UNIVERSITY of PÉCS
FACULTY OF HEALTH SCIENCES
DOCTORAL SCHOOL in HEALTH SCIENCES

Head of Doctoral School:
Prof. József Bódis MD, PhD, DSc

Program 1 (PR-1)
Interdisciplinary
Head of Program:
Prof. Gábor Kovács L. MD, PhD, DSc
E-95

Job satisfaction, health behaviour and sense of coherence among midwives

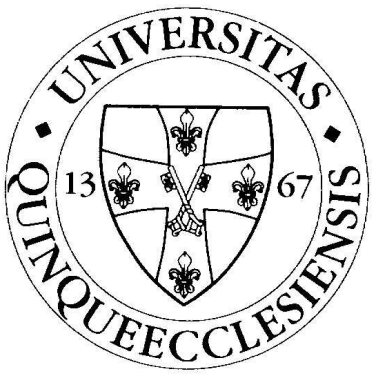
Job satisfaction and work values of midwives: a comparative analysis

Doctoral Thesis (Ph.D.)

KRISZTINA GEBRINÉ ÉLES

Thesis advisor: Dr. habil. Kinga Lampek

Thesis co-advisor: Dr. Andrea Gabriella Sárváry



Pécs

2020

INTRODUCTION

The 2020 strategy of World Health Organisation highlights two large groups of health professionals; the first one comprises of nurses and the second one of midwives. They together form the greatest group of health professionals all over the world. This document emphasises that healthy, adequately supported and well-qualified colleagues can contribute to quality patient care, which positively influences the well-being and health of the whole population. Nurses and midwives are health professionals who are in direct contact with patients and clients through their work. Positive working environment, opportunities, acknowledgement and reward may decrease the number of sick leave days and midwives who leave work. On the other hand, they can contribute to active work and quality work; therefore it is important to support midwives of every age-group so that they can reach and preserve an optimal health status. For this reasons it is crucial to stop the development of non-contagious diseases and their complications among midwives *(WHO 2015).* Figures released by WHO also show that even though the global population has been growing, the number of midwives has been falling all over the world. In more than half of the WHO member states, the number of midwives per 1000 capita is less than three (*WHO, 2018).* The number of properly qualified midwives greatly influences the mortality rate of new mothers and newborn babies. Looking at the figures of Eurostat, great differences can be seen in the number of midwives in the European countries. The leading countries, with 22,000 to 31,000 midwives, are the UK, Germany, Poland and France *(Eurostat, 2017).* Hungary belongs to the group where Austria, Romania, Spain Latvia and the Netherlands can be found with 17 to 21 midwives per 100.000 inhabitants *(Eurostat, 2017).*

In Hungary, the leadership of the Hungarian Nursing Association's Midwife Section regularly surveys the number of midwives working in hospital as well as the level of their qualification. The latest survey from 2015 May showed that 1625 midwives worked in the system that time. A conference lecture on midwifery, held in 2016, called the officials' attention to human resource problems, ageing and the insufficient number of midwives *(Csetneki, 2016*). According to the latest figures the number of midwives continued to decrease by 2017, moreover the rate of midwife graduates worsened because the number of midwife students also has shown a negative tendency. In 18 years' time, between 2000 and 2017, the active number of midwives fell from 2206 to 1405, which was a 36.3% decrease. The situation has and will become serious because working midwives are getting older and will soon retire. The supply of midwife graduates will not be enough to refill the shortage because the number of midwife

students participating in higher education is getting lower year after year. In five years' time the number of midwives dropped by 25% *(Csetneki,* 2019). Midwives work in a special field of health care where they have fairly large independency, basically do not work with patients but with women who are expecting a baby, or delivering a baby, or are in the phase of puerperium. During their work they can live more positive experiences than other health professionals, however, due to changes in the healthcare system or wage disparities, as well as several chronic illnesses relating to midwifery, they need to take risks as often as other health professionals do. During their work they are exposed to physical and mental stress, and regarding health policy they need to face similar problems to that of nurses. They are also affected by leaving work early, ageing, burning out, insufficient number of staff, increasing paperwork, and finally how to enforce their competences at work.

A great number of well-known experts of health sciences did research into and wrote papers on the life quality, job satisfaction, health status of health professionals, midwifery career and leaving work early or staying. The sample of these researches basically included nurses while midwives and midwife students were not involved or they were marked as other health professionals. Therefore these researches did not include those processes about which they articulated their opinion. In the literature some researches still can be found in which midwives were asked. From these ones a writing on health condition and health behaviour of 275 midwives must be mentioned from 2012, which was done by Lipienné and her colleagues *(Lipienné et al. 2015).*

Regarding international publications several of them examined the physical and mental health status of midwives, the presence of workplace stress and the impact of working in shifts. On the basis of research done among nurses, the relation between the sense of coherence and the level of subjective health is detectable *(Leion-loision et al. 2004)*, in addition a strong correlation was seen between the sense of coherence and actual work *(Gui et al. 2014*) and leaving work (*Debska et al. 2017*).

AIMS

The aims of our research performed among midwives were centred around three main fields; *actual working, health status and sense of coherence*.

1. Regarding the factors of actual work we aimed to:

- describe the circumstances of working (work shift, the division they work at, and the characteristics of the physical environment),

- study the attitude of midwives towards work which was composed of two important fields such as job satisfaction and views on career prospects. Regarding job satisfaction we focused on strain at work, control and support.

Regarding career prospects, we focused on the underlying reasons for choosing a career, love for the job, the possibility of being promoted and the possible intention to leave work.

- A further aim was to examine *work value preferences*.

2. By examining the health status of midwives we aimed to:

- get to know their putative, self-assessed *health status*,

- reveal the incidence of chronic diseases among midwives,

- find the main characteristics of their *health behaviour*.

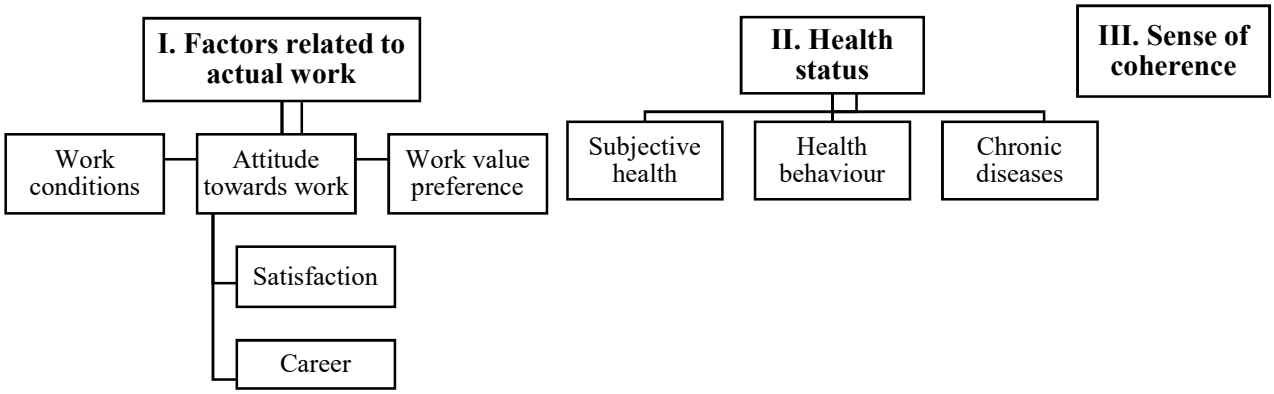
3. We also examined the sense of coherence of midwives through which we aimed to:

- define the level of sense of coherence among midwives,

- find any correlations between the level of sense of coherence and actual working, leaving work and health status.

During our research we also studied the differences between age-groups and school attainment. In order to outline the aims we have made a summarising flow sheet.

Flow sheet 1 The aims of our study (*own resource*)



HYPOTHESES

Focussing on the aims of our research six hypotheses were formulated.

1st hypothesis: We supposed that on the basis of D-C model less than 20% of midwives belong to the high strain group and to the iso-strain group on the basis of D-C-S model.

2nd hypothesis: we supposed that midwives are satisfied with their job despite the few opportunities to build a career or to get promoted in their job.

3rd hypothesis: we supposed that the work value circle of altruism will be the most apparent value among midwives regardless of their age or school attainment.

4th hypothesis: we supposed that the most prevalent chronic diseases among midwives will be locomotion diseases, and deterioration of their health status stands in the background of leaving career as a predictive factor.

5th hypothesis: we supposed that both age and school attainment impact the level of sense of coherence among midwives therefore those who belong to an elder age-group and have higher school attainment, will have a stronger sense of coherence.

6th hypothesis: we supposed that the level of sense of coherence will show a positive correlation with work values, the level of workplace stress and subjective health status.

SAMPLE and METHODS

During our research we performed a cross-sectional examination from October 2015 to April 2016 among midwives working in inpatient care in 13 maternity departments in Hungary (Baja, Nyíregyháza, Gyula, Kecskemét, Székesfehérvár, Szombathely, Debrecen 1 hospital and 1

clinic, Miskolc 2 hospitals, Kisvárda, Budapest 1 hospital and Pécs). The planned number of the sample was counted on the number of midwives who were actually working in 2015, which meant 540 midwives working in delivery rooms. The inclusion criteria also involved that midwives work at the obstetrics and gynaecology department and, within this department, in inpatient care and in delivery rooms at the same time. It was a randomized sample-taking from midwives who were working in hospitals and inpatient care.

The heads of divisions helped us to disseminate and collect the questionnaires. I managed to arrange this with the heads of divisions either in person or by phone. When the questionnaires were collected I travelled to fetch them or they were sent by post.

Creating the measurement tools, sample taking

When creating the measurement tools, we used the questionnaire compiled by Németh and her colleagues (*Németh, 2013*), which was applied in their research carried out among health professionals in 2010. A block of the original questionnaire *was kept* which focused on work-and-colleagues; workload-and-salary-appraisal; life-situation-taste of life-health status; and experiencing the changes in health care. The block of questions asking about family background and housework *was removed*. The remaining questions *were adjusted to* the sample of midwives, and different types of midwife qualifications were also given as options to that question. Our questionnaire *was completed* with Antonovsky's shortened questionnaire on the sense of coherence (SOC 13) (*Balajti et al. 2007*), as well as with the questionnaire of Super-workvalue.

Our questionnaire consisted of the following question blocks: ***socio-demographic*** questions, ***work-related*** questions, questions on ***assessing health status***, and questions examining the ***sense of coherence***.

Editing and evaluating the questionnaires was done with EvaSys *(VSL)*. The statistical analysis of the data was done with the 23.0 Version SPSS. The sample was divided into groups according to age-groups (one group one decade) therefore all together four groups were created: the age-group of 20-29, 30-39, 40-49 and finally the age-group of 50-65. On the basis of school attainment three groups were formed: other type or old type of training; qualification gained within the National Training Registry (OKJ); and BSc degree.

Socio-demographic characteristics namely age, school attainment, and the number of years of employment were analysed with descriptive statistical methods. When processing data relating

to ***actual work,*** descriptive statistical methods were used, and averages and deviations were examined. After the cross table analysis the differences between the groups were checked with a Chi-square test. We worked with a 5% significance level. When working with the figures of strain-control-support, average and median were measured, and after that we modelled groups where the average value below the median was regarded as low and the average value above the median was regarded as high. Therefore on the basis of the D-C-S model we managed to model eight groups according to the level (low or high) of the values of the three factors (strain, control and support). When examining ***work value*** we gave the average and deviation, and considering the average value a rank was formed.

When modelling the secondary factors in the sample we carried out a main component analysis (Exploratory Factor Analysis EFA, Varimax rotation). We managed to model two main components which gave an explanation to the 67.16% variance. The Kaiser Meyer Olkin (KMO) was 0.932, and the significance level of the process was 0.000. We further examined the two secondary factors, which had been modelled, with variant analysis then we clarified the differences between the groups with post hoc LSD test. When examining the figures of ***health status***, we analysed average and frequency. The analysis of cross tables depending on age was checked with Chi square test. We worked with a 5% significance level. When analysing the number of midwives being ill at the same time, the ANOVA test was applied. The figures of the ***sense of coherence*** was analysed with descriptive statistical methods. For five questions of the questionnaire (1^{st}, 2^{nd}, 3^{rd}, 7^{th} and 10^{th}) the reversed coding was used. When we examined correlations deviation square, Fisher's exact test and variation analysis were applied. Furthermore parametric (Spearman's rank) and non-parametric (Pearson) correlation coefficients were also analysed. When examining the ***predicative factors of leaving work*** we created a linear regression model where the independent variants were health status, work value, stress and the sense of coherence.

FINDINGS

The average age of the respondents was 39.9 (22 the youngest and 62 the oldest). While processing data the age distribution was examined in age-groups (one decade one group).

2.2% (5 respondents) did not answer to the question of qualification, 19% (44) gained qualification in the old system which is not included in the National Training Registry (OKJ), 51.9% (120) gained qualification included in the National Training Registry system and 26.8% (62) had BSc degree. On the basis of the answers the responding midwives have been working

in healthcare for 20 years on average, with a minimum of two months and maximum of 41 years, for 19 years in hospital and for 15.7 years in the same obstetrics and gynaecology department.

Presenting our findings related to actual work

When we set our aims in connection with actual work, we intended to examine three main fields. The first one was the work environment, the second one the attitude towards work involving job satisfaction and midwifery profession, and the last one was the work value.

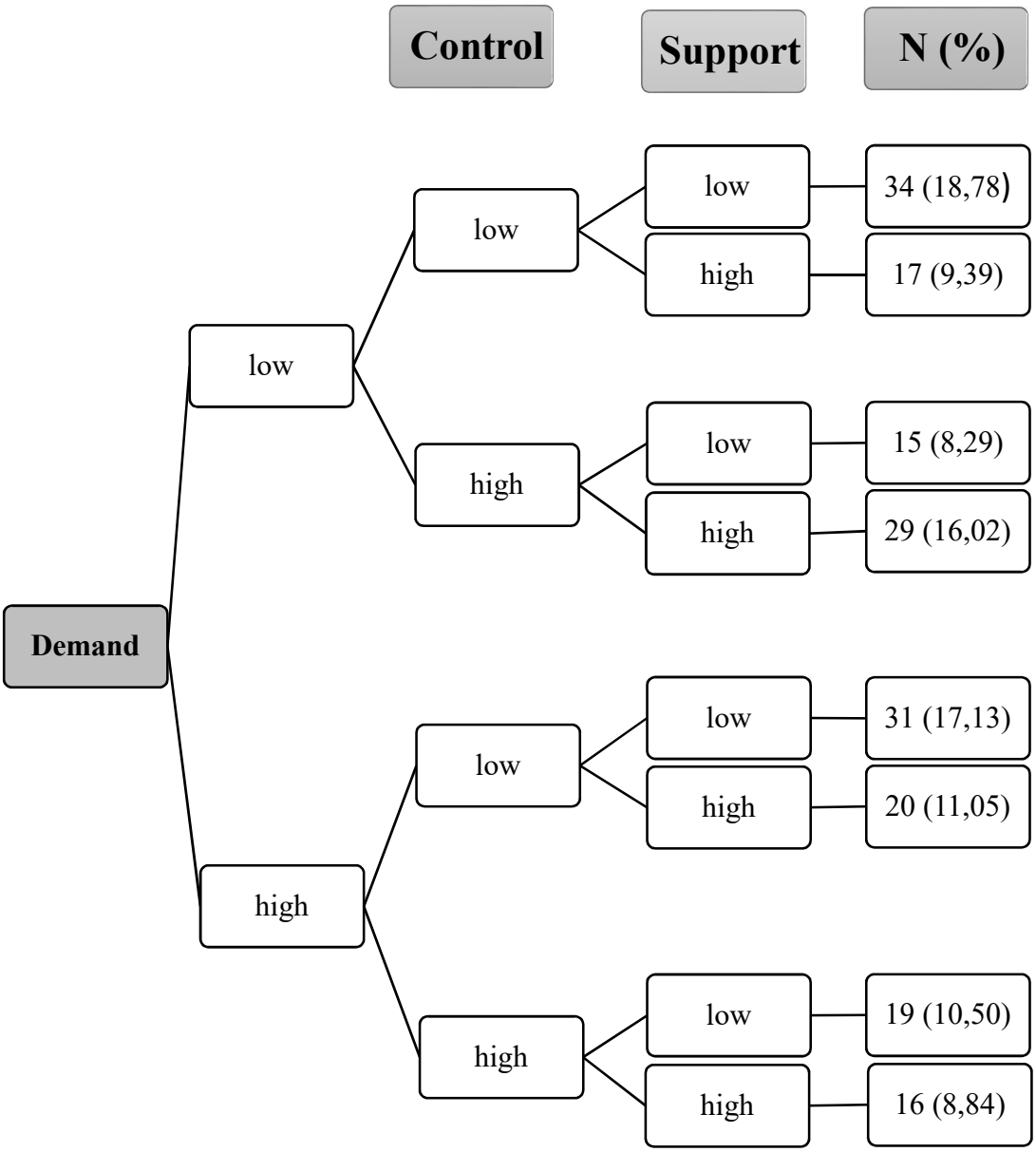
Findings related to the actual work

A large number of the respondents 77.5% (179) worked 12 hours in two shifts, 19.5% (45) worked eight hours in one shift, 0.43% (1) marked three shifts and 1.73% (4) worked in some other type of work shift either in four or six hours. Two of them 0.8% did not answer to this question. In our sample 62% (143 respondents) worked in delivery rooms, 18% (43) in gynaecological departments, 7.7% (18 respondents) in maternity wards and the same amount of midwives namely 7.7% (18 respondents) worked in pregnant pathological departments. 3.8% (9) respondents did not give details about the exact place where they were working. The outcomes of the three questions regarding physical work environment showed that 4% (93) respondents thought that the physical environment of the workplace like overcrowded rooms, temperature etc. did not cause any problems or just small problems. Whereas 30% (70) felt that the burden of the workplace was somehow exhausting and for 22% (53) it caused problems. Almost half of the midwives (43%, 101 respondents) were afraid of occupational accidents. For more than one third of the responding midwives (35%, 81) the lack of devices assisting nurses caused a lot of problems, and for almost the same amount of midwives (34%, 81) this problem caused some difficulties during work. The answers in connection with the availability and supply of equipment, which is necessary for nursing, showed that they caused problems for almost two thirds of the respondents.

Findings related to the attitude towards work

When examining job satisfaction, and relying on the questions of D-S-C model, we found that the mean value of the dimension of work-related strain was the highest (M=3.2) which was followed by control with the mean value of (M=2.45) whereas support had the lowest mean value with (M=2.1). On the basis of the level of strain-control-support (D-C-S model) we managed to model eight groups. Flow sheet 2 shows the distribution of the number of items in the eight groups.

Flow sheet 2 The number and proportion of items in the groups on the basis of D-C-S model



Findings related to career

Almost one-third of the midwife sample thought that the challenges of the job (30.3%, 69) and the desire to help (29.6%, 67) had played a role in choosing this career. More than half of the midwives (53.3%, 121) thought that collegial relations played an important role in not leaving work, and almost the same number of midwives (56.8%, 129) answered that for them their job meant the source of living, and they had no chance to find another job (78.9,179).

According to the answers given to the love for profession, 76.9% of the respondents (176) loved their work, 56.1% (128) did not find it boring, and 64.6% (148) thought it was inspiring. More

than half of the respondents (55.85, 129) answered that if she had to choose a career right then, she would not choose another profession. Only 4.4% (10 respondents) felt that they were not suitable for the midwifery profession. 61.4% (140) of them were satisfied with their own work as a midwife. Almost two thirds of the midwives (64.5%, 149) thought that there was hardly any or no chance at all to climb up the career ladder. 96% of them (214) had not been promoted in the previous 2 years. Regarding the intention to leave work, half of the respondents (51.6%, 116) answered that they had not not try to change job in the previous 12 months, but almost the same amount of midwives (47.6%, 110) answered that leaving job had already came to their mind.

Presenting the findings related to work values

Among midwives (N=231) the three most preferred work value circles were altruism (M=12.40), financial issues (M=12.11) and hierarchy (M=11.99). The mean values hardly differed in the third, fourth and fifth places in the rank of work value circles, physical environment (M=11.94) and collegial relation (M=11.93) also took the third place. The least important value circle was managing (M=8.31).

Table 1 The rank of value circles (N=231)

Value circles	Mean	Deviation	Rank
Altruism	12.40	2.30	1
Financial issues	12.11	2.45	2
Hierarchy	11.99	2.23	3
Physical environment	11.94	2.25	3
Collegial relations	11.93	2.24	3
Job-related security	11.84	2.20	4
Self-assertion	11.76	2.15	5
Diversity	11.64	2.25	6
Prestige	11.35	2.28	7
Work achievement	10.95	2.36	8
Independency	10.87	2.12	9
Creativity	10.13	2.64	10
Spiritual inspiration	9.70	2.27	11
Aesthetics	9.69	2.63	12
Managing	8.31	2.85	13

Value circle – forming groups by analysing the main components

The first factor gave an explanation to the 58.242% of the variance which involved 8 from the work circles like collegial relations, physical environment, hierarchy, work related security, altruism, self-assertion, prestige and financial issues. As a result, this factor was named *actual*

work factor. The second component stood for 8.919% of the variance and included 7 value circles like managing, creativity, independency, spiritual inspiration, diversity, work achievement and aesthetics. This factor was named *self-realization*.

Table 2 The findings of main component analysis*

Super value circle	Factor 1 Actual work	Factor 2 Self-realisation
collegial relations	0.820	0.161
physical environment	0.818	0.257
hierarchy	0.811	0.256
work-related safety	0.798	0.369
altruism	0.753	0.269
self-assertion	0.741	0.441
prestige	0.659	0.495
financial issues	0.653	0.279
managing	0.001	0.835
creativity	0.357	0.771
independency	0.426	0.734
spiritual inspiration	0.327	0.685
diversity	0.538	0.615
work achievement	0.559	0.600
aesthetics	0.440	0.573
% variance	58.242	8.919

**Gebriné et al., 2018*

Examining the components in age-groups and school attainment groups

The next step of the analyses was to further examine the two secondary factors, which had been modelled earlier, with the help of variance analysis. Regarding the age groups, we did not find significant difference between the opinions of the groups (p=0.820). As for the groups of different school attainment, a significant difference could be seen in the *self-realisation* factor. {F (2.192) = 4.046; p = 0.019}. The post hoc test showed that the opinion of those who gained qualification acknowledged by the National Training Register (OKJ) system, significantly differed from the opinion of those who gained a BSc degree (p = 0.014), as well as from those with other type of qualification (p = 0.033).

Introducing the findings related to the health status of midwives

When surveying the health status of midwives, we examined three large fields like *subjective health status*, *the prevalence of chronic diseases* and *the main aspects of their health behaviour*.

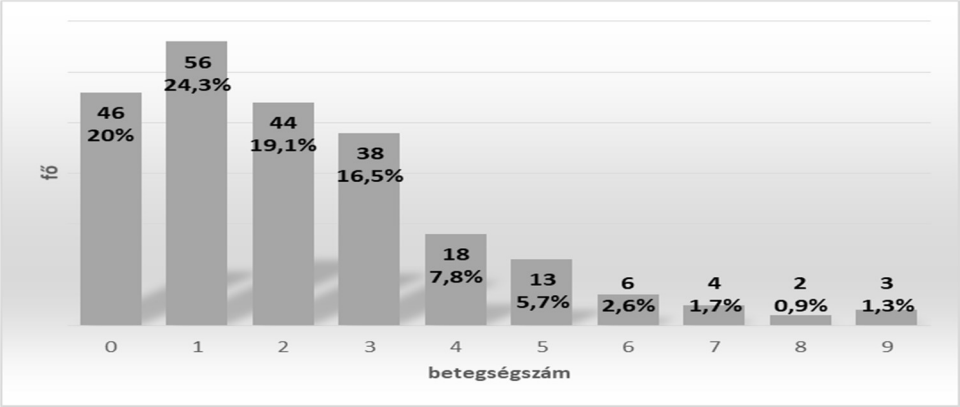
Findings related to subjective health status

To this question 224 assessable answers were given and 7 respondents did not answer to it. On the basis of the findings involving the whole sample, we could see that almost half of the midwives 48.4% (105) thought their health condition was good, about one third of them 31.3% thought it was satisfactory, almost 20% (39 respondents) thought it was excellent whereas 5 respondents (2.3%) thought that their health condition was poor. Regarding the age-group splitting, significant differences were found in the subjective health status $\{x^2(9, 217) = 36{,}470, p = 0{,}000)\}$. Within certain categories of the self-assessed health status, the findings of age-groups are the following. The proportion of those with excellent health status was the highest among in the youngest midwife age-group with 31.3%, also the proportion of those with good health status was also high with 47.9%. All in all, 80% of the age-group of 20-29 belonged to here, and none of the young midwives considered her health status as poor. 60% of the age-group of 30-39 considered their health status good, and only 10% of them thought it was excellent. Similarly to the youngest age-group none of them thought that her health status was poor. Surprisingly, in the age-group of 40-49, the proportion of those with excellent (25%) and good health status (47.4%) was similar to that of the age-group of 20-29. However, among the middle-aged midwives there were some midwives (2.6%) who considered her health status poor. In the oldest age-group there was not a single midwife who thought her health status was excellent, 35.9% thought it was good, 56.4% of them thought it was satisfactory whereas 7.7% of them reported on poor health status.

The prevalence of chronic disease

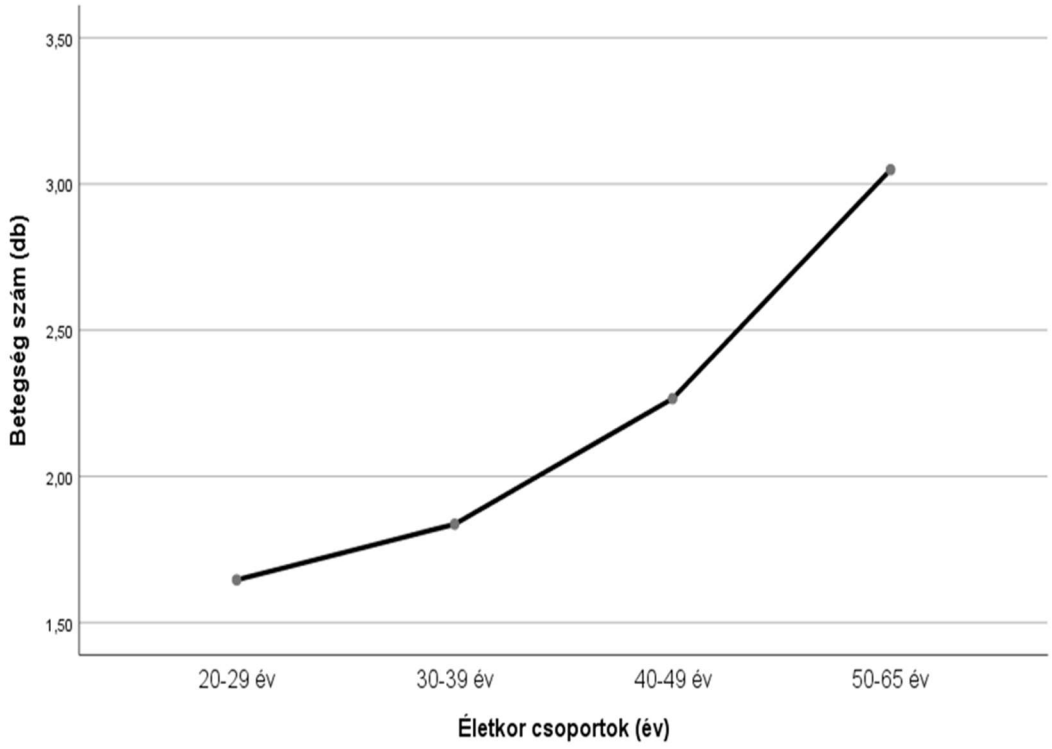
On the basis of our outcomes we got an insight into the number of different diseases that midwives need to cope with. 20% (46) of the respondents did not mark any actual disease. 24.3% of the midwives (56 respondents) marked one disease, 19.1% (44 respondents) marked 2 and 16.5% (83) marked three actual and simultaneous diseases. What is more, 16.1% of the midwives (38) reported on four or six, and 9 of them (3.9%) reported on even more actual and simultaneous chronic diseases.

Fig 3 The number of actual and simultaneous diseases (N=231) N%



When analysing the number of diseases with respect to the age-groups, we found that in the age-group of 40-49 the number of actual and simultaneous diseases significantly increased {F(3,219) = 4,941, p = 0,002 }, and midwives over 50 suffered from three or four different chronic diseases on average.

Fig 4 The number of diseases with respect to the different age-groups (average and 95% CI)



The most prevalent chronic diseases among midwives were varicosity, locomotion diseases, allergy, heart and circulatory diseases, and migraine. More than 40% of the respondents had varicosity (43.5%, 100) and about one third of one of them suffered from some locomotion

diseases (30.7%, 70 respondents). About one fourth of the midwives suffered from allergy (28.1%, 64) or heart and circulatory diseases (26.6%, 61). One fifth of them (20.1%, 46) suffered from migraine. The most frequent disease of the age-group of 20-29 was allergy with about one third of the midwives (35.4%, 17). About one fourth of this age-group suffered from varicosity (25%, 12), locomotion diseases (22.2%, 9), more than 10% of them suffered from migraine (14.6%, 7) and two of them had heart and circulatory diseases (4.2%). In the next three age-groups the most frequent disease was varicosity which showed a rising prevalence: more than 40% (41.8% , 23) of the age-group of 30-39, almost the half (48.1%, 38) of the age-group of 40-49, and more than 60% (61% ,25) of the age-group of 50-65 mentioned this disease. The second most frequent disease in the age-group of 30-39 was allergy which was mentioned by about one third (32.7%, 18) of this age group it. It was followed by locomotion diseases with a prevalence of about 20% (22.2%, 12) and migraine (20.4%, 11). More than 10% of this age-group had heart and circulatory diseases (12.7%, 7). About 30% (33.3%, 26) of the age group of 40-49 reported on heart and circulatory diseases, locomotion diseases (29.1%, 23) and more than 20% of them mentioned migraine (24.1%, 19) and allergy (20.8%, 16). More than half of the age group of 50-65 suffered from locomotion diseases (58.5%, 24), heart and circulatory diseases (56.1%, 23). Besides these the number of those suffering from allergies was also high (29.3%, 12) and the rate of those suffering from migraine was (17.1%, 7).

Table 3 Age-group prevalence of chronic diseases

Prevalence of chronic diseases	Age-group				*p
	20-29 age-group (N=48) N(%)	30-39 age-group (N=59) N (%)	40-49 age-group (N=79) N (%)	50-65 age-group (N=41) N (%)	
varicosity	12 (25.0)	23 (41.8)	38 (48.1)	25 (61)	0.006
heart and circulatory	2 (4.2)	7 (12.7)	26 (33.3)	23 (56.1)	0.000
locomotion diseases	9 (22.2)	12 (22.2)	23 (29.1)	24 (58.5)	0.000
allergy	17 (35.4)	18 (32.7)	16 (20.8)	12 (29.3)	0.276
migraine	7 (14.6)	11 (20.4)	19 (24.1)	7 (17.1)	0.589

*Chi-square test

Outcomes in relation with health behaviour

The majority of midwives do not use anti-depressant (225 respondents, 97.4%) or sleeping pills (221 respondents, 95.7%) or sedatives (210% of respondents, 90.9%). Two thirds of the

midwives (159 respondents, 68.8%) do not smoke, and about half of them (130 respondents, 48.9%) do not drink alcohol. 60% of the midwives regularly consume coffee (138 respondents, 59.7%), nearly 30% of them do smoke, either regularly (42 respondents, 18.2%) or occasionally (29 respondents, 12.6%).

Outcomes in relation with the sense of coherence

In our sample (N=231) the mean value of the sense of coherence was 63.29, the lowest point value was 34 and the highest was 90, the value of deviation showed (SD=10.61). When examining the age-groups there was no significant difference between the mean value of coherence, and the value of variance was p=0.555. With variance analysis the outcomes of Anova test {F(7, 216) = 4,941, p = 0,332}showed the averages of the groups were the same and there was no significant difference in the average values. When examining the level of the sense of coherence in the groups of different school attainment, there was no significant difference. As for the variances they were p=0.363 and examining this with variance analysis the outcomes of Anova test {F(4, 219) = 1,614, p = 0,172} showed that the averages of the groups were the same and no considerable differences were found. When examining the level of the sense of coherence in the groups of different school attainment, differences could not be seen. The outcomes of Chi square test also did not show significant difference between the average values of the groups (p=0.285), and the Fisher exact showed p = 0.236.

The outcomes of correlation examinations regarding the sense of coherence

On the basis of the coherence point of values (SOC points) three groups were formed: low (between 13and 63 points), middle(between 64 and 79 points) and high (between 80 and 91 points).

Examining the correlation between the number of diseases and sense of coherence

The correlation coefficients, done either by parametric (Spearman) or nonparametric (Pearson) methods, showed that there was a significantly negative relation between the sense of coherence and the number of diseases. The value of Pearson correlation coefficient was r = - 0,14; p = 0,035, while the Spearman rho result of non parametric method was r = - 0,135; p = 0,047. Relying on the three groups formed on the basis of coherence values (SOC points), variances were counted, variance analysis was performed, whose outcomes showed significant differences in the number of actual and simultaneous diseases. Variance examination showed p=0.001 and the result of variance analysis was {F (2, 212) = 3,739, p = 0,025}. These results were examined further with post-hoc test and the number of diseases was given as dependant

variable. Traceable and significant differences (p = 0.019) were shown between the groups of low and mid-level of sense of coherence.

Correlation between the sense of coherence and subjective health status, level of stress, and work value

Applying the Spearman rho correlation examination, we found that the correlation coefficient value between subjective health status and the sense of coherence was r = 0.469, the result of T test was p = 0.000, so a strong positive correlation could be seen.

Table 4 The results of correlation examination*

			Stress	**Sense of coherence**	**Work value**	**Subjective health status**
Spearman-rho	**Stress**	Correlation coefficient	1,00	-,359**	-,171**	-,526**
		T-test	.	0,000	0,008	0,000
		N	226	226	197	224
	Sense of coherence	Correlation coefficient	-0,359	1,000	-0,028	**0,469****
		T-test	0,000	.	0,348	**0,000**
		N	226	231	198	228
	Work value	Correlation coefficient	-0,171	-0,028	1,000	0,034
		T-test	0,008	348	.	0,320
		N	197	198	198	197
	Subjective health status	Correlation coefficient	-0,526	0,469	0,034	1,000
		T-test	0,000	0,000	0,320	
		N	224	228	197	228

**(Gebriné et al., 2019)*

***Correlation is significant if p = 0.01*

Correlation between the sense of coherence and leaving work

With the help of multiple linear regression model, we could examine the predictive factors of leaving work where the variables were stress, sense of coherence, work value, and health status. The results showed that from the variables the only one that impacted leaving work was health status. The value of standardised B coefficient was 0.057. Our calculus showed that the lowest point value was 7 while the highest point value was 35 in considering health status. In this case the 28 point change in health status, from the lowest 7 point value to the highest 35 point value, enhanced the intention to not to leave work by 1.6 points (28 * 0.057). The 28-point difference

in health status between the two extremes influenced the intention to leave by 32% difference. In other words these 28 points enhanced the intention to stay by 32%, when the intention of leaving work was measured on a five-grade scale, and where number 1 stood for probably leaving work and number 5 stood for probably staying.

Table 5 The results of multiple linear regression model*

Model		Unstandardized coefficient		Standardised coefficient	t	Sign.
		B	Std.Error	Beta		
1	(variables)	,804	,841		,956	,340
	Stress	-,003	,044	-,005	-,061	,951
	Sense of coherence	,005	,008	,056	,692	,490
	Work value	,000	,003	-,003	-,039	,969
	Health status	**,057**	,017	,286	3,248	**,001**

**(Gebriné et al., 2019)*

DISCUSSION

Our findings in connection with actual work showed that the majority of midwives worked 12 hours in two shifts, and only one midwife marked three shifts. There were midwives working eight or six hours a day in one shift. On the basis of this, we can say that the majority of midwives are exposed to the consequences of multiple shifts, which often have negative impacts on the body and can result in sleeping or eating or concentration disorders, can cause decreased energy level and damaging behaviour as well. When interpreting them as stress, and if they are permanent, they can trigger the development of diseases. The findings of analysing questions in connection with physical environment showed that almost half of the midwives were satisfied with their work conditions, one third of them were less satisfied, while one fourth of them thought that their physical environment caused troubles. Almost half of the respondents were afraid of being involved in occupational accidents. The average of the dimension of the workplace strain showed the highest value which was followed by the average values of the dimensions of control and support. On the basis of D-C model 28% of the respondents were in the group of high tension, though this rate decreased to 18.78% when, on the basis of D-C-S model, the dimension of support was also involved. This group can be considered as the most endangered one regarding mental and general well-being, too. In this case, actual work serves

as a risk factor in the process of giving response to mental stress and also contributes to physical diseases (*Karasek, 1979, Johnson and Hall, 1988).*

In a 2015 survey, 39% of the nurses thought that the opportunities of improvement and promotion were very good at their workplace (*Újváriné et al., 2015*). However, midwives in our research thought that there was no or hardly any chance to build their career or get promoted. Despite of all these they enjoyed their job and thought it was inspiring, and the majority of them (61%) felt completely satisfied as a midwife.

Regarding work values, generation differences could be seen because for generation Y hierarchy and collegial relations were the most preferred value circles, but for generation X independency, financial issues and physical environment were the most important value circles. The most frequent disease among midwives was varicosity (43.5%), followed by locomotion diseases (30.7%), which actually appeared in 1/4 of the younger generation. The prevalence of varicosity was 60% in the oldest age group and there was a significant rise in the number of actual and simultaneous diseases in the age-group of 40-49, while in the oldest generation three or four different chronic diseases existed at the same time.

Subjective health status was considered as a predictive factor of leaving work. If the health status was excellent with a high score, the intention to leave career decreased by 32%.

Age and the level of school attainment did not influence the level of sense of coherence. However, low sense of coherence could predict the probability of diseases or disability (*Eriksson and Lindström, 2005; Suomine et al., 2011*). There was a strong positive correlation between subjective health condition and sense of coherence (r = 0,469, t-test p = 0,000). As a result of actual and simultaneous diseases the sense of coherence decreased. Better health status increased the sense of coherence.

SUGGESTIONS

Suggestions in connection with the workplace environment

- To improve workplace environment the three principles of Family Friendly workplace for midwives (Official Health Journal 2019) provide a good opportunity. As a result of them the everyday life of maternity ward has already seen some changes and presumably the renovation and modernisation at the gynaecological departments will have a positive impact on actual work because it provides a more inspiring physical environment.

Attitude towards work

- It is definitely worth insuring and providing nurses and midwives with adequate support which can contribute to reduce stress caused by strain and control. Therefore midwives can work in a healthy work environment, which, in my view, can promote their professional improvement, studying, and participating in the conferences.
- It would be great to survey midwives' opinion every second or third year in order to get a better view on how much they are satisfied with their physical environment, available devices and opportunities, the atmosphere of the workplace, also to be aware with their demands. The findings of these surveys should be taken into consideration in decision-making.
- It is important to continue research into the causes of leaving work early or the intention to change workplace. By revealing them, the factors that lead to leaving work could be modified early on.
- Because of the low number of midwives, the workload and strain midwifery profession increase. That is why it is important to ensure that there shall be newcomers in this profession. On the one hand the work of midwives should to be attractive for young people, on the other hands dropouts from higher education institutions should decrease, and students who lag behind should be tutored. Moreover, the career of graduates should be followed.
- An essential step could be the launch of a midwife career model. Firstly, we need to ask about the motivation for choosing midwife profession both from midwives and midwife students. It would be important to identify the causes to leave work and the factors that can support midwives to stay. Promotion and financial appraisal are also important, which could stop leaving work, and also could motivate youngsters to choose this career.

Work value appraisal

- In order to manage conflicts at workplace leaders should know about generation differences. This could help decision-making, creating career plans and the ways of promotion as well. It might happen that for generation X the lack of promotion triggers the intention to leave work or change work place. A starting point of further research could be a survey on how work values change during the training period of midwives, and whether they correlate with the number of field practice hours that was increased, and to see how their view on midwifery changes while they are getting deeply involved in the profession.

How to improve health status

- The starting point of further research could be the examination of other components of healthy lifestyle such as diet and regular physical activity or taking part in screening.

- A great part of non-contagious chronic diseases can be prevented so it is worth paying attention to prevention and to address the younger age-groups with preventive activities. The yearly occupational check-ups could be expanded with screenings, survey of the health status for which modern software, together with body fat analysis and BMI index, is available for the experts. With the help of them tailor made health promotion and prevention counselling could be done in practice, too.
- The prevention of locomotion diseases coming from actual work should be highlighted and the international professional suggestions should be taken into consideration. These ones are in connection with moving the patient, lifting the patient, lifting material, mothers' delivering in water or in other special body positions, or what kind of comfort devices could be used. In addition it would be great to teach the types of ergonomic movement, the rules of actual work at the very beginning of a midwife's career.
-As a primary prevention ergonomic movements should be part of the BSc midwife training. Besides the general health status check up it is important to develop their physical and mental health as well. Our findings have shown that if their health status is improving it will impact their intention to stay.
- It is also important to ensure recreation opportunities for midwives, for instance going on trips together, doing sports or free time activities together or team building could be a good practice in hospitals. Another good practice could be if health professionals had the chance to go to gym at a reduced price. In order to realize them, local demands should be collected and harmonise them with the available facilities.
- It is important to teach midwives how to handle stress. The first step is to make a survey, examine their coping mechanism and the type of control (internal or external control as a dominant factor) and finally to examine self assessment. The next step could be teaching tailor made stress management techniques or methods and also providing a chance to acquire them. On the basis of our research we can say that a high proportion of midwives 30% do smoke either regularly or occasionally. If we want to set a good example for pregnant women or clients and patients, then the level of smoking midwives should be decreased. That is why I think it is absolutely important to help them to quit smoking and apply preventive methods.
- It is important to send the findings of our research back to the hospitals, meet the responding midwives who took part in our research and provide occasions for discussions between midwives and midwives in positions, nursing directors, and so on and to check how open they are towards changes and new possibilities.

NEW SCIENTIFIC RESULTS

In Hungry, research into job satisfaction, sense of coherence and work value among midwives has not been done so far, therefore our research can be regarded as relevant, advanced and a gap filler, too. Defining all our research highlights the importance of support add for a place by which both physical and mental stress impacting midwives could be reduced and consequently the number of diseases to

- Health status has been identified as a significant factor influencing the intention to leave work.

- In the age group of elderly midwives the number of diseases like varicosity, heart and circulatory disorders as well as locomotion diseases has increased.

- Even 1/4 of the youngest age-group is exposed to varicosity and the locomotion disorders.

- In the age-group of 40-45 the number of actual and simultaneous diseases significantly has decreased, and midwives of 50 to 65 years of age have been suffering from three or four different chronic diseases at the same time.

- Altruism has been identified as the most important value circle in the midwifery profession, which is independent from age and school attainment. When examining other work value circles we have found differences between age groups and school attainment.

- The level of sense of coherence is not influenced either by age or school attainment although the sense of coherence is strictly correlated with self assessed subjective health status.

ACKNOWLEDGEMENT

I would like to express my gratitude to Dr. habil Kinga Lampek and Dr. Andrea Sárváry. I also want to express my gratitude to Dr. Peter Takács who helped me with statistical analysis. I want to thank all my colleagues who have helped my work and publishing activity especially Dr. Attila Sárváry and Dr. Miklós Zrínyi.

I feel grateful for the patience of my family, my husband and my children. Last but not least I want to thank all the midwives for their answers which contributed to my research. I also want to express my appreciation for the heads of divisions in hospitals who helped me to disseminate and collect the questionnaires.

PUBLICATIONS THE THESIS IS BASED ON

1. **Gebriné Éles Krisztina**, Lampek Kinga (2015): A szülésznők munkával való elégedettségének és a munkával kapcsolatos értékmegítélésének összehasonlító országos vizsgálata, A IX. Nyíregyházi Doktorandusz (PhD, DLA), Nyíregyháza, Konferencia kötet: ISBN: 987-615-5073-75-5
2. **Gebriné Éles Krisztina,** Takács Péter, Lampek, Kinga (2016): A szülésznők munkával való elégedettségének és a munkával kapcsolatos értékmegítélésének összehasonlító országos vizsgálata, In: S n (szerk.) X. Jubileumi Nyíregyházi Doktorandusz Konferencia, Nyíregyháza, Debreceni Egyetem Egészségügyi Kar, (2016) p. 6
3. **Gebriné Éles Krisztina,** Heinrichné Kőszegi Katalin (2016): "A munka mint érték" - munkaérték preferencia vizsgálat szülésznők és szülésznő hallgatók körében, A XXIV. Országos Szülésznői Konferencián elhangzott előadás., Konferencia helye: Székesfehérvár, Konferencia ideje: 2016. május 27-28.,
4. **Gebriné Éles Krisztina**,Takács Péter, Sárváry Andrea,Heinrichné Kőszegi Katalin, Lampek Kinga (2017): A szülésznők munkával való elégedettségét befolyásoló tényezők vizsgálata*, EGÉSZSÉG-AKADÉMIA* 8 (3) 156-167.
5. **Gebriné Éles Krisztina,** Takács Péter, Kósa Zsigmond, Heinrichné Kőszegi Katalin, Lampek Kinga (2017): A szülésznők munkával való elégedettségének és a munkával kapcsolatos értékmegítélésének összehasonlító országos vizsgálata , *ACTA MEDICINAE ET SOCIOLOGICA* 8 (24) 41-58.
6. **Gebriné Éles Krisztina**, Takács Péter, Heinrichné Kőszegi Katalin, Lampek Kinga (2017): Krónikus betegségek előfordulása szülésznők körében *NÉPEGÉSZSÉGÜGY* 95: 2 p. 124 (2017)
7. **Gebriné Éles Krisztina,** Heinrichné Kőszegi Katalin, Lampek Kinga (2017): A szülésznők élethelyzete, egészsége napjainkban - kutatás bemutatása In: Dávid, Beáta; Feith, Helga Judit; Lukács, Ágnes; Susánszky, Éva (szerk.) Ártó-Védő Társadalom Konferencia és XV. Magatartástudományi Napok: Absztrakt könyv Budapest, Semmelweis Egyetem Egészségtudományi Kar, (2017) pp. 37-38.
8. **Gebriné Éles Krisztina,** Lampek Kinga (2018): Munkaérték preferencia vizsgálata szülésznők és szülésznő hallgatók körében- kutatás részeredményeinek bemutatása,In: Verdes, Miklós (szerk.) A IX. Nyíregyházi Doktorandusz (PHD/DLA) Konferencia

kiadványa, Nyíregyháza, Szent Atanáz Görög Katolikus Hittudományi Főiskola, (2018) 59-62.

9. **Gebriné Éles Krisztina**, Sárváry Andrea, Sárváry, Attila, Takács Péter, Lampek Kinga (2018): A kórházban dolgozó szülésznők munkaérték preferencia vizsgálata, *NŐVÉR* 31 (4) 20-28.
10. **Gebriné Éles Krisztina,** Sárváry Andrea, Sárváry Attila, Takács Péter, Lampek Kinga (2018): Munkaérték preferencia vizsgálata szülésznők és szülésznő hallgatók körében *NÉPEGÉSZSÉGÜGY* 96: 2 p. 115 (2018)
11. **Gebriné Éles Krisztina**, Sárváry Andrea, Sárváry Attila, Takács Péter, Heinrichné Kőszegi Katalin, Rákóczi Ildikó, Zrinyi Miklós, Lampek Kinga (2018): A szülésznők egészségi állapotának vizsgálata a koherencia érzet függvényében-kutatás bemutatása, Nemzetközi Szülészeti Konferencia, 2018.december 6-7-8. Budapest
12. **Gebriné Éles Krisztina**, Takács Péter, Sárváry Andrea, Lampek Kinga (2019): A szülésznők szubjektív egészségi állapota, krónikus betegségek előfordulása körükben, egészségmagatartásuk főbb jellemzői, XIII.Nyíregyházi Doktorandusz Konferencia, Debreceni Egyetem Egészségügyi Kar, 2019, december 05.
13. **Gebriné Éles Krisztina**, Sárváry Andrea, Takács Péter, Rákóczi Ildikó, Kőszegi Katalin, Lampek Kinga (2019): A szülésznők munkával való elégedettségének vizsgálata, XXVI.Országos Szülésznői Konferencia, Galyatető,2019.május 23-25
14. **Gebriné Krisztina Éles**, Lampek Kinga, Sárváry Andrea, Sárváry Attila, Takács, Péter, Zrínyi Miklós (2019): Impact of sense of coherence and work values perception on stress and self-reported health of midwives *MIDWIFERY* 77. 9 - 15. doi.org/10.1016/j. midw.2019.06.006