JOURNAL OF CLINICAL MEDICINE OF KAZAKHSTAN

Озық Мақала / Оригинальная Статья / Original Article DOI: 10.23950/1812-2892-JCMK-00786

The effect of marital status on burnout levels of nurses: A meta-analysis study

Serkan Temel[1], Tülin Yildiz[2], Fatma Eti Aslan[1]

[1]*Surgical Nursing Department, Bahcesehir University, Istanbul, Turkey*
[2]*Surgical Nursing Department, Tekirdag Namik Kemal University, Tekirdag, Turkey*

Received: 2020-05-28
Accepted: 2020-06-30
UDC: 618.1

J Clin Med Kaz 2020; 4(58):51-56

Corresponding Author: Associate Prof. Dr. Tulin Yildiz, Surgical Nursing Department, School of Health, Namık Kemal University. Tel.: 0090 (282) 2503100, Fax: 0090 (282) 2509933
E-mail: tyildiz70@hotmail.com

Abstract

Objective: This study was planned and carried out as a meta-analysis study in order to analyze the effect of marital status on burnout levels of nurses.

Material and methods: In the study, meta-analysis method, one of the quantitative research methods, was used. The keywords "Nursing", "Burnout Syndrome" and "Marital Status" were scanned in both Turkish and English. According to the last review conducted in June 2019, a total of 3567 studies were detected and analyzed. The research data were obtained through a total of 8 studies, 5 of which are articles and 3 of which are master's theses, in accordance with the inclusion criteria. CMA statistical program was used to analyze the data.

Results: The total sample size of the studies included in the analysis is 1176. According to the fixed effect model; the overall effect size was found to be -0.079 with 0.034 standard error and 95% confidence interval with -0.146 lower limit and -0.011 upper limit.

Conclusion: According to the calculations, burnout in single nurses with a general effect size of -0.079 was found higher than married nurses ($p<0.05$).

Key words: nursing, burnout level, meta-analysis

ОТБАСЫЛЫҚ ЖАҒДАЙДЫҢ МЕЙІРБИКЕЛЕРДІҢ ҚАЖЫЛУ ДЕҢГЕЙІНЕ ӘСЕРІ: МЕТА-ТАЛДАУ

С. Темель[1], Т. Йылдыз[2], Ф.Е. Аслан[1]
[1]Хирургиялық күтім кафедрасы, Бахчешехир Университеті, Ыстамбұл, Түркия
[2]Хирурриялық күтім кафедрасы, Намик Кемаль Университеті, Текирдаг, Түркия

ТҰЖЫРЫМДАМА

Мақсаты: Бұл зерттеу отбасылық жағдайдың мейірбикелердің қажылу деңгейіне әсерін талдау мақсатымен мета-талдау ретінде жоспырланды және жүргізілді.

Материалдары және әдістері: Зерттеуде сандық зерттеу әдістерінің бірі - мета-талдау әдісі қолданылды. «Мейірбике ісі», «Қажу синдромы» және «Отбасылық жағдайы» түйінді сөздері түрік және ағылшын тілдерінде зерттелді. 2019 жылдың маусым айындағы ең соңғы шолуға сәйкес барлығы 3567 зерттеу анықталды және талданды. Осы зерттеудің деректері 8 жұмыс нәтижесінде алынды, оның ішінде қосу критерийлеріне сәйкес 5 мақала және 3 кандидаттық диссертация. Мәліметтерді талдау үшін CMA статистикалық бағдарламасы қолданылды.

Нәтижелері: Талдауға енгізілген зерттеулердің жалпы іріктеу мөлшері 1176 құрады. Тұрақты эффект моделі стандартты ауытқуы 0,034 және 95% сенімділік интервалымен, төменгі шегі -0.146 және жоғарғы шегі -0.011 болатын әсердің жалпы мөлшері -0.079 құрады.

Қорытындысы: Есептеулер бойынша, жалғызбасты медбикелерде қажу, үйленгендерге қарағанда, әсерінің жалпы мөлшері-0,079-бен жоғары болды ($p<0.05$).

Негізгі сөздер: мейірбикелік күтім, қажылу деңгейі, мета-талдау

ВЛИЯНИЕ СЕМЕЙНОГО ПОЛОЖЕНИЯ НА УРОВЕНЬ ВЫГОРАНИЯ МЕДСЕСТЕР: МЕТА-АНАЛИЗ

С. Темель[1], Т. Йылдыз[2], Ф.Е. Аслан[1]
[1]Кафедра хирургического ухода, Университет Бахчешехир, Стамбул, Турция
[2]Кафедра хирургического ухода, Университет Намик Кемаль, Текирдаг, Турция

РЕЗЮМЕ

Цель: Настоящее исследование было запланировано и проведено как мета-анализ, с целью проанализировать влияние семейного положения на уровень выгорания медсестер.

Материалы и методы: В исследовании использовался метод мета-анализа, один из методов количественного исследования. Ключевые слова «Сестринское дело», «Синдром выгорания» и «Семейное положение» были изучены как на турецком, так и на английском языках. Согласно последнему обзору, проведенному в июне 2019 года, было выявлено и проанализировано в общей сложности 3567 исследований. Данные настоящего исследования были получены в результате 8 работ, из которых 5 статей и 3 магистерских диссертации в соответствии с критериями включения. Для анализа данных использована статистическая программа CMA.

Результаты: Общий объем выборки исследований, включенных в анализ, составляет 1176. Согласно модели постоянных эффектов, общий размер эффекта был равен -0,079 со стандартным отклонением 0,034 и доверительным интервалом 95% с нижним пределом -0,146 и верхним пределом -0,011.

Заключение: Согласно расчетам, выгорание у одиноких медсестер с общим размером эффекта -0,079 оказалось выше, чем у замужних ($p<0.05$).

Ключевые слова: сестринский уход, уровень выгорания, мета-анализ

Introduction

It is known that burnout is seen at a higher rate in every profession, especially in occupational branches where interpersonal communication is intense, and therefore it is often encountered in health professionals. Health institutions are places where working conditions are active, intense and stressful, and health professionals are among those who have experienced intense workloads, excessive working hours and shift work, various stressor factors and burnouts [1]. Nurses, who are among health professionals, are at risk of life-threatening situations due to their duties and responsibilities, rapid decision-making processes, intense workload, contact with too many people, conflict, incidents, etc., and may be exposed to many stressors in terms of being able to face situations [2-4]. As the majority of the nursing profession involves female gender and there are working hours in the form of day/night shift, it brought to mind that the marital status in nurses can also affect the feeling of burnout. Marital status appears as a variable that can affect the psychological state and consequently burnout of individuals.

In some studies, it was observed that the burnout levels of singles were high [5], while in others, the burnout levels of the married ones were higher [6,7]. The existence of research related to burnout, which is seen as an important issue for nurses, shows that the subject is being studied in a multidimensional way. Increased studies on burnout suggest that the focus should be on solving the problem. Lately, there are a lot of burnout studies in Turkey. When these studies are analyzed, it can be seen that there are different results regarding whether burnout differs according to marital status. These differences make it difficult to give the results clearly. In this context, it is important to examine the issue with meta-analysis, which is one of the advanced statistical methods, in order to achieve clearer results [5]. A meta-analysis study conducted in Turkey, investigating the relationship between burnout and marital status in nurses, was not found. This meta-analysis study on this subject suggests that it will provide a broader view of the marital status variable and contribute to further future research. This study was planned and conducted as a meta-analysis study to determine the effect of marital status on burnout levels of nurses.

Material and methods

The purpose of this study is to analyze the effect of marital status on burnout levels of nurses in national and international literature using a meta-analysis method.

This study was analyzed using a meta-analysis method, which is one of the quantitative methods of research.

Research questions

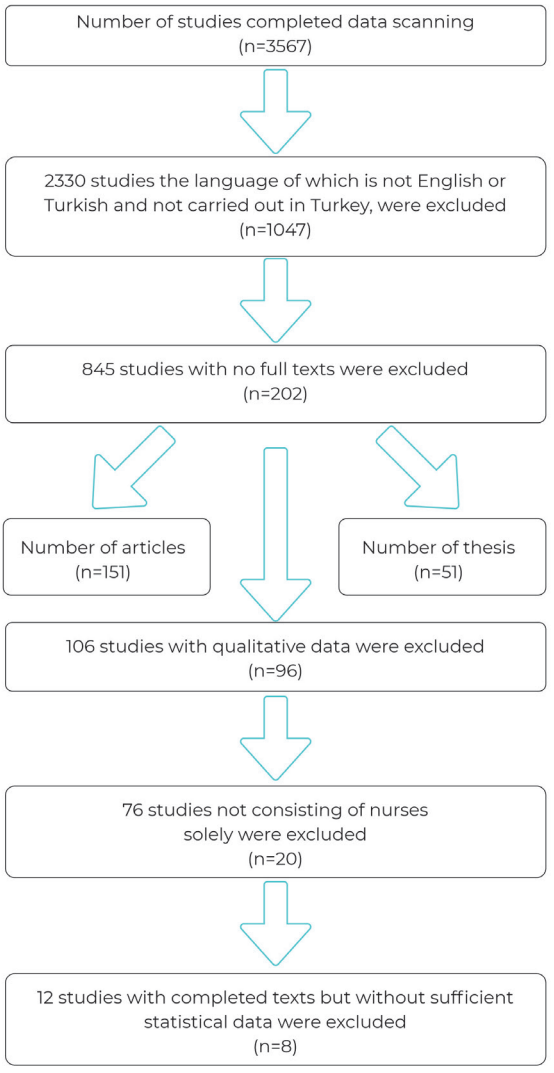
1-Does the marital status of nurses have an effect on burnout levels?

2-If the marital status affects the burnout levels of nurses, what is the magnitude of this effect?

Collection of research data

Regarding the subject to be analyzed in this meta-analysis study; master's and doctoral theses published in Turkish or English languages, national or international refereed journals and scientific articles published in national books have been used. According to the last screening carried out on June 14, 2019, a total of 3567 studies were identified and analyzed. Of these, 2520 studies that are not related to nursing and use languages other than English or Turkish have been eliminated. The remaining 1,047 studies have been coded taking into account the keywords included in the research. When the remaining 1047 studies were analyzed, it was found that 202 results included one or more of the searched keywords. When a detailed coding of these studies was carried out, 151 articles and 51 theses were found. It was determined that 106 of these studies did not contain quantitative data, and 76 of them did not consist of nurses solely and their full texts were not available. In the 12 publications whose full texts were reviewed, it was seen that the desired statistical data were not available. As a result, research was carried out with 8 studies that met our research criteria (Figure 1).

Figure 1 - Process of collecting research data



Inclusion criteria for research

- Data related to burnout level of nurses
- The sample consisting of nurses
- Quantitative analysis values
- Reaching the full texts
- Investigating at least one of the specified variables
- Having full statistical results for calculating the effect size.

Coding of data

The coding form was used to make it easier to obtain the necessary information from the eight studies included in the data collection study. The coding form provided convenience in obtaining the statistical data, such as average, standard

deviation, etc. required for calculating the overall effect size. In addition, it provided ease of application in obtaining features such as sample size, publication type, and publication year of the studies included in the meta-analysis. For each study included in the meta-analysis; the study's publication year, the author of the study, the sample size of the study, average burnout levels according to marital status, standard deviation and sample numbers were determined. In the study, married nurses were coded as Group A and single nurses as Group B. The positive effect value indicates that the burnout levels of married nurses are high, and the negative indicates that the burnout levels of single nurses are high (Table 1).

Table 1 Coding form

CODING FORM	
Publication name: The Level of Burnout and influence of Family Support in Nurses working in a University Hospital.	Publication Number: 7
Authors: Birsen Altay	
	Demet Gönener
Ceren Demirkıran	Publication year: 2010
Sample size: 191	Study theme: Burnout
Group A sample size: 119	Group B sample size: 72
Group A score average:	
EE: 29.10	
DE: 7.23	
PA: 36.82	Group B score average:
EE: 26.65	
DE: 7.27	
PA: 35.51	
Group A standard deviation:	
EE: 11.40	
DE: 6.19	
PA: 7.62	Group B standard deviation:
EE: 10.08	
DE: 6.29	
PA: 7.41	

Note: EE= Emotional Exhaustion, DE= Depersonalization, PA= Personal Accomplishment

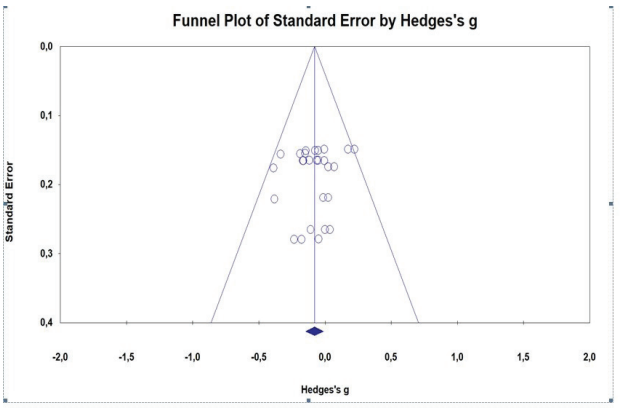
Ethical Considerations

As the study was conducted as a meta-analysis study, a literature review model was used. On the basis of the literature review, the approval of the Ethics Committee for research was not obtained, as it did not directly involve an intervention or effect on animals or humans.

Analysis of data

In the review and analysis of the studies, the group difference method, one of the meta-analysis types, was used in group comparisons. Effect sizes of the predictors were calculated using the CMA (Comprehensive Meta-Analysis Software) statistical package program. Microsoft Office Excel program was used to prepare the data for meta-analysis. Q-Statistic was performed to test the heterogeneity of the effect sizes, and Funnel plot review, Classic Fail-Safe N and Tau Coefficient calculations were performed to test the bias of the publication. In the assessment of average effect sizes; non-significant level (-0.15<d<0.15), small level (0.15<d<0.40), medium level (0.40<d<0.75) and large level (1.10<d<1.45) classification were used (Figure 2).

Figure 2 - Funnel plot of effect sizes



Results

When a descriptive analysis of the studies included in the meta-analysis was made, it was determined that the studies mostly belonged to 2007-2009. The total sample size of the studies included in our research is 1176. The sample number of 75% of these studies is over 100. Maslach Burnout Inventory was used in all studies [8,9]. It was also determined that 37.5% of the studies were carried out in Istanbul, 25% in Ankara, and others in Samsun, Izmir and Trabzon. Information about the studies was given in Table 2.

Table 2 Data details included in the meta-analysis

	Variable	F	%
Publication year	2006 2007 2008 2009 2010	1 3 1 2 1	12.5% 37.5% 12.5% 25% 12.5%
Scale used	Maslach Burnout Inventory (MBI)		100%
Cities where study data were collected	Ankara Samsun Izmir Istanbul Trabzon	2 1 1 3 1	25% 12.5% 12.5% 37.5% 12.5%
Publication type	Master's thesis Article	4 4	50% 50%
Sample numbers of studies	196 191 56 187 82 175 141 148	1 1 1 1 1 1 1 1	12.5% 12.5% 12.5% 12.5% 12.5% 12.5% 12.5% 12.5%

Data from 8 studies were combined using the CMA (Comprehensive Meta-Analysis) software to answer research questions. By combining the subgroups of each study, 24 different effect sizes and the overall effect size were calculated. A heterogeneity test was performed to determine the type of model to be used in calculating the overall effect. The heterogeneity test that is used to obtain information on whether studies show a homogeneous distribution or a heterogeneous distribution was performed by calculating the Q statistical value. In the light of the calculations, the Q value was found to be 18.80 for 23 degrees of freedom. Since this value is less than the X2 table value of 35.172, the fixed effect model was used to calculate the overall effect. Findings regarding the heterogeneity test and overall effect size were given in Table 3.

Table 3 Effect sizes and heterogeneity test

Model Type	Effect Size						Heterogeneity Test	
	Hedges'g	Standard error	Confidence Interval		Z value	P value	Q	Df (Q)
			Lower Limit	Upper Limit				
Fixed	-0.079	0.034	-0.146	-0.011	2.292	0.022	18.80	23

When the table was examined, according to the fixed effect model; the overall effect size was found to be -0.079 with 0.034 standard error and 95% confidence interval -0.146 lower limit and -0.011 upper limit. The negative effect size indicates that single nurses experience burnout more than married nurses. This value was evaluated within the framework of the levels used to evaluate the effect sizes.

- Non-significant level (-0.15<d<0.15),
- Small level (0.15<d<0.40),
- Medium level (0.40<d<0.75),
- Large level (1.10<d<1.45)

There are different methods in the literature for testing publication bias. The most preferred of these methods is the funnel plot. Figure 2 shows that the effect size distributions of the studies examining the marital status and burnout levels are almost symmetrically distributed on both sides of the diagram. The symmetrical distribution of all studies in the diagram provides strong evidence that there is no significant bias in this meta-analysis study.

The confidence interval indicates how consistent the results are in the generalization of the results obtained. The narrower the confidence interval, the more precise the result is. In other words, the narrower the confidence interval, the fewer errors were made. Therefore, the findings of the study are expected to have a narrow confidence interval. Accordingly, the distribution of confidence intervals and weights regarding the effect sizes of the studies included in the meta-analysis were given in the table (Table 4).

Table 4 Confidence intervals and ranges of the effect sizes of the studies included in the meta-analysis

Publication	Sub-dimensions in the study	Statistics for Each Study							
		Hedges' g	Sta. err.	Var.	Lower limit	Upper limit	Z-Value	p-Value	Relative weight
Sönmez, 2006	EE	-0,004	0,165	0,027	-0,328	0,320	-0,025	0,980	4,29
	DE	-0,166	0,166	0,027	0,491	0,158	-1,004	0,315	4,27
	PA	-0,164	0,166	0,027	0,489	0,160	-0,992	0,321	4,27
Şenturan and Ark., 2007	EE	-0,076	0,151	0,023	-0,372	0,220	-0,504	0,615	5,16
	DE	-0,146	0,151	0,023	-0,442	0,150	-0,966	0,334	5,15
	PA	-0,052	0,151	0,023	-0,347	0,244	-0,344	0,731	5,16
Günişen and Üstün, 2007	EE	-0,051	0,165	0,027	-0,374	0,272	-0,309	0,757	4,32
	DE	-0,119	0,165	0,027	-0,442	0,204	-0,720	0,472	4,31
	PA	-0,63	0,165	0,027	-0,386	0,260	-0,381	0,703	4,32
Sinat , 2007	EE	-0,150	0,155	0,024	-0,454	0,154	-0,968	0,333	4,88
	DE	-0,334	0,156	0,024	-0,640	-0,029	-2,144	0,032	4,83
	PA	-0,188	0,155	0,024	-0,492	0,116	-1,210	0,226	4,87
Özkan, 2008	EE	0,024	0,174	0,030	-0,318	0,366	0,138	0,890	3,86
	DE	-0,389	0,176	0,031	-0,734	-0,044	-2,212	0,027	3,79
	PA	0,071	0,174	0,030	-0,271	0,413	0,406	0,655	3,86
Alacacioğlu and Ark., 2009	EE	0,038	0,265	0,070	-0,482	0,558	0,143	0,886	1,67
	DE	0,000	0,265	0,070	-0,520	0,520	0,000	1,00	1,67
	PA	-0,109	0,265	0,070	-0,629	0,411	-0,410	0,682	1,67
Altay, 2010	EE	0,223	0,149	0,022	-0,069	0,516	1,498	0,134	5,27
	DE	-0,006	0,149	0,022	-0,298	0,285	-0,043	0,966	5,30
	PA	0,173	0,149	0,022	-0,119	0,465	1,161	0,246	5,28
Akyüz, 2015	EE	0,025	0,219	0,048	-0,404	0,454	0,114	0,909	2,45
	DE	-0,382	0,221	0,049	-0,815	0,051	-1,729	0,084	2,40
	PA	-0,012	0,219	0,048	-0,441	0,417	-0,057	0,955	2,45

Note: EE= Emotional Exhaustion, DE= Depersonalization, PA= Personal Accomplishment

Discussion

In this study, "the effect of marital status on the burnout level of nurses" was examined. Among the studies included in the meta-analysis; Sönmez (2006) [10], Şenturan et al. (2007) [11], Sinat (2007) [12], Günüşen and Üstün (2008) [13], Alacacioğlu et al. (2009) [14], Altay (2010) [15] and Akyüz (2015) [16] conducted their research with 155, 187, 175, 148, 56, 191 and 82 nurses respectively. In these studies, there was no significant difference between marital status of nurses and burnout scale score averages (p>0.05). In his study with 141 nurses, Özkan (2008) [17] found a significant difference in favor of singles only among the average indifference subscale scores (2.56-2.21; p<0.05). The total sample size of the studies included in the meta-analysis was determined as 1176, and the sample size of 75% was over 100. In the study whose overall effect size value is determined as ES= -0.079, it has been shown that

burnout in single nurses is higher than married nurses even if it is insignificant (Table 2, Table 3). In the literature reviews, studies determining a positive and statistically significant relationship between the marital status and burnout were found as well. In these studies, it is stated that single nurses have a statistically higher burnout level than married nurses [18-20]. According to the fixed effect model in our study; it is observed that the general effect size is -0.079 with the standard error of 0.034 and the 95% confidence interval with the -0146 lower limit and -0.011 upper limit. The negative effect size indicates that single nurses experience burnout more than married nurses. Our research results support the other studies in this respect. It can be thought that couples are positively affected by the safe and supportive lifestyle that family environments provide for them.

Although burnout is a concept that affects a variety of professions, it is stated that it is likely to develop in health professionals, especially nurses [21-23]. In general, the rate of burnout in nurses varies between 15% and 30% [24]. Burnout can negatively affect the mental and physical health of nurses, reduce the quality of health care, cause difficulties at work and quitting the profession [18,25,26]. It should be kept in mind that these situations may also negatively affect productivity, teamwork and professional behavior of nurses.

Conclusion

In this meta-analysis study, the effect size of the marital status variable on the burnout levels of nurses was examined. In the study, the overall effect size value was determined as ES= -0.079, and it was found that burnout in single nurses was insignificantly higher (-0.15<d <0.15) than married nurses. The burnout level of nurses was examined in terms of marital status. The lack of statistical data required in the calculation of the effect coefficient in the studies that are carried out on this subject has limited the number of studies to be synthesized. It is recommended to re-examine the subject with a broader sample.

Disclosures: There is no conflict of interest for all authors.

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How to cite this article: Serkan Temel, Tülin Yildiz, Fatma Eti Aslan. The effect of marital status on burnout levels of nurses: A meta-analysis study. J Clin Med Kaz. 2020; 4(58):51-56