Differential aspects of chronic work-related stress predict depression in registered and geriatric nurses

A cross-sectional study

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Abstract: *Background:* Chronic work stress is a problem which persists among nurses for several reasons and studies suggest that both levels of stress and depression remain on an ongoing high level. However, not much is known about the impact of differential aspects of chronic work-related stress on levels of depression when investigating geriatric and registered nurses. *Aim:* The aim of this study was to analyse the relationship between various aspects of chronic work stress and levels of depression in geriatric and registered nurses. *Methods:* A cross-sectional online survey among 370 nurses was carried out. Besides demographic information, several aspects of chronic work stress were assessed with the Trier Inventory of Chronic Stress and levels of depression with the Beck Depression Inventory-II. Statistical analyses included multiple linear regression. *Results:* Most important work-related predictors of depression scores in nurses were 'Work dissatisfaction' ($\beta = .237$; 95 %-CI: [.194; .280]) and 'Work overload' ($\beta = .161$; 95 %-CI: [.124; .198]) within blockwise multiple regression analysis. A previously diagnosed psychiatric disorder ($\beta = -.268$; 95 %-CI: [-.313; -.223]) proved to be the strongest predictor of nurses' depression experience. Our model explained 37 % of variance in depression scores. However, being a geriatric or registered nurse did not predict levels of depression. *Conclusions:* Different aspects of chronic work stress seem to be associated with levels of depression in nurses. This should be taken into account when working on the improvement of working conditions for nurses.

Keywords: Occupational stress, job satisfaction, depression, workload

Unterschiedliche Aspekte von chronischem arbeitsbezogenen Stress ermöglichen die Vorhersage von Depression bei Kranken- und Altenpflegefachpersonen – Eine Querschnittsstudie

Zusammenfassung: *Hintergrund:* Aus verschiedenen Gründen ist chronischer Arbeitsstress ein andauerndes Problem bei Pflegefachpersonen und in Studien finden sich hohe Werte an Stress und Depression. Allerdings ist wenig darüber bekannt, welche Auswirkungen spezifische Aspekte von chronischem Arbeitsstress auf Depression bei Angestellten der Kranken- und Altenpflege haben. *Ziel:* Das Ziel der Studie war es, den Zusammenhang verschiedener Aspekte von chronischem Arbeitsstress und Depression bei Pflegefachpersonen der Kranken- und Altenpflege zu untersuchen. *Methoden:* Eine Querschnittsstudie wurde online unter 370 Pflegefachpersonen durchgeführt. Neben demografischen Informationen wurden verschiedene Aspekte von chronischem Arbeitsstress mit dem Trierer Inventar zum Chronischen Stress und Depressionswerte mit dem Beck Depressions-Inventar II erhoben. Als statistische Methode wurde die multiple lineare Regression eingesetzt. *Ergebnisse:* Als stärkste arbeitsbezogene Prädiktoren für die Depressivitätsgenese bei Alten- und Krankenpflegefachpersonen erwiesen sich „Unzufriedenheit mit der Arbeit“ ($\beta = 0,237$; 95 %-CI: [0,194; 0,280]) und „Arbeitsüberlastung“ ($\beta = 0,161$; 95 %-CI: [0,124; 0,198]) innerhalb der blockweisen multiplen Regressionsanalyse. Das Vorliegen einer diagnostizierten psychiatrischen Störung war ($\beta = -0,268$; 95 %-CI: [-0,313; -0,223]) der beste Prädiktor für das Depressionserleben der Pflegefachpersonen. Unser Modell erklärte 37 % der Varianz in den Depressionswerten. Allerdings hatte die Zugehörigkeit zu den Alten- oder Krankenpflegefachpersonen keine Vorhersagekraft. *Schlussfolgerungen:* Unterschiedliche Aspekte von chronischem Arbeitsstress scheinen mit den Depressionswerten bei Kranken- und Altenpflegefachpersonen assoziiert zu sein. Dieser Aspekt sollte Berücksichtigung finden, wenn an einer Verbesserung der Arbeitsbedingungen für Pflegefachpersonen gearbeitet wird.

Schlüsselwörter: Beruflicher Stress, Arbeitszufriedenheit, Depression, Arbeitsbelastung

What is already known about the topic?

Nurses suffer from stress and symptoms of mental disorders related to specific working conditions.

What is new?

Certain aspects of chronic work stress, particularly 'Work dissatisfaction' revealed to be the strongest predictor of depression scores, followed by 'Work overload'.

What are the practical implications?

Employers in the health care setting should implement methods which are tailored to the specific challenges of geriatric and registered nurses in order to decrease work stress.

Introduction

According to current estimates of the German Economic Institute, the German healthcare system might well be up to 500,000 nurses short by the year 2035 (IW Koeln, 2018). At the moment, in addition to a shortage of registered nurses, numbers of geriatric nurses also seem to be particularly low (Bundesagentur für Arbeit, 2020).

Furthermore, many other healthcare systems suffer from similar afflictions (Ausserhofer, 2014; Buchan, 2002; Drennan & Ross, 2019; Marc, Bartosiewicz, Burzynska, Chmiel & Januszewicz, 2019). This shortage is not only a huge disadvantage for societies and people in need of care. Additionally, it is especially burdensome for those who provide care – nursing professionals. Even though more nurses are needed in the future, several aspects might lead to intentions of leaving the nursing profession (Burmeister et al., 2019; Chan, Tam, Lung, Wong & Chau, 2013; Heinen et al., 2013; J. Li et al., 2011; Nantsupawat et al., 2017; Sasso et al., 2019). Unfortunately, only few studies focused on German nurses (Rohwer, Mojtahedzadeh, Harth & Mache, 2020).

With poor remuneration being an obvious reason, work-related stressors and low job satisfaction are associated factors which are equally to blame (Chang, Yu & Chao, 2019; Ghawadra, Abdullah, Choo & Phang, 2019b; Sehlen et al., 2009). With nursing being a considerably stressful occupation, it might consequently jeopardize the mental health of those who work in this field (H. Li, Cheng & Zhu, 2018; Mark & Smith, 2012). The consequences are manifold and include comparably more days of absenteeism in nurses due to sick leave in Germany as well as in other countries (Burmeister et al., 2019; World Health Organization, 2018). There seems to be a positive correlation between mental health problems and the number of days nurses and midwives are absent (Lamont et al., 2017). Further studies suggest that work-related stress in nurses might lead to psychosomatic disorders, insomnia, fatigue or the abuse of drugs, medications and alcohol (Gu, Tan & Zhao, 2019; Kunyk, 2015; Rohwer et al., 2020; Schmidt, Dichter, Bartholomeyczik & Hasselhorn, 2014; Tsai, Lee & Chung, 2017; Worley, 2017; Zhang, Zhang, Han, Li & Wang, 2018).

Similarly, a considerable number of studies focused on the development of burnout and depression in nurses and

nursing students (Duan-Porter et al., 2018; Maharaj, Lees & Lal, 2018; Melnyk et al., 2018; Nelson, Menzel & Horoho, 2017; Roelen et al., 2018; Tung, Lo, Ho & Tam, 2018; Weigl et al., 2016). In registered nurses employed in hospitals the depression rate was found to be up to 18% which is nearly twice the rate of the general population (Letvak, Ruhm & McCoy, 2012). Recently, it could even be shown that the number of suicides among nurses is much higher when compared to the general population (Davidson, Proudfoot, Lee, Terterian & Zisook, 2020).

Nonetheless, possible predictors of depression and burnout amongst nurses have yet to be fully understood. However, several studies suggest the impact of chronic work stress on the etiology of depression in nurses (Huang, Wu, Ho & Wang, 2018; Mbanga et al., 2019; Vasconcelos & Martino, 2018; Vasconcelos, Martino & Franca, 2018). Surprisingly, only few studies have assessed stress-related factors in the working environment of geriatric nurses. In addition to physical strain, first results highlight the impact of psychological stressors like time pressure and pressure to perform. Despite first results it remains ambiguous as to whether different aspects of work account for diverging patterns of stress between registered and geriatric nurses (Nubling et al., 2010; Pelissier et al., 2015; Wollesen et al., 2019).

Aims

Thus, the aim of this cross-sectional study was to identify and examine the associations between the experience of chronic work stress and depressive states in registered and geriatric nurses. For this purpose, we hypothesized that nurses who encounter higher chronic work stress would experience more pronounced depressive states.

Methods

Study sample

Registered and geriatric nurses were recruited online in a German-speaking convenience sample between April 2017 and June 2017. Geriatric nurses were working either in nursing homes or geriatric wards in hospitals. The study was advertised on Facebook groups on nursing. A total of 403 nurses gave written consent to follow the study protocol. After written informed consent was obtained, participants were offered use of the German Telephone Counseling if needed. Due to drop-out, completed questionnaires of only 385 nurses (N = 326 women) could be obtained. Finally, the study population consisted of 182 registered nurses, 188 geriatric nurses and 15 subjects working in other healthcare professions. To provide homogenous groups, the aforementioned 15 subjects were excluded from further analyses. In all groups, subjects were excluded a priori via self-report if they were not actually working as a nurse,

were younger than 18 years or had insufficient German language skills.

Study design

Nurses were invited to participate online in a study on their psychological well-being. Data were collected via self-report questionnaires on demographic variables, characteristics of current employment, the experience of chronic work stress and depression. The platform used was EFS survey from QuestBack Unipark. Cross-sectional data included a self-administered questionnaire regarding demographic information and occupational conditions as well as questionnaires assessing depression and chronic work stress.

Outcome measures and data collection

Beck Depression Inventory II (BDI-II)

Since we wanted to assess the severity of depression, the BDI-II was used. The BDI-II is a well-established self-report measure consisting of 21 items to assess cognitive, affective and somatic symptoms of depression in the week prior to assessment. Each item offers a choice of four ordinal statements which reflect an increasing range of severity, ranging from 0 to 3, with a total possible score range from 0 to 63. Scores above 29 indicate clinically significant depression, whereas scores from 9 to 28 mark mild to moderate depression. Non-depressed persons or patients in remission typically exhibit scores < 8 (Hautzinger, Keller & Kühner, 2006).

Trier Inventory of Chronic Stress (TICS)

To assess if subjects experienced chronic work-related stress within three months prior to the study, the TICS was used as a self-report measure. The TICS originally includes 57 items.

Since the TICS can be subdivided into nine subscales, only the following work-related scales were used: work overload, pressure to succeed, work dissatisfaction, excessive demands and lack of acceptance. Subjects are asked to assess how frequently (from “0 = never” to “4 = quite often”) they experienced stressful situations as described in the items of the questionnaire. Higher scores reflect more pronounced chronic stress. For further analyses the scores were transferred into T-values (Petrowski, Paul, Albani & Brahler, 2012; Schulz, Schlotz & Becker, 2004).

Statistical analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences version 25 for windows (SPSS, Chicago, IL, USA). Some variables showed a deviation from normal distribution. However, the methods we used are resistant to violations of the normality assumption, especially due to the high number of cases (Cohen, 1968). Thus, statistical analyses were based on parametric testing. Differences between geriatric and registered nurses in demographic and psychological variables were analyzed employing t-tests for independent samples. Furthermore, multiple linear regression analyses (blockwise) were conducted to explore factors affecting the BDI-II total score (Horton & Fitzmaurice, 2004). The standardised coefficient Beta was used to discriminate the effect size of the effect of each factor. The level of statistical significance was set at $p < .05$. Results are displayed as mean (M) and standard deviation (SD).

Ethical approval

The study protocol has been approved by the Ethics Review Board of the Hochschule Fresenius, University of Ap-

Table 1. Participants' work-related characteristics

Personal characteristics	Total sample (n = 370)	Geriatric nurses (n = 188)	Registered nurses (n = 182)	Test of significance
Qualification status (% of qualified nurses)	92.2 %	89.4 %	95.1 %	.042
Working time:				
Contractual	M = 35.7; SD = 6.9	M = 35.7; SD = 6.6	M = 35.7; SD = 7.2	n.s.
Overtime hours (per week on average)	M = 4.7; SD = 7.4	M = 5.9; SD = 9.7	M = 3.7; SD = 3.3	$p < .01$
Absenteeism:				
Number of sick days during last 12 months	M = 16.3; SD = 26.1	M = 16.7; SD = 25.6	M = 15.8; SD = 26.6	n.s.
Percentage: more than 30 sick days during last 12 months	11.6 %	13.3 %	9.9 %	n.s.
Health status:				
Percentage: chronic disease (medically diagnosed)	41.6 %	43.1 %	40.1 %	n.s.
Percentage: psychiatric disorder (medically diagnosed)	18.6 %	18.1 %	19.2 %	n.s.
Percentage: actually in psychotherapeutic treatment	5.9 %	5.9 %	6.0 %	n.s.

plied Sciences and was performed in accordance with the declaration of Helsinki. All eligible subjects received written information about the study objectives and were informed about the possibility to drop out of the study at any time. All participants gave informed consent to the researchers before filling in the questionnaire.

Results

Sample characteristics

Of the 370 persons who participated in our study, 188 (48.8 %) were geriatric nurses and 182 (47.3 %) were registered. The participants included 314 (84.9 %) women and 56 (15.1 %) men, ranging in age from 18 to 63 ($M = 35.9$, $SD = 11.4$). 178 (48.1 %) participants had a secondary school certificate, 165 (44.6 %) a high school graduation; 27 (7.3 %) persons completed lower secondary school.

To provide further information on work-related characteristics, additional items included qualification status, working time (contractual, overtime hours), days of absenteeism and subjective health status. For this, we differentiated between geriatric nurses and registered nurses. As Table 1 shows, overtime hours (per week on average) were significantly higher for geriatric nurses than for registered nurses. Similarly, the number of sick days during last year as well as the percentage of medically diagnosed chronic diseases were slightly higher for geriatric nurses than for registered nurses but the difference did not reach statistical significance.

Group comparison of scores for BDI-II and TICS

The 370 respondents' BDI-II and TICS scores (total and subdimension scores) are depicted in Table 2, differentiating between geriatric and registered nurses.

For the BDI-II total score we found that depressive symptoms were higher for geriatric than for registered

nurses, although not significantly ($t(368) = 1.406$, $p = .161$). Looking at the subdimensions of TICS, only a significant difference between both occupational groups could be seen for 'Pressure to succeed', which was significantly higher for registered nurses than for geriatric nurses ($t(368) = -2.142$, $p < .05$). Considering the subdimension 'Lack of acceptance', mean values were nearly on a similar level between both occupational groups ($t(368) = .218$, $p = .827$). Furthermore, 'Work dissatisfaction' resulted in a slightly higher score for registered than for geriatric nurses ($t(368) = -1.244$, $p = .214$). On the other hand 'Work overload' ($t(368) = 1.059$, $p = .290$) and 'Excessive demands' ($t(368) = 1.060$, $p = .290$) reached slightly higher scores in the group of geriatric nurses.

The association of chronic work stress and depressive symptoms

In a subsequent step we ran multiple regression analyses (blockwise) in order to explain depressive symptoms by subdimension scores of the TICS and to control for sociodemographic and job-related variables. In the first block we included number of sick days during last year, average working time, overtime hours, occupational group (registered vs. geriatric nurses), age, sex, educational level, qualification status as well as presence of a diagnosed psychiatric disorder. In the second block we added the five TICS subdimensions. Table 3 shows the results of this analysis for the whole sample. The multiple linear regression model explained 18.4 % (adjusted R^2 : 16.4 %) of BDI-II total score's variance through sociodemographic and job-related variables ($F = 8.91$, $p < .001$). Herein, the following components revealed to be significant: age ($\beta = -.110$, $p < .05$; 95 %-CI: $[-.142; -.078]$) and presence of a diagnosed psychiatric disorder ($\beta = -.363$, $p < .01$; 95 %-CI: $[-.412; -.314]$).

By adding the second variable block that comprised the subdimensions of TICS, 39.5 % of variance (adjusted ΔR^2 : 37.0 %) could be explained ($F = 16.30$, $p < .001$). The components age ($\beta = -.110$, $p < .05$; 95 %-CI: $[-.142; -.078]$) and presence of a diagnosed psychiatric disorder ($\beta = -.268$, $p < .01$; 95 %-CI: $[-.313; -.223]$) were also significant predic-

Table 2. Total and sub-dimension scores of the BDI-II and TICS

	Total sample (n = 370)		Geriatric nurses (n = 188)		Registered nurses (n = 182)		Test of significance	
	M	SD	M	SD	M	SD	t-value	p-value
BDI II-II:								
Total Score	15.02	10.18	15.75	10.29	14.26	10.04	1.406	.161
TICS:								
Work overload	3.30	.84	3.34	.90	3.25	.78	1.059	.290
Pressure to succeed	3.11	.77	3.02	.78	3.19	.76	-2.142	.033
Work dissatisfaction	2.65	.72	2.61	.74	2.70	.70	-1.244	.214
Excessive demands	2.44	.76	2.48	.80	2.39	.71	1.060	.290
Lack of acceptance	3.22	.99	3.23	.99	3.21	.98	.218	.827

Notes: Higher scores indicate higher levels of depression and chronic stress; BDI-II = Becks Depression Inventory-II; TICS = Trier Inventory of Chronic Stress.

Table 3. Multiple linear regression model (blockwise) for the prediction of the BDI-II total score through socio-demographic and job-related background variables (first block) and subdimensions of TICS (second block)

Total sample (n = 370)	First block (without TICS)				Second block (with TICS)			
	Regression coefficient β	t-value	p-value	95% Lower limit	95% Upper limit	Regression coefficient β	t-value	p-value
Constant		5.504	.000				2.116	.035
Number of sick days during last 12 months	.066	1.319	.188	.040	.092	-.036	-.809	.419
Average working time	.052	1.050	.294	.029	.075	-.007	-.163	.871
Overtime hours	.035	.695	.487	.016	.054	.027	.608	.544
Occupational group ^a	-.054	-1.037	.300	-.077	-.031	-.049	-1.071	.285
Age	-.110	-2.224	.027	-.142	-.078	-.110	-2.554	.011
Sex ^b	.113	2.303	.022	.081	.145	.084	1.948	.052
Educational level	-.051	-.993	.321	-.073	-.029	-.061	-1.351	.178
Examination status ^c	-.014	-.291	.771	-.026	-.002	-.050	-1.165	.245
Psychiatric disorder ^d	-.363	-7.194	.000	-.412	-.314	-.268	-6.003	.000
Work overload						.161	2.383	.018
Pressure to succeed						.042	.770	.442
Work dissatisfaction						.237	4.263	.000
Excessive demands						.105	1.685	.093
Lack of acceptance						.056	.955	.340
Percentage of explained variance (adjusted)	18.4 %					39.5 %		
	16.4 %					37.0 %		

Notes. BDI-II = Beck's Depression Inventory-II; TICS = Trier Inventory of Chronic Stress ^aOccupational group (1 = geriatric nurses, 2 = registered nurses), ^bSex (1 = male, 2 = female), ^cExamination status (1 = without examination, 2 = with examination), ^dPsychiatric disorder (1 = without diagnosed psychiatric disorder, 2 = diagnosed psychiatric disorder).

tors in the second block. Two subdimensions of the TICS proved to be significantly associated with BDI-II total score: 'Work overload' ($\beta = .161, p < .05$; 95 %-CI: [.124; .198]) and 'Work dissatisfaction' ($\beta = .237, p < .001$; 95 %-CI: [.194; .280]). The subdimension 'Excessive demands' ($\beta = .105, n.s.$; 95 %-CI: [.074; .136]) failed to reach statistical significance. Furthermore, 'Pressure to succeed' ($\beta = .042, n.s.$; 95 %-CI: [.022; .062]) as well as 'Lack of acceptance' ($\beta = .056, n.s.$; 95 %-CI: [.033; .079]) did not reach significance.

Discussion

This study revealed that dimensions of chronic work stress were associated with levels of depression in a convenience sample of registered and geriatric nurses. Blockwise multiple regression analyses revealed that along with age and preexisting psychiatric disorders, scores on the scales 'Work overload' and 'Work dissatisfaction' explained 37 % of variance in depression levels. In the sample at hand, younger nurses were more vulnerable to depressive states. This also applies for nurses with previously diagnosed psychiatric disorders. The variable psychiatric disorders was even the strongest predictor for depression scores in both analyses. This result is not surprising. About 19 % of participants were diagnosed with a psychiatric disorder and 64 of these participants indicated depression as a primary or secondary diagnosis.

However, neither being a registered versus a geriatric nurse nor overtime hours were significantly associated with the prediction of depression scores. Also, the variables number of sick days in the last 12 months, average working time, educational level and qualification status did not reach significance.

Our results are in line with previous results proving an association of low job satisfaction and high levels of depression (Ghawadra et al., 2019b). Since data on the connection of job satisfaction and the intention to leave in nurses are scarce, the knowledge

gained in our study might help to detect possible mechanisms in future surveys (Han, Carter & Champion, 2018). The experience of a heightened workload as indicated by the TICS scale 'Work overload' in registered and geriatric nurses is of utmost relevance. Previous results highlight the decrease in nursing quality during times of exceeding workloads (Chang et al., 2019; Liu, Lee, Chia, Chi & Yin, 2012). Since high quality of care provides safety for patients, there is a need for healthcare employers to be able to assess nurses' individual thresholds for work overload.

Strengths, limitations and directions for the future

The inclusion of registered and geriatric nurses in our study on chronic work stress and depression can be seen as particularly positive. Another strength of the study is the differentiated examination of the impact of work related stress on depression.

Some limitations need to be considered when assessing the results of this study. Our study consisted of online self-report questionnaires in a convenience sample. Because all our measures were captured via self-report, we could not rule out the potential bias through common method variance. Nurses who have a tendency to use social media might be overrepresented and it remains unclear if the sample represents the population (Sousa, Zauszniewski & Musil, 2004). Additionally, for a clinical diagnosis additional ratings from a clinician or interviews are considered to be the gold standard (Aalto, Elovainio, Kivimäki, Uutela & Pirkola, 2012; Uher et al., 2012). However, to provide large numbers of participants and to prevent overstraining of nurses we opted for self-assessment via an online-tool.

Furthermore, we only gathered data on levels of chronic work stress and depression. Other studies additionally focused on burnout (Duan-Porter et al., 2018; Huang et al., 2018; H. Li et al., 2018; Maharaj et al., 2018; Mbanga et al., 2019; Nantsupawat et al., 2017; Vasconcelos & Martino, 2018; Vasconcelos et al., 2018). To date the concept of burnout is the subject of an ongoing debate and might fail to predict (sub-)clinical states of depression (Bianchi, Schonfeld & Laurent, 2015a, 2015b; Schonfeld & Bianchi, 2016). Hence, we decided to focus primarily on depression.

As we conducted a cross-sectional study no causal relationship can be established from our results. To establish a clearer relationship between certain aspects of work-related stress and depression, using a longitudinal design in future studies might be a methodological advantage. Hopefully this will bring additional insight as to which kind of stress reduction programs lead to a reduction in levels of depression.

Practical implications

Given the fact that the findings of our study are confirmed in longitudinal studies, we suggest the following recom-

mendations. As has been shown in previous studies, work dissatisfaction seems to be a relevant problem in the working context of nurses and might lead to intentions of leaving the nursing profession (Ghawadra et al., 2019b; Han et al., 2018). Therefore, future studies need to address adequate measures to improve occupational conditions for nurses. Possibilities are twofold: First, general aspects of working conditions like payment, longer recovery times or the nurse-to-patient ratio should be revised (Drach-Zahavy & Marzuq, 2013; Ruotsalainen, Verbeek, Marine, & Serra, 2015). Second, interventions focusing on psychological wellbeing and the promotion of intra-individual competencies to cope with adverse situations might help to prevent unfavorable effects of stress at the workplace. Even though recent studies suggest using mindfulness (in interventions like the Mindfulness-based stress reduction), these measures might not be specific enough to reduce work stress and depression levels (Ghawadra, Abdullah, Choo & Phang, 2019a; van der Riet, Levett-Jones & Aquino-Russell, 2018). In our opinion more targeted interventions need to be applied taking the different experiences of chronic work stress of registered and geriatric nurses into account. The reduction of work stress might not only increase work satisfaction, but also alleviate symptoms of depression. In this regard it seems inevitable to include strategies for suicide prevention in nurses (Davidson, Accardi, Sanchez, Zisook & Hoffman, 2020; Davidson, Proudfoot, et al., 2020). Similarly, nurses may need low-threshold psychological counseling, selective training to cope with stress-related issues or mental health problems. The aforementioned measures should be included in the education of nurses. This is especially true for Germany, where vocational training is currently being replaced with nursing degrees from universities and universities of applied sciences (Darmann-Finck & Reuschenbach, 2018).

Conclusions

Being exposed to work-related stress seems to be inevitable in healthcare settings and has been shown to be associated with a decrease of mental health in nurses. Our findings suggest that chronic work stress might indicate levels of depression in nurses. In particular, work overload and work dissatisfaction were the strongest work-related predictors for depression in registered and geriatric nurses. The results emphasize that extrinsic and intrinsic working conditions for nurses need to be reshaped in order to attain work satisfaction. Moreover, a new perspective was gained by the fact that depression in registered and geriatric nurses was to some extent predicted by different aspects of work stress. There seems to be a paucity on studies taking different kinds of nurses and different occupational conditions into account. Thus, more empirical studies are needed to explore the differences in the experience of chronic work stress between different groups of nursing. Since working conditions are currently subject to a massive change due to

the ongoing Covid-19 pandemic, the physical and especially mental health need to be protected by governments as well as health care providers. Therefore, future studies should focus on the potential deterioration of work circumstances in nursing due to the Covid-19 pandemic.

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What was the biggest challenge within your study?

Designing a survey which is economic but offers the possibility to gain enough information.

How could the topic be developed any further?

Standardized questionnaires should be used to assess levels of stress in nurses.

Do you have a recommendation for further reading?

Rohwer, Mojtahedzadeh, Harth & Mache (2020). Stressoren, Stresserleben und Stressfolgen von Pflegekräften im ambulanten und stationären Setting in Deutschland (see references).