PREDICTING SELF-ASSESSED HEALTH STATUS IN WOMEN: WHAT COUNTS FOR GERMAN MIDWIVES AND MEDICAL OFFICE ASSISTANTS?

PRÉDICATEURS POUR L'AUTO-ÉVALUATION DE L'ÉTAT DE SANTÉ DES FEMMES: CE QUI A DE L'IMPORTANCE POUR LES SAGES-FEMMES ET LES ASSISTANTES MÉDICALES DE BUREAU ALLEMANDES?

Birgit Reime, ScD, MPH
Sandra Tomaselli-Reime, RM

ABSTRACT
Previous studies on women's work and health have tended to summarize women's occupations in broad categories and ignore job-specific workload. We compared occupational characteristics, burnout, health behaviour, and predictors of subjective health status between German midwives and medical office assistants (MOAs). We conducted a cross-sectional survey using a standardized questionnaire with items addressing aspects of the occupational biography, job characteristics, unpaid work, social support, gender role orientation, and health status and behaviour. Burnout was measured using the Maslach Burnout Inventory (MBI, Maslach and Jackson 1986). Altogether 386 questionnaires for midwives and 552 questionnaires for MOAs were sent out (response rates 60.4% and 44.1% respectively). Chi-square- and Mann-Whitney-U-tests and multiple regression models were conducted. Significant group differences were found regarding, for example, satisfaction with salary and control. More midwives than MOAs would choose their profession again ($p<0.001$). The level of burnout was medium for MOAs. Midwives had medium levels of burnout on two subscales and low levels on one subscale of the MBI. Health behaviours such as smoking, alcohol consumption and exercise did not differ between the occupations. Midwives conducted breast self-examination and ate whole-wheat products more often, whereas MOAs utilized GP and cancer checkups more frequently and consumed more medication. Satisfaction with salary and overtime hours predicted burnout in both occupations. Burnout and smoking were the only overlapping predictors of the health status of midwives and MOAs. Further studies should consider differences between female-dominated occupations when designing appropriate studies on women's health. Increases in salary and reductions in overtime hours may be appropriate interventions for health promotion in these occupations.

KEY WORDS
midwives, medical office assistants, burnout, health behaviour, health status

THIS ARTICLE HAS BEEN PEER-REVIEWED

RÉSUMÉ
Des études antérieures portant sur le travail et la santé des femmes ont eu tendance à se servir de catégories plutôt larges pour résumer les professions exercées par les femmes et elles n'ont pas tenu compte des charges de travail spécifiques à l'emploi. Nous avons comparé les caractéristiques professionnelles, l'épuisement professionnel, les habitudes de vie et des indices subjectifs de l'état de santé entre des sages-femmes et des assistantes médicales de bureau (MOAs) allemandes. Nous avons mener une enquête d'échantillons de groupes, en nous servant d'un

questionnaire normalisé doté de questions qui abordaient les aspects de la biographie professionnelle, les caractéristiques de l'emploi, le travail non rémunéré, le soutient social, l'orientation du travail sur la base du sexe, l'état de santé et les habitudes de vie. Nous avons mesuré l'épuisement professionnel à partir du Maslach Burnout Inventory (MBI, Maslach and Jackson 1986). En tout, 386 questionnaires furent distribués aux sages-femmes et 552 questionnaires furent distribués aux assistantes médicales de bureau (le taux de réponse fut de 60.4% et 44.1% respectivement). Nous avons mené les tests Chi-square- et Mann-Whitney-U, ainsi que des modèles de régression multiples. Nous avons trouvé des différences significatives entre les groupes en ce qui a trait, par exemple, au degré de satisfaction relatif au salaire et au niveau du contrôle. Les sages-femmes plus que les assistantes médicales de bureau choisiraient à nouveau leur profession ($p<0.001$). Le taux d'épuisement professionnel était moyen pour les assistantes médicales de bureau. Le taux d'épuisement professionnel pour les sages-femmes était moyen sur deux des sous-échelles et sur une des sous-échelles du MBI le taux était bas. Il n'y avait pas de différence entre les groupes quant aux habitudes de vie telles que la cigarette, la consommation d'alcool ainsi que l'exercice. Les sages-femmes pratiquaient l'auto-examen des seins et mangeaient des produits de blé entier plus souvent, alors que les assistantes médicales de bureau voyaient des omnipraticiens et passaient des évaluations périodiques du cancer plus fréquemment et consommaient plus de médicaments. Le niveau de satisfaction quant au salaire et aux nombres d'heures supplémentaires était un prédicateur d'épuisement professionnel pour les deux professions. Les seuls prédicateurs de l'état de santé des sages-femmes et des assistantes médicales de bureau à se chevaucher furent l'épuisement professionnel et la consommation de cigarettes. Les études futures devraient tenir compte des différences entre les professions dominées par les femmes lorsqu'elles élaborent des études pertinentes sur la santé des femmes. Les augmentations de salaire ainsi que la réduction du nombre d'heures supplémentaires pourraient être des interventions appropriées pour promouvoir la santé dans ces professions.

MOTS CLÉS
sages-femmes, assistantes médicales de bureau, épuisement professionnel, habitudes de vie, état de santé

CET ARTICLE FUT RÉVISÉ PAR SES PAIRS

INTRODUCTION

Behavioural factors play the major etiologic role in traditional causal models on health and disease. Several shortcomings of these models have been identified. They are not grounded in a theoretical framework and they lack an elaborated methodology to test hypotheses.[1,2] Very few aspects of health behaviour are examined (mainly tobacco and alcohol use, diet and exercise).[3,4] The subjective motivation for health behaviour and the social context of health lifestyles are not considered in these models.[2,5] Individually-oriented research and prevention strategies blame the victim of illness and ignore causal links between health and characteristics of the society and the environment such as the distribution of income and pollution.[1,6]

Another important point of critique refers to the androcentrism of mainstream health research.[2,7-9] Predictors of disease generated from studies with only male participants are frequently generalized to women. However, predictors that were able to explain a large amount of variance in men's illness (for example, heart disease in the Framingham study), were less meaningful for women's health, leaving a large amount of variance unexplained.[10,11] Female researchers have pointed out that factors such as unpaid work might be meaningful for women's health, because the duties of caring for the family remain high, regardless of the employment status.[5] Therefore, concepts and measures that were applicable for understanding women's health when the majority were full-time housewives need to be reconsidered to account for the current labour market structure in which most women are employed but mostly in part-time low income jobs.[4]

Female-dominated occupations seem to be characterized by certain similarities such as low wages, reputation and control over tasks, fewer possibilities for occupational advancement, and less on-the-job-training.[12,13] Also, the duties in these jobs often involve close contact with personal or even intimate problems of the clients. In this work environment, professionals

are at risk for burnout.[14] According to Cherniss, burnout "is a process in which a previously committed professional disengages from his or her job in response to stress and strain experienced in the job".[15] Maslach and Jackson differentiate between the three burnout dimensions: Emotional Exhaustion (EE) (lack of energy), Depersonalisation (DP) (disinterested treatments of clients) and reduced Personal Accomplishment (PA) (lack of confidence to have positive impact on clients).[16]

In previous studies, the factors associated with the manifestation of burnout were related to the job environment such as ambiguity of tasks, lack of support from supervisor and colleagues, autonomy and decision latitude.[14] Additionally, demographic characteristics such as marital status, number of children and level of education were associated with burnout.[16]

Although burnout has been examined extensively in social service and medical professions, very few researchers addressed the relationship between burnout and health status. Those who did failed to report gender differences or restricted their study to men's diseases.[17-19] Thus, it is not known whether burnout may be linked to health status among female employees.

Because women's participation in the labour market seems to cluster in few occupational categories, it may appear as if the occupational hazards for women in related jobs were rather homogenous.[12,13] Therefore, in previous surveys on the predictors of women's health, female occupations have been stratified into broad categories only. For example, in the first British Health and Lifestyle Survey, nurses and teachers were added into one category, and sales personnel and office clerks into another category.[20]

Macran et al reanalysed these data separately for each occupational group and found that predictors for health differed immensely between nurses and teachers and between clerks and saleswomen.[21] The results found by Macran and her colleagues demonstrate how important it is to examine the particular stressors and demands of specific female-dominated professions separately in order to avoid wrong conclusions. Because only a few previous studies concentrated on differences in predictors of health status within the pink collar occupations, the need for appropriately designed studies to address this question is timely. Women are engaged in paid and unpaid work, their stressors may differ considerably according to their particular job description and their social context, and their health may be affected by the emotional and the physical demands of their jobs.[22]

In this study we examined:

- whether occupational characteristics and health behaviours differed between employees in two female-dominated health professions
- whether the predictors for burnout differed between the two occupational groups, and
- whether burnout plays a different role as a predictor of self-assessed health status in these two occupations

This work comprises a part of the first author's doctoral thesis in psychology. During the planning phase of the study, the first author was teaching at a midwifery school in Germany. She chose to study determinants of health behaviour in midwives because there were no previous studies on this profession in Germany. Burnout was included into the study because both the faculty and the students at the midwifery school asked the author to collect data on burnout among German midwives. Medical office assistants (MOAs) were chosen as control group to be able to test the hypothesis that, among the female-dominated professions (proportion of males <1%), different patterns of relations between health behaviour and predictors exist.

METHODS

Midwife participants

In Germany, in a population of 80 million people, the number of midwives is approximately 14,000. Exact data are unavailable because after graduation, registration with either the German College of Midwives or the German College of Independent Midwives is voluntary. The training is regulated by federal law and it takes place at 57 schools of midwifery that are attached to (university) hospitals. The training takes three years and aims for graduation as a midwife. The midwifery program is not academic. It is not associated with a degree from university. Students are paid during their training, due to their duties on different wards, instead of paying tuition fees

themselves.

The midwifery profession is in great demand. Depending on the reputation of the particular school, the number of applicants per place ranges from 30-150. In theory, students are eligible for the midwifery program if they successfully finished six grade high school, but due to the high applicant/place ratio, the vast majority of students today have a university-level graduation. Most midwives in Germany are employed in hospitals.

In a previous survey on workload among employed midwives in Germany (n=284), the imbalance between workload and salary, medicalized childbirth and unnecessary interventions by physicians, work schedules that interfere with a social life, psychosocial burden (for example, stillbirths) and lack of supervision were reported as most important stressors.[23] Forty-one percent of the sample reported cooperation with physicians was difficult.

In Germany, although midwives are permitted to provide prenatal care, gynecologists have the monopoly for this. Childbirth is usually attended by gynecologists. According to federal law, they must call a midwife for birth but not vice versa. Postnatal care is provided by midwives at home until eight weeks postpartum or throughout the duration of breast-feeding, if the woman requests this service.

Midwifery care is fully covered by health insurance, apart from births in birth centers where the woman has to pay an additional fee. The maintenance costs of these centers are not paid by the insurance. A full-time working midwife employed in a hospital earns about 40,000 Canadian dollars per year. Self-employed midwives are not employed at a hospital but provide antenatal, intrapartum and postnatal care independently. Contrary to the Canadian situation, they are paid by the women's health insurance companies, based on service fees that are negotiated between the German College of Midwives, the Ministry for Health and the health insurance companies. The fee for attending a 12-hour home birth is about $600 in West Germany and less in East Germany. The fee for each postpartum visit is $32 in West Germany and less in East Germany.

Medical office assistant (MOA) participants

The MOA is the most famous occupation among students graduating from six-form high school in Germany. The training takes three years and takes place in the physician's practice on three days and at a vocational school on two days per week. MOAs are the only paramedical occupation in Germany that is not trained in specialized schools or branch of school.

Officially, the physician is the trainer, not another qualified MOA. The content of the training refers to medical and managerial knowledge. MOAs are expected to provide medical care under the supervision of the physician, such as giving injections, carrying out ECGs and other procedures, preparing patients for treatments by the physician and organizing the office (including managing the finances). There are about 300,000 physicians practicing in ambulant practices in Germany. The physician owns the practice and runs the business. In each practice, on average 2.4 MOAs are employed.

In a previous study on the workload of German MOAs (n=724), the very low salary, unattractive working hours (long break in the early afternoon and an unpredictable end of the working day), lack of promotion on the job, high amount of unpaid overtime work, extreme dependence from the employer, and (compared to other occupations in Germany) lack of protection from layoffs were considered the worst aspects.[24] Only 38% of MOAs indicated they would choose this occupation again. A full-time working MOA earns, depending on the region, approximately 30,000 Canadian dollars per year.

Design and setting

In the planning phase of the study, qualitative interviews were conducted with 10 midwives working in different environments (small and large hospitals, working with and without additional independent work, self-employed midwives) and with three MOAs working in different types of physicians' practices (GPs or specialists, small or large numbers of patients). The interview questions addressed sources of strain at the workplace. According to the results of these interviews, and on the basis of previous research on work and health in medical professions, a questionnaire was designed. A pretest was conducted

with midwives working in a large university hospital in the west of Germany. After revision of some items, the questionnaire was sent out.

Recruitment

A call for participation in a study on the "status of work and health in midwives" (respectively MOAs) was published in the *German Journal of Midwifery* that reaches about 12,000 midwives and in the journal *PraxisNah* that reaches about 30,000 MOAs. As a result, 122 midwives ordered 305 questionnaires and 84 MOAs ordered 422 questionnaires. Additionally, 81 midwives' questionnaires were sent to randomly selected hospitals (labour wards) and 130 MOAs' questionnaires were sent to physicians' practices throughout Germany. Altogether 386 questionnaires for midwives and 552 questionnaires for MOAs were sent out.

The questionnaires were accompanied by a letter explaining the purpose of the study. The contact address of the first author at the Department of Medical Sociology at the University of Marburg, Germany was provided. The questionnaires were fully completed and sent back by 230 midwives and 227 MOAs. If every questionnaire we sent out actually reached an eligible participant, the response rate was 60.4% among midwives and 44.1% among MOAs. If some of the questionnaires were not forwarded to potential participants, the response rate was higher.

MEASURES

Occupational biography and job characteristics

Women were asked how long they have been working in this profession after graduation, how long they have been waiting for their training place, how many years they have been working at their current workplace, what status they have at their worksite and whether they work independently (self-employed) in addition to their employment in hospital, how their schedule is organized in terms of shift work, how many hours per month are agreed on in their contract, how many hours per month they work overtime, on average, and how (and if) the overtime hours are compensated. Additionally, participants were asked whether they are paid adequately considering their level of demands, whether they could earn the same amount of money more easily in another job, whether they know people at the worksite (even in other professions) who receive a higher salary for comparable tasks, whether they plan further qualifications in general and on-the-job training, and whether they would choose their profession again. Furthermore, 15 characteristics of a job were presented (for example, high salary, contact with people, opportunity to help others) and the participants were asked to indicate which of these motives were relevant for themselves when choosing the profession and whether each of these 15 items were actually present in their profession. The number of mismatches between expectations and reality was counted. Four questions addressed the amount of control the participants perceived regarding practical issues (for example, mode of delivery, personal style of working) and three questions addressed the amount of control related to colleagues (for example, work and holiday schedules, staffing issues). These questions were presented on a four-point scale ranging from no control at all (1) to full control (4).

Stressors from unpaid work

Women were asked how many hours per day they worked in paid work, what percentage of the total unpaid work was shared by their partner (if applicable) and how satisfied women were with this on a four-point scale from not at all satisfied (1) to very satisfied (4).

Burnout

Professional burnout was measured using Maslach Burnout Inventory (MBI).[16] The MBI consists of 22 items to measure burnout on three dimensions: Emotional Exhaustion, Depersonalisation, and Personal Accomplishment. The nine items of the Emotional Exhaustion subscale describe feelings of being emotionally overextended and exhausted by one's work. The Depersonalisation subscale contains five items assessing an unfeeling and impersonal response towards the recipients of one's care (for example, patients). The eight items of the Personal Accomplishment subscale describe feelings of competence and successful achievement in one's work with people. It is important to note that the Personal Accomplishment items express positive connotations while the Emotional Exhaustion and Depersonalisation items express negative connotations, so that the Personal Accomplishment scale correlates inversely with the other two scales. Participants rated the frequency of experiencing feelings related to each subscale using a seven-point scale ranging from never (0) to always (6). The MBI is

by far the most widely used instrument to measure burnout. The authors reported internal consistency estimates of reliability: 0.90, 0.79, and 0.71, for the Emotional Exhaustion, Depersonalisation, and Personal Accomplishment subscales, respectively.[16] Normative values for various human service professionals have also been established. The group norms published for medical professions are 22.2 (EE), 7.1 (DP), and 36.5 (PA), for the three subscales.[16]

Social support

Social support was measured using the short version of the F-Sozu that addressed emotional, instrumental, and practical support, as well as feelings of being imbedded in a support group in everyday life.[25] The instrument consists of 22 five-scale items. Reliability (Cronbach's alpha >.85) and validity have been established in various studies.

Gender role orientation (GRO)

Gender role orientation was assessed using 21 seven-point scale items that focused on the distribution of labour between heterosexual couples in the home (scale A), the roles and status of women and men in working life (scale B), and the role of women in society (scale C). Nine of these items have been adapted from the German census questionnaire and 13 of these items have been developed by the first author. Validity was established using principal component factor analysis. Reliability of the three scales were satisfying (Cronbach's alpha >0.80 in each subscale).

Health behaviour and self-assessed health status

Participants were asked how many cigarettes they smoked per day, how many drinks (beer, wine, spirits) they consumed per week, how often they consumed medication (painkillers, sleeping pills, tranquilizers), and how many hours they slept on average on working days and off days. Other aspects of health behaviour were measured using standardized items (four-point or five-point items). Frequent activities were considered as sports (for example, swimming, tennis, horse riding, etc.) and long walks at least once a week. Frequent utilization of sauna and medical massages were defined as engaging in these activities at least twice per month. Frequent utilization of GP and cancer checkup was defined as at least once per year and breast self examination as at least every two months. Eating habits were assessed on a four-point scale (from daily to less than once a week). Low calorie dieting was assessed on a scale ranging from never to six times per year. Health status was measured in German school marks ranging from best (1) to worst (6).

STATISTICAL ANALYSES

Group differences in terms of job characteristics and health-related measures were tested using chi-square tests for nominal variables and Mann-Whitney U-tests for continuous variables. Linear regression models were used to test the predictors for the three burnout dimensions Emotional Exhaustion, Depersonalisation, and Personal Accomplishment, entering all work-related and demographic variables as independent variables into the model. To identify predictors for self-assessed health status, linear regression models were conducted entering demographic and work-related variables, the social support scale, three burnout scales, and three GRO scales in groups as independent variables. Statistical

TABLE 1:
Demographic characteristics of the sample

Characteristic	Midwives N=230 N (%)	Medical office assistant N=227 N (%)	P
Age			
20-29 years	74 (32.2)	89 (39.2)	.15
30-39 years	94 (40.8)	87 (38.3)	
40-49 years	36 (15.7)	37 (10.8)	
50-59 years	25 (10.9)	14 (6.2)	
over 60 years	1 (0.4)	0	
Level of education			
secondary school	21 (9.2)	30 (13.2)	<.001
six grade high school	91 (39.9)	162 (71.4)	
high school	114 (50.0)	30 (13.2)	
university	2 (0.9)	5 (2.2)	
Number of children			
0	126 (56.3)	153 (67.4)	<.01
1	36 (16.1)	38 (16.7)	
2	39 (17.4)	33 (14.5)	
3 or more	23 (10.2)	3 (1.3)	
Household composition			
living single	60 (26.1)	59 (26.0)	.99
living with a partner	135 (58.7)	134 (59.0)	
co-op	11 (4.8)	16 (7.0)	
lone parent	16 (6.9)	10 (4.4)	
living with own parents	7 (3.0)	5 (2.2)	
Size of community where participants live			<.01
up to 2,000 inhabitants	26 (11.3)	36 (15.9)	
2,000-10,000	34 (14.8)	55 (24.2)	
10,000-50,000	45 (19.6)	52 (22.9)	
more than 50,000	118 (51.3)	80 (35.2)	
Size of community where participants work			<.001
up to 2,000 inhabitants	2 (0.9)	6 (2.6)	
2,000-10,000	26 (11.3)	53 (23.3)	
10,000-50,000	61 (26.5)	63 (27.8)	
more than 50,000	137 (59.6)	97 (42.7)	

analyses were conducted using SPSS.

RESULTS

Demographic characteristics

There were no significant differences between midwives and MOAs regarding age and composition of household (Table 1). The level of education and the number of children were significantly higher among midwives than among MOAs. Significantly more midwives than MOAs lived and worked in an urban environment.

Professional biography and job characteristics

The average job experience (mean number of years in the profession including training) and the proportion of full-time employees did not differ significantly between midwives and MOAs (Table 2). Midwives worked more hours overtime than MOAs (10.9 versus 8.8 hours, SD=10.2 and 9.7 respectively), and a higher proportion of midwives worked independently in addition to their employment at a hospital or practice. Significantly more MOAs than midwives had a leadership role at their workplace.

Midwives waited significantly longer to receive a place for training at a school of midwifery, and a larger proportion of midwives (59.1% versus 48.5% of MOAs) planned to engage in further qualifications (for example, acupuncture, homoeopathy, etc.). Almost four out of five MOAs and more than two out of three midwives planned training on the job (such as for leadership roles; $p<0.05$).

TABLE 2:
Group differences in aspects of the occupational biography and job characteristics

Characteristic	Midwives N=230 N (%)	Medical office assistants N=227 N (%)	P
Working self-employed (additional to employment)	141 (61.3)	14 (6.2)	<.001
Occupational status			
head	19 (8.3)	135 (59.7)	<.001
deputy head	10 (4.3)	0	
employee	140 (60.9)	80 (35.2)	
self-employed	33 (14.3)	0	
other	28 (12.4)	12 (5.1)	
Full-time/ part-time job			
up to 20 hours	32 (17.7)	24 (10.7)	.13
21-30 hours	31 (17.1)	41 (18.3)	
Full-time	118 (65.2)	159 (71.0)	
Waiting time for training in the job			
no waiting time	4 (1.8)	5 (2.2)	<.001
1-6 months	104 (45.8)	180 (85.3)	
7-12 months	49 (21.6)	19 (9.0)	
1-2 years	41 (18.1)	5 (2.4)	
3-5 years	27 (11.9)	2 (0.9)	
more than 5 years	2 (0.9)	0	
Plans for further qualifications	136 (59.1)	110 (48.5)	<.05
Plans for training on the job			
Yes	156 (68.1)	176 (78.2)	<.05
No	73 (31.9)	49 (21.8)	
Opportunities for professional improvement			.06
very good	13 (7.3)	3 (1.6)	
good	55 (30.7)	55 (29.9)	
poor	96 (53.6)	105 (57.1)	
very poor	15 (8.4)	21 (11.4)	
Satisfaction with salary			
very satisfied	3 (1.3)	15 (6.8)	<.01
satisfied	59 (25.7)	69 (31.1)	
less satisfied	116 (50.4)	102 (45.9)	
not at all satisfied	52 (22.6)	36 (16.2)	
Wage is appropriate for level of tasks			
Yes	29 (12.8)	81 (36.3)	<.001
No	198 (87.2)	142 (63.7)	
People with similar tasks earn more			
Yes	116 (51.3)	149 (66.5)	<.01
No	110 (47.8)	75 (33.5)	
Can earn same wage easier elsewhere			
Yes	106 (41.1)	126 (57.8)	<.05
No	119 (52.9)	92 (42.2)	
Was interested in other occupation too	126 (54.8)	167 (73.6)	<.001
Would choose same occupation again	179 (77.8)	86 (37.9)	<.001
Number of aspects to improve occupational situation			
0	13 (5.7)	132 (58.1)	<.001
1	111 (48.3)	89 (39.2)	
2 or more	73 (31.7)	1 (0.4)	
No comment	33 (14.3)	5 (2.2)	
	x (SD)	**x (SD)**	
Control			
over practical aspects of work	7.9 (6.2)	3.9 (1.8)	<.001
over staffing aspects	12.1 (9.1)	9.4 (3.5)	<.001
Number of years in this profession	13.4 (8.5)	14.4 (8.4)	.22
minimum maximum	3-40	3-41	
Number of hours worked overtime	10.9 (10.2)	8.8 (9.7)	<.05
minimum maximum	0-50	0-50	
Burnout			
Emotional Exhaustion	20.0 (9.3)	21.4 (9.4)	.58
Depersonalisation	8.0 (5.0)	8.0 (5.1)	.97
Personal Accomplishment	31.1 (7.7)	27.2 (7.7)	<.001

TABLE 3:
Predictors for burnout (EE, DP and PA) among midwives and MOAs: linear regression models

Predictor MW	Beta	p	R^2	Sig. F Change	Predictor MOA	Beta	p	R^2	Sig. F Change
Emotional Exhaustion			.34	.000	**Emotional Exhaustion**			.26	.000
Satisfaction with salary	.41	<.01			Leadership role	.35	<.001		
Regret about choice of occupation	-.36	<.01			Regret about choice of occupation	-.25	<.05		
Mismatch between expectations and reality	.30	<.01							
Overtime work	.28	<.05							
Lack of chances for promotion	-.25	<.05							
Years in the profession	-.24	<.05							
Working independently	.23	<.05							
Depersonalisation					**Depersonalisation**				
Satisfaction with salary	.38	<.01	.24	.004	Regret about choice of occupation	-.36	<.01	.09	.085
Others are paid better	-.35	<.01			Years in the profession	-.27	<.05		
Mismatch between expectations and reality	.32	<.01			Full-time employment	-.22	<.05		
Overtime work	.30	<.05							
Working independently	.25	<.05							
Personal Accomplishment					**Personal Accomplishment**				
Overtime work	-.33	<.05	.15	.04	Regret about choice of occupation	.29	<.01	.10	.051
Years in the profession	.33	<.05			Years in the profession	.24	<.05		
Satisfaction with salary	-.29	<.05							
Regret about choice of occupation	.27	<.05							

The chances for promotions were predicted as unfavourable: 62% of midwives and 68.5% of MOAs assessed the chances for promotion poor or very poor ($p=0.06$). Almost three out of four midwives and 62.1% of MOAs were less, or not at all, satisfied with their salary ($p<0.01$). The vast majority of midwives (87.2%) and 63.7% of MOAs report that the salary is inappropriate for the level of tasks ($p>0.001$) and about half of the midwives and two thirds of the MOAs report that people at their worksite (doing similar work) are paid better than they themselves ($p<0.01$). About 40% of midwives and 57.8% of MOAs indicate they could earn the same money more easily in another job ($p<0.05$).

More than half of the midwives and about three-quarters of the MOAs were interested in other professions than the one in which they work ($p<0.001$). More than three-quarters of midwives but less than 40% of MOAs report they would choose their profession again ($p<0.001$). Midwives reported more aspects of their current job that needed improvement ($p<0.001$). The level of burnout in the dimensions Emotional Exhaustion and Depersonalisation did not differ between midwives and MOAs, but midwives were characterized by a significantly higher level (= lower level of burnout) of Personal Accomplishment than MOAs ($p<.001$).

Predictors of burnout

Among midwives, the lack of satisfaction with salary and overtime working hours were related to all three dimensions of burnout (Table 3). Mismatches between expectations and reality on the job, and not working independently, were associated with Emotional Exhaustion and Depersonalisation. The number of years in the profession and the regret to have chosen this occupation were related with Emotional Exhaustion and with Personal Accomplishment. Assessing the chances for

promotion on the job negatively, increased the likelihood for Emotional Exhaustion. The feeling that some individuals doing similar work at the worksite are paid better was connected with Depersonalisation.

Among MOAs, regret in having chosen the profession was related to all three dimensions of burnout. The number of years in the profession was associated with Depersonalisation inversely, and with Personal Accomplishment positively. Another predictor for Emotional Exhaustion was a leadership role at the workplace. Full-time employment was related to Depersonalisation. The amount of explained variance was consistently higher in the regression models with midwives than with MOAs.

Health behaviours and self-assessed health status

The proportion of non-smokers and women drinking low amounts of alcohol did not differ significantly between midwives and MOAs (Table 4). Neither did we find significant group differences in terms of exercise. A higher proportion of midwives did not use any kind of medication or drugs, and less midwives than MOAs engaged in low calorie diets. Midwives more often than MOAs chose whole-wheat products and they visited saunas and spas more often. There were no differences in terms of regular walks and massages. A higher percentage of MOAs utilized physicians' assistance in cancer checkups and general checkups, while a higher proportion of midwives conducted self-examinations of the breast. The average hours midwives reported sleeping on workdays and on off days were significantly lower than the number reported by MOAs. Self-assessed health status was significantly worse among MOAs than among midwives.

Predictors of self-assessed health status

Among midwives, the burnout dimension Emotional Exhaustion was the most important predictor for self-assessed health status (Table 5). Smoking was positively

TABLE 4:
Percentages of midwives and medical office assistants practicing health behaviours

Behaviour	Midwives N=233 N (%)	Medical office assistants N=227 N (%)	P
Non-smoker	140 (69.9)	134 (66.6)	.17
Low/moderate alcohol intake	106 (46.9)	126 (55.8)	.14
No medication/drugs	140 (64.8)	106 (52.0)	<.01
Frequent sports/exercise	130 (56.6)	131 (57.8)	.89
Frequent sauna/spa	64 (27.8)	34 (15.3)	<.01
Frequent massages	15 (6.6)	18 (9.0)	.24
Frequent walks	124 (55.0)	124 (56.5)	.97
Daily whole wheat diet	73 (32.2)	54 (23.8)	<.05
No low calorie diet	173 (78.2)	159 (67.3)	<.05
General check-ups	64 (28.1)	105 (46.6)	<.001
Cancer screening	163 (71.1)	180 (78.8)	<.05
Breast self-examination	150 (65.1)	125 (55.2)	<.05
	x (SD)	**x (SD)**	
Sleeping on workdays (hrs)	6.6 (1.1)	7.0 (0.9)	<.001
Sleeping on off-days (hrs)	8.6 (1.2)	8.8 (1.4)	<.05
Self assessed health status*	2.88 (0.92)	3.11 (1.08)	<.05

** Range 1 (excellent) 6 (seriously ill)*

TABLE 5:
Predictors for self-assessed health status among midwives and MOAs: linear regression models

Predictor MW	Beta	Sig.	R^2	Sig. F Change	Predictor MOA	beta	Sig.	R^2	Sig. F Change
			.281	.000				.177	.000
EE	.35	<.001			EE	.14	<.05		
Progressive GRO re work life	-.15	<.01			Social support	-.23	<.001		
Could earn same money easier	.12	<.05			Overtime work	.14	<.05		
Living with a partner	.14	<.05			Level of education	-.15	<.05		
Inadequate salary	-.15	<.01			Full-time employment	.14	<.05		
Smoking	.21	<.01			Smoking	.16	<.05		
Hours of sleep on off days	.14	<.05							

related to health; that is, the more cigarettes the midwives smoked the worse they assessed their own health. Hours of sleep on off days were related to health in the same direction as smoking. A progressive attitude regarding women's participation in the labour force and living without a partner were associated with better subjective health. Feeling that the wage is not appropriate and believing that one could earn the same money more easily in another job were related to worse assessments of midwives' health status.

Among MOAs, a lack of social support was the most important predictor for self-assessed health status. Emotional Exhaustion was identified as a predictor in the model, but it was less strongly related to health. Smoking, overtime hours as a continuous variable, full-time employment, and a low level of education were related to poor subjective health in MOAs. The amount of explained variance in subjective health status was higher among midwives than among MOAs.

DISCUSSION

Considering that midwives themselves probably conduct most studies on midwifery issues, and that midwives in Germany lack academic training and resources to develop research skills, the potential for studies on midwives in Germany is low. We conducted the first systematic study on workload and health among German midwives, comparing them to MOAs.

In previous large-scale surveys on predictors of health, data of employees in related occupations (such as social service professions) were analysed together instead of taking account of the disparities that appear between those occupations.[20] Our study shows that even among the paramedic professions, major differences exist. Midwives and MOAs both belong to the female-dominated paramedical professions. Although the entry requirements for both occupations are similar in Germany (graduation from sixth-grade high school and age older than 15 years), the educational background of women in these two jobs, their type of tasks and level of responsibility, and their work schedules (for example, shiftwork and nightwork for midwives) differ considerably.[23-24]

Midwives in this study were significantly less satisfied than MOAs with the low salary found in these female-dominated occupations. This contrast cannot be related to differences in work experience because, on average, women in both occupational groups were fairly experienced. More midwives than MOAs have a higher educational attainment in this sample and expectations on salary are related to level of education.[26] The majority in both professions plan further career advancement, although they are mainly pessimistic in assessing their chances for improvement. Midwives who want to advance in Germany may either receive training to become a head of a labour ward or a head of a school of midwifery. Midwives who want to study at a university have to engage in distant education abroad because there are no options in Germany for academic training yet. A paid position in research is not currently an available choice.

Although the perceived level of control is significantly higher among midwives than among MOAs, both occupational groups manifested medium levels of burnout on the dimensions Emotional Exhaustion and Depersonalisation. While Personal Accomplishment among MOAs was also at a medium level, midwives showed a low intensity of burnout here. This result supports the findings by Wheeler and Riding (1994) who examined British nurses and midwives.[27] It means that, on average, midwives still feel that although their work is exhausting, they can achieve positive results with their work. This finding also corresponds with the fact that in our study about three-quarters of midwives would choose this job again. Apparently, not the job itself but the (unnecessary) burdens associated with it cause discomfort.

There were significant points of overlap in terms of the predictors for burnout in both groups. Lack of satisfaction with the salary and overtime hours were related to burnout. In Sandall's study on British midwives, long working hours and a low perception of control were the major predictors of burnout.[28] Contrary to Sandall and other previous studies, items referring to control at the workplace have not been chosen as predictors for burnout in our sample.[14,28] Among midwives, mismatches between expectations and reality on the job were predictors for burnout. We did not find a previous study that addressed this question. These kinds of mismatches may be prevented in better preparation for everyday working life during training, or by better selection of students

and trainees.

MOAs' everyday experiences in cooperating with physicians may differ to some extent from the impressions they had as patients or from TV, regarding the working life in a physicians' practice. This may be the reason why regret at having chosen this profession is related to burnout. The fact that those midwives and MOAs who have longer experience on the job are less burned-out may highlight a selection process. The finding that nurses and midwives who like the job stay in the field, whereas the others drop out, has been previously reported.[27,29]

Unpaid work at home did not play a role for burnout. We cannot compare this result to previous studies because, to our knowledge, the association between unpaid work and burnout has not yet been examined. It seems that it is not the amount of work but rather the type of work that is relevant for burnout.

Female dominated professions are characterized by a high demand of emotional labour.[30] The quality of care women receive from midwives partly depends on the relationship between the woman and her midwife.[31] Midwives engage in an emotional bond with the women during labour and birth. At the same time, they are exposed to high levels of expressed emotions, intimacy, and pain.[31] Additionally, they often feel they have to protect the natural progress of birth against interventions from physicians.[32]

MOAs know their patients sometimes for many years and also bond with them. Their work requires a high amount of empathy for tasks such as the "translation" of physicians' medical language into terminology patients can understand.[24] MOAs often have to deal with experiences of severe illness and death among their patients. It has been reported that highly emotional labour in the context of high workload, time pressure and lack of control may be related to burnout.[14] Working for one's own family may represent another emotional quality of work and thus is not associated with burnout. Further studies should address the association between unpaid work and burnout to test whether or not this is a random result.

While health behaviours such as smoking, alcohol consumption and exercise did not differ between the two occupational groups, MOAs reported using more medication for sleeping problems, pain, and tranquilizers. Because MOAs work in a social context where drugs are frequently used and prescribed, the acceptance of medication use may be higher. In terms of medical checkups, MOAs seem to count on physicians'assistance and technical assistance more than do midwives. Midwives, on the contrary, engage in breast self examination more often than MOAs. Studies found that many midwives offer complementary therapies to their clients and may prefer alternative approaches for their own well-being.[33] Therefore, the difference we found in health-related behaviours may be grounded in contrasting sets of opinions. Disparities in sleeping hours may be associated with the fact that midwives work night shifts and, on average, have more children. Congruent with previous studies, women characterised by higher levels of education and income (midwives) assess their health as being significantly better than do women with lower SES (MOAs).[3]

In both occupational groups, Emotional Exhaustion is an important predictor for health status. Thus, coping with adverse working conditions may affect health and well-being. While this result has been found before in male Japanese workers, Dutch men, and in US-staff of big organizations, our study is the first one that provides data from two female-dominated paramedical professions.[18,19,34] The only other predictor that was relevant for health status in both groups was smoking. This result supports previous findings that women who use tobacco assess their health as being poorer than non-smokers.[3] There were no other areas of overlap in terms of predictors for health in midwives and MOAs. This suggests the importance of different social context factors for each single profession.

LIMITATIONS OF THE STUDY

Due to the cross-sectional study design, we cannot draw causal conclusions from the results. We cannot accurately assess the response rate and we do not know how representative the sample is for the two occupational groups. Thus, we cannot rule out a selection bias. Additionally, we might have missed information on occupational aspects that might have influenced the outcomes as well (for example, size of hospital and practices). We assessed the subjective health status with a single item, which may limit the

reliability of this measure. Furthermore, we analysed members of a working population, mainly younger than 40, so that the external validity of our findings is limited.

CONCLUSIONS

Despite the limitations, our study adds new information on differences between employees in two female-dominated occupations in terms of job characteristics, health behaviour and predictors of subjective health status. Such differences should be taken into consideration when designing further appropriate studies for women's health. In every linear regression model, however, the amount of explained variance was higher for midwives than for MOAs. Therefore, the study design was less appropriate for MOAs. Further studies should be conducted to identify additional factors that are relevant for burnout and health in MOAs. In this sample of German midwives and MOAs, lack of adequate salary and overtime hours were related to burnout, and burnout (emotional exhaustion) was in turn related to subjective health status. Structural interventions such as an adequate increase in salary and a reduction of overtime work may be associated with a decrease in emotional exhaustion that may lead to better health. Further studies should test whether this strategy works.

AUTHOR BIOGRAPHIES

Birgit Reime, ScD, MPH, is an epidemiologist and psychologist with NEXUS: Researching the Social Context of Health Behaviour, at the University of British Columbia, Vancouver. She also works at the Centre for Healthcare Innovation and Improvement at the BC Research Institute for Children's and Women's Health, Vancouver BC.

Sandra Tomaselli-Reime, RM is a midwife and works as a research assistant with the Department of Healthcare and Epidemiology at the University of British Columbia, Vancouver BC, Canada.

Address correspondence to: Dr. Birgit Reime, MPH, NEXUS, The University of British Columbia, 302-6190 Agronomy Road, Vancouver BC V6H 1Z3. E-mail: breime@cw.bc.ca or breime@nursing.ubc.ca.

REFERENCES

1. Crawford R. You are dangerous to your health: the ideology and politics of victim blaming. In: Krieger N, editor. Embodying inequality: epidemiologic perspectives. New York: Baywood, 2004, in press.
2. Graham H. Behaving well: women's health behaviour in context. In: Roberts H, editor. Women's health counts. London: Routledge, 1990. p. 195-241.
3. Blaxter M. Health and lifestyles. London: Tavistock, 1990.
4. Emslie C, Hunt K, Macintyre S. How similar are the smoking and drinking habits of men and women in non-manual jobs? Eur J Public Health 2002;12:22-8.
5. Blaxter M. Whose fault is it? People's own conceptions of the reasons for health inequalities. Soc Sci Med 1997;44(6):747-56.
6. Krieger N. Questioning epidemiology: objectivity, advocacy, and socially responsible science. Am J Pub Health 1999;89(8):1151-3.
7. Arber S. Comparing inequalities in women's and men's health: Britain in the 1990s. Soc Sci Med 1997;44(6):773-87.
8. Hunt K, Annandale E. Just the job? Is the relationship between health and domestic and paid work gender-specific? Soc Health Illn 1993;15(5):632-64.
9. Macintyre S, Hunt K, Sweeting H. Gender differences in health: are things really as simple as they seem? Soc Sci Med 1996;42:617-24.
10. Elliott SJ. Psychosocial stress, women and heart health: a critical review. Soc Sci Med 1995;40(1):105-15.
11. Haynes SG, Feinleib M. Women, work, and coronary heart disease. Prospective findings from the Framingham study. Am J Public Health 1980;70:133-41.
12. Kazanijan A. Health-manpower planning or gender relations. The obvious and the oblique. In: Riska E, Wegar K, editors. Gender, work and medicine. Women and the medical division of labour. London: Sage Publications, 1993. p.147-63.
13. Charles M. Cross-national variation in occupational sex segregation. Am Sociol Review 1992;57:483-502.
14. Leiter MP, Maslach C. Six areas of worklife: a model of the organizational context of burnout. J Health Human Service Admin 1999;21:472-89.
15. Cherniss G. Professional burnout in human service organizations. New York: Praeger, 1980.
16. Maslach C, Jackson SE. Maslach burnout inventory. Research edition. Paolo Alto: Consulting Psychologists Press, 1986.

17. Girault N. Burnout and coping: new perspectives. In: Winnubst J, Maes S, editors. Lifestyles, stress and health: new developments in health psychology. Leiden: DSWO Press Leiden University, 1992. p. 259-74.
18. Golembiewski RT, Munzenrider RF. Health-related covariants of phases of burnout: a replication. Org Development J 1993;11(1):1-12.
19. Appels A. Schouten E. Burnout as a risk factor for coronary heart disease. Behav Med 1991;3:53-9.
20. Cox BD, Blaxter M, Buckle ALJ, Fenner NP, Golding JF, et al. The health and lifestyle survey: preliminary report. London: The Health Promotion Research Trust, 1987.
21. Macran S, Clarke L, Sloggett A, Bethune A. Women's socio-economic and self-assessed health: identifying some disadvantaged groups. Soc Health Illn 1994;16(2):182-206.
22. Messing K, Dumais L, Romito P. Prostitutes and chimney-sweeps both have problems: towards full integration of both sexes in the study of occupational health. Soc Sci Med 1993;36(1):47-55.
23. Eilert S, Kerkmann M, Schnidt R. Eine Untersuchung zur Situation angestellter Hebammen. Deutsche Hebammen Zeitschrift 1992;11:442-9.
24. Hecker U. Arzthelferinnen- fünf Jahre nach der Ausbildung. Bundesinstitut für Berufsbildung, editor. Berlin: Berichte zur beruflichen Bildung, 1991.
25. Sommer G, Fydrich T. Entwicklung und Überprüfung eines Fragebogens zur sozialen Unterstützung (F-Sozu). Diagnostica 1991;37:160-87.
26. Krieger N, Williams DR, Moss NE. Measuring social class in US public health research: concepts, methodologies, and guidelines. Annu Rev Pub Health 1997;18:341-78.
27. Wheeler H, Riding R. Occupational stress in general nurses and midwives. Br J Nurs 1994;3(10):527-34.
28. Sandall J. Team midwifery and burnout in midwives in the UK: practical lessons from a national study. MIDIRS Midwifery Digest 1999;9(2):147-51.
29. Hannigan B, Edwards D, Coyle D, Fothergill A, Burnard P. Burnout in community mental health nurses: findings from the all-Wales stress study. J Psychiatry Mental Health Nurs 2000;7(2):127-34.
30. James, N. Emotional labour: skill and work in the social regulation of feelings. Sociological Rev 1989;37:15-41.
31. Hunter B. Emotion work in midwifery: a review of current knowledge. J Adv Nurs 2001;34(4):436-44.
32. Kitzinger J, Green J, Coupland V. Labour relations: midwives and doctors on the labour ward. In: Garcia J, Kilpatrick R, Richards M, editors. The politics of maternity care: services for childbearing women in the 20th Century Britain. Oxford: Clarendon, 1990. p. 149-62.
33. Allaire AD, Moos MK, Wells SR. Complementary and alternative medicine in pregnancy: a survey of North Carolina certified nurse-midwives. Obstet Gynaecol 2000;95(1):19-23.
34. Nakamura H, Nagase H, Yoshida M, Ogino K. Natural killer (NK) cell activity and NK cell subsets in workers with a tendency of burnout. J Psychosom Res 1999;46(6):569-78.