mankind and masculine pronouns to refer to all of humanity. There is strong evidence that the assumptions communicated via the use of language, and examples in education generally referred to as 'the hidden curriculum' communicate a set of messages that we may in fact hope to disavow. It is important in our gendered world that we do not advantage men in nursing unduly and create vertical segregation. Equally, it is vital that students male and female irrespective of their own constructions of their gender can feel comfortable and succeed within the profession.

Clearly, this study is not without limitations, not least the limited range of factors that were examined in relation to successful course completion. There is no doubt that many other factors, not assessed in this study contribute to student success and failure. Nonetheless, currently the nursing profession is recruiting from only half of the population, with males providing an untapped pool of potentially committed and competent nurses. Given the growing worldwide nursing shortage, strategies need to be put in place to recruit and retain men to actively deal with their under representation in the nursing profession. General acceptance of nursing as a

career for both men and women requires a proactive and strategic effort from nurse educators, administrators, professional bodies and at a governmental level, to counteract the current prevailing gendered tide. This will have implications not only for men but as we have seen for women also who do not want to conform with the well entrenched societal stereotypes associated with nursing. Until the nursing profession is perceived as an occupation open to both male and female recruits, the nursing shortage will remain an issue and the profession weaker for that lack of diversity

## References

- Bell-Scriber, M.J., 2008. Warming the Nursing Education Climate for Traditional-Age Learners who are Male. *Nursing Education Perspectives* 29 (3), 143–150.
- Bem, S.L., 1974. The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology* 4, 155–162.
- Blais, K.K., Hayes, J.S., Kozier, B., Erb, G., 2006. *Professional Nursing Practice. Concepts and Perspectives*, fifth ed. Pearson Education Inc., Upper Saddle River, New Jersey.
- Brady, M.S., Sherrod, D.R., 2003. Retaining men in nursing programs designed for women. *Journal of Nursing Education* 42 (4), 159–162.
- Bridges, J., 1990. Literature review on the image of the nurse and nursing in the media. *Journal of Advanced Nursing* 15 (7), 850–854.
- Crow, S.M., Smith, S.A., Hartman, S.J., 2005. Attrition in nursing: perspectives from the national survey of college graduates. *Health Care Management* 24 (4), 336–346.
- Cude, G., Winfrey, K., 2007. The hidden barrier: gender bias: fact or fiction. *Nursing Women's Health* 11 (3), 254–265.
- Dawis, R.V., Lofquist, L.H., 1984. *A Psychological Theory of Work Adjustment*. University of Minnesota Press, Minneapolis, MN.
- Drennan, J., Meehan, T., Kemple, M., Johnson, M., Treacy, M.P., Butler, M., 2007. Nursing research priorities in Ireland. *Journal of Nursing Scholarship* 39 (4), 298–305.
- Fletcher, K., 2007. Image: changing how women nurses think about themselves. Literature review. *Journal of Advanced Nursing Review Paper*, 207–215.
- Gould, D., Fontenla, M., 2006. Commitment to nursing: results of a qualitative interview study. *Journal of Nursing Management* 14 (14), 213–221.
- Hallam, J., 1998. From angels to handmaidens: changing constructions of nursing's public image in post-war. *Britain Nursing Inquiry* 5, 32–42.
- Hallam, J., 2000. *Nursing the Image: Media, Culture and Professional Identity*. Routledge, New York.
- Inoue, M., Chapman, R., Wynaden, D., 2006. Male nurses' experiences of providing intimate care for women clients. *Journal of Advanced Nursing* 55 (5), 559–567.
- Jeffreys, M., 2007. Tracking students through program entry, progression, graduation, and licensure: assessing undergraduate nursing student retention and success. *Nurse Education Today* 27 (5), 406–419.
- Kalisch, P.A., Kalisch, B.J., 1982a. Image of the nurse in motion pictures. *American Journal of Nursing* 82, 605–611.
- Kalisch, P.A., Kalisch, B.J., 1982b. Image of nurses in novels. *American Journal of Nursing* 82, 1220–1224.
- Kelly, R., Shoemaker, M., Steele, T., 1996. The experience of being a male student nurse. *Journal of Nursing Education* 35 (4), 170–174.
- Kermode, S., 2006. Is nurse education sexist? An exploratory study. *Contemporary Nurse* 22 (1), 66–74.
- Loughrey, M., 2008. Just how male are male nurses? *Journal of Clinical Nursing* 17, 1327–1334.
- McLaughlin, K., Moutray, M., Muldoon, O.T., 2008. The role of personality and self-efficacy in the selection and retention of successful nursing students: a longitudinal study. *Journal of Advanced Nursing* 61 (2), 211–221.
- Muldoon, O.T., Kremer, J., 1995. Career aspirations, job satisfaction and gender identity in female student nurses. *Journal of Advanced Nursing* 21, 544–550.
- Muldoon, O.T., Reilly, J., 2003. Career choice in nursing students: gendered constructs as psychological barriers. *Journal of Advanced Nursing* 43 (1), 93–100.
- Needleman, J., Beurhaus, P., Mattke, S., Stewart, M., Zelevinsky, K., 2002. Nurse-staffing levels and quality of care in hospitals. *New England Journal of Medicine* 30, 346(22), 1715–1722.
- O'Lynn, C.E., 2004. Gender based barriers for male students in nursing education programs. *Journal of Nursing Education* 43 (5), 331–333.
- Oxtoby, K., 2003. Men in nursing. *Nursing Times* 99 (32), 20–23.
- Pallant, J., 2001. *SPSS Survival Manual. A Step by Step Guide to Data Analysis Using SPSS*. Open University Press, Buckingham.
- Patterson, B.J., Morin, K.H., 2002. Perceptions of the maternal-child clinical rotation: the male student nurse experience. *Journal of Nursing Education* 41 (6), 266–272.
- Romen, P., Anson, O., 2005. Israeli men in nursing: social and personal motives. *Journal of Nursing Management* 13, 173–178.
- Roth, J.E., Coleman, C.L., 2008. Perceived and real barriers for men entering nursing: implications for gender diversity. *Journal of Cultural Diversity* 15 (3), 148–152.
- Simpson, R., 2005. Men in non-traditional occupations: career entry, career orientation and experience of role strain. *Gender, Work and Organization* 12 (4), 363–380.
- Stott, A., 2007. Exploring factors affecting attrition of male students from an undergraduate nursing course: a qualitative study. *Nurse Education Today* 27, 325–332.
- The Bernard Hodes Group, 2004. Men in Nursing Survey. <<http://www.hodes.com/industries/healthcare/resources/research/meninnursingsurvey.asp>>.
- Thomas, S.P., 1998. *Transforming Nurses' Anger and Pain – Steps toward Healing*. Springer, New York.
- Walsh, W.B., Holland, J.L., 1992. A theory of personality types and work environments. In: Walsh, W.B., Craik, K.H., Price, R.H. (Eds.), *Person-environment Psychology: Models and Perspectives*. Lawrence Erlbaum Associates, Hillsdale, NJ, pp. 35–69.
- Yang, C.-I., Gau, M.-I., Shiau, S.-J., Hu, W.-H., Shih, F.-J., 2004. Professional career development for male nurses. *Journal of Advanced Nursing* 48 (6), 642–650.