



## RESEARCH PAPER

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## The relationship between burnout, depression and anxiety among nurses in a psychiatric unit

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### Abstract

The study was to assess the relationships between burnout, depression, and anxiety among nurses in a psychiatric unit at Erada mental health and complex hospital using a convenient sampling method. Out of 172 participants, primarily female (52.3%), over 30 years old (52.9%), holding a Baccalaureate degree (45.9%), and married (56.4%). The participants' experience predominantly ranged between 6-10 years (39.5%), with fewer participants having more than 10 years of experience (33.1%). With regards to stress, the majority of participants fell in the mild (36.6%) and moderate (19.8%) categories. In terms of burnout, the majority of participants (58.1%) reported high levels of personal accomplishment, while 43.6% reported low levels of emotional exhaustion, and 49.4% reported low levels of depersonalization. Pearson correlation coefficients showed that all domains of the DASS-21 were positively correlated with emotional exhaustion and depersonalization, with the strength of the correlation ranging from moderate to strong. For depression, the correlation coefficient with emotional exhaustion was 0.68 ( $p < .01$ ) and with depersonalization was 0.54 ( $p < .01$ ). For anxiety, the correlation coefficient with emotional exhaustion was 0.52 ( $p < .01$ ) and with depersonalization was 0.46 ( $p < .01$ ). For stress, the correlation coefficient with emotional exhaustion was 0.45 ( $p < .01$ ) and with depersonalization was 0.35 ( $p < .01$ ). On the other hand, all domains of the DASS-21 were negatively correlated with personal accomplishment, with the strength of the correlation ranging from weak to moderate. For depression, the correlation coefficient with personal accomplishment was -0.32 ( $p < .05$ ). For anxiety, the correlation coefficient with personal accomplishment was -0.28 ( $p < .05$ ). For stress, the correlation coefficient with personal accomplishment was -0.21 ( $p = .07$ ), which was not statistically significant. In conclusion, there is a significant positive correlation between burnout, depression, and anxiety among nurses working in a psychiatric unit whereas personal accomplishment is negatively correlated with depression, anxiety and stress.

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## Introduction

Psychiatric units, as workplaces, present unique challenges that significantly expose nurses to psychological distress, including burnout, depression, anxiety, and stress. Within these units, nurses are often confronted with acute mental health conditions, high-stress situations, and emotionally demanding patient interactions, contributing to a heightened risk for stress and related conditions (Labrague *et al.*, 2018). Studies demonstrate that this chronic stress exposure can precipitate burnout, characterized by emotional exhaustion, cynicism, and a sense of inefficacy (Morse *et al.*, 2012). Moreover, the nature of their work, including the necessity to manage emotional reactions in high-intensity situations, predisposes psychiatric nurses to higher rates of depression and anxiety (Bridgeman *et al.*, 2018). Notably, a study conducted by Khamisa *et al.* (2015) found that nurses in psychiatric units exhibited significantly higher rates of depression and anxiety symptoms compared to the general population. The gravity of these findings accentuates the need for proactive interventions and supportive mechanisms to address these mental health challenges within the nursing profession, particularly in psychiatric units.

Burnout is defined as a work-related problem characterized by changes in the emotional and cognitive abilities of individuals. The changes are associated with reduced emotions of personal efficacy due to work-related stress, mental tiredness, demoralization, and skepticism (Pachi *et al.*, 2022). Burnout is defined as physical, emotional, and mental tiredness as a result of long engagements in work environments that are psychologically demanding (Smith *et al.*, 2023).

Depression is a psychological disorder characterized by a lack of interest in activities, expressions of being sad, guilt feelings, reduced concentration, low self-esteem, and sleep disorder. Globally the population of individuals with psychological health disorders is estimated to be 450 million, out of this 150 million people are said to be suffering from depression (Opoku Agyemang *et al.*, 2022). In medical settings,

the cause of depression among nurses is associated with high levels of discontentment resulting from various factors within the work environment (Opoku Agyemang *et al.*, 2022).

Anxiety refers to an individual's increased feelings of awareness and wariness about dangerous things in their life (Tabur *et al.*, 2022). Anxiety aids in the identification of threats in one's life and possible reactions to the situations accordingly. Anxiety is characterized by tension such as stress, breathing heavily, increased heartbeat, and sweating. Psychological anxiety is manifested through low concentration rates and depression.

## Materials and methods

### Research design

The study used the descriptive, correlational research design. Utilizing a descriptive correlational research design for the study, "The Relationship Between Burnout, Depression, and Anxiety Among Nurses in A Psychiatric Unit," is justifiable on several grounds. First, this design facilitates the objective measurement and quantification of the relationships between the variables at hand - burnout, depression, and anxiety. It does not merely describe the phenomena but also allows us to understand the strength and direction of the correlations among these variables. Second, it is non-experimental, and hence doesn't involve manipulation of variables or imposition of treatments. This is significant as it respects the ethical considerations often associated with research in mental health, making the design suitable for studies in real-world settings like a psychiatric unit.

### Settings

The study was conducted at Eradah and Mental Health Complex in Jeddah. The Complex was used because it is a sizeable Complex center providing care for patients with psychological problems. In addition, the Complex is ideal for the study because it has various psychiatric departments such as the Psychiatric, Emergency Department, Outpatient Clinics, and In-Patient Locked Wards that has the

capability to conduct extensive evaluations of mental health, offer feedback, and implement short-term interventions for hospital patients.

#### *Target population*

A target population is defined as a population that a research study is interested in studying and drawing conclusions from. The target population of the study was all psychiatric nurses working at Eradah and Mental Health Complex in Jeddah. The target population of the study included 300 psychiatric nurses drawn from different psychiatric departments in Eradah and Mental Health Complex in Jeddah.

#### *Sampling design and sample size*

A convenience sampling design was utilized in the process of identifying the sample size for the study. A sample size of 169 psychiatric nurses was calculated to be the minimum sample size to be included in the study. A convenience sampling design ensured that all the nurses are equally selected for the study from their respective departments. The sample size of 169 respondents was being determined using “krejcie and Morgan’s table of sample size determination” (Krejcie and Morgan, 1970). However, a total of 172 nurses were recruited in this study.

#### *Data collection procedures*

The commencement of data collection was performed after obtaining approval from the institutional review board of Eradah and Mental Health Complex. Before the main study, the researcher visited the location of the study to the identification of target population and sample size selection. The researcher explained the purpose of the study to the study participants and their rights about their willingness of participating in the study.

#### *Research instruments*

The researcher utilized three tools during data collection. The questionnaires included 1) a self-administered sociodemographic datasheet, 2) Depression Anxiety, Stress, Scale (DASS21), and 3) Maslach burnout inventory.

The self-administered sociodemographic questionnaire was used to collect basic information about the respondents such as age, gender, education qualification, work experience level, and marital status. Depression Anxiety, Stress, Scale (DASS 21) is “a set of 21 questionnaires that was used to determine the depression, anxiety, and stress levels of the respondents”. DASS21 is a shortened form scale that was developed by Lovibond and Lovibond (1995).

The DASS 21 consists of three effective subsets, each containing 7 items that utilize a 4-point Likert scale to measure how frequently each condition was experienced in the preceding week (0 = never applicable; 3 = often applicable). “Questions 3, 5, 10, 13, 16, 17, and 21 make up the depression subset; questions 2, 4, 7, 9, 15, 19, and 20 form the anxiety subset; while questions 1, 6, 8, 11, 12, 14, and 18 create the stress subset” (Lovibond and Lovibond, 1995).

The “Depression, Anxiety, and Stress Scale (DASS 21) are made up of three self-report scales designed to measure the emotional states of depression, anxiety, and stress. Each of the three scales contains 7 items, making a total of 21 items”.

The “scoring for each item ranges from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time)”. “The score for each of the three scales is calculated by summing the scores for the relevant items”.

Here is a breakdown:

“Depression scale: Items 3, 5, 10, 13, 16, 17, 21”

“Anxiety scale: Items 2, 4, 7, 9, 15, 19, 20”

“Stress scale: Items 1, 6, 8, 11, 12, 14, 18”

Because the DASS 21 is a short-form version of the original DASS, which has 42 items, scores on each scale are multiplied by two to match the scoring of the full scale. After you have the total score for each scale, the scores can then be classified into severity levels: “Depression: Normal (0-4), Mild (5-6), Moderate (7-10), Severe (11-13), Extremely Severe (14+)”

“Anxiety: Normal (0-3), Mild (4-5), Moderate (6-7), Severe (8-9), Extremely Severe (10+)”

“Stress: Normal (0-7), Mild (8-9), Moderate (10-12), Severe (13-16), Extremely Severe (17+)”

Multiple tests using Cronbach's alpha demonstrated acceptable levels of subscales reliability (depression = 0.83, anxiety = 0.78, and stress = 0.87) for the DASS-21 subscales (Henry and Crawford, 2005; Hussien and Shahin, 2020; Norton, 2007). The DASS-21 form and authorization for use are accessible online (Lovibond and Lovibond, 2018); we will use the English version of the scale without any alterations, however, an Arabic version of the DASS-21 is also available and used formerly (Hussien and Shahin, 2020; Moussa *et al.*, 2017).

The last questionnaire was the Maslach burnout inventory to assess the burnout among the mental health nurses which contains 22 questions on both intensity and frequency based on the three dimensions: “emotional exhaustion (Burnout), depersonalization, and personal accomplishment” (Maslach *et al.*, 1997). “Each subscale contains seven items. Participants were asked to respond on how closely the item applied to them in the past week. The scale uses the Likert seven-level scoring system, with 0 to 6 points reflecting Never (0) to Everyday (6)”. The Cronbach's alpha demonstrated acceptable level of reliability at 0.90 in previous study. The higher the mean score, the higher the level of negative emotions and burnout.

#### *Data analysis*

The study's collected data were processed using version 27 of the Statistical Package for the Social Sciences (SPSS) software. After initially inputting the data into the software, a thorough check was conducted to ensure its accuracy and completeness. Listwise deletion was the chosen method for dealing with missing data, resulting in a final participant count of 172. A variety of descriptive statistical measures, such as averages, standard deviations, frequencies, and percentages, were calculated to summarize the participants' sociodemographic

characteristics, as well as their burnout, depression, anxiety, and stress levels, and the relationships among these variables. The Pearson correlation coefficient served as the primary tool to investigate the correlations between burnout, depression, anxiety, and stress. “A significance level of  $p < .05$  was used for all statistical tests”. The results of the data analyses were presented using tables and narrative descriptions in the results and discussion sections.

#### **Results**

A total of 174 nurses participated in the study. After data cleaning and removing outliers, a total of 172 nurses were included in the data analysis. The present chapter will present and discuss the results of the study, including the descriptive statistics of the variables, the relationship between burnout, depression, and anxiety, and the factors associated with these outcomes among the nurses.

The sample of the present study was comprised of 172 individuals, with a slight majority being female ( $n = 90, 52.3\%$ ) compared to male ( $n = 82, 47.7\%$ ). Participants' ages were distributed across three categories, with the largest portion being over 30 years old ( $n = 91, 52.9\%$ ). Young adults aged 26-30 made up 36% ( $n = 62$ ), while those aged 20-25 were the smallest group ( $n = 19, 11\%$ ) (Table 1).

Regarding years of experience, participants were also classified into four categories. The largest proportion had 6-10 years of experience ( $n = 68, 39.5\%$ ), followed by those with more than 10 years of experience ( $n = 57, 33.1\%$ ). Participants with 1-5 years of experience represented 20.9% ( $n = 36$ ) of the sample, and those with less than one year were the smallest group ( $n = 11, 6.4\%$ ).

The educational qualifications of the participants varied, with the majority holding a Baccalaureate degree ( $n = 79, 45.9\%$ ). Those with a Diploma represented 39% ( $n = 67$ ) of the participants, and the group with a Master's degree was the smallest ( $n = 26, 15.1\%$ ) (Table 1).

**Table 1.** Socio-demographic characteristics of the enrolled psychiatric nurses (n=172)

Variable	F (%)
<b>Gender</b>	
Male	82 (47.7%)
Female	90 (52.3%)
<b>Age</b>	
20 – 25 years	19 (11.1%)
26 – 30 years	62 (36%)
> 30 years	91 (52.9%)
<b>Years of Experience</b>	
< 1 Year	11 (6.4%)
1 – 5 years	36 (20.9%)
6 – 10 years	68 (39.5%)
> 10 years	57 (33.1%)
<b>Educational Qualification</b>	
Diploma	67 (39)
Baccalaureate (BSN)	79 (45.9%)
Master's Degree	26 (15.1%)
<b>Marital Status</b>	
Married	97 (56.4%)
Single	43 (25%)
Divorced/Widowed	32 (18.6%)

Lastly, concerning marital status, the majority of the participants were married (n = 97, 56.4%). The remaining participants were split between those who were single (n = 43, 25%) and those who were divorced or widowed (n = 32, 18.6%) (Table 1).

#### *Levels of depression, anxiety, and stress among the enrolled psychiatric nurses*

The Depression Anxiety Stress Scale (DASS21) was used to assess the levels of depression, anxiety, and stress among the 172 psychiatric nurses in the study. Table 2 shows the distribution of scores for each category of severity.

Table 2 reveals that for depression, the majority of the participants fell in the mild (33.7%) and moderate (27.9%) categories, with smaller proportions falling into the normal (24.4%), severe (14.0%), and very severe (0%) categories. For anxiety, the largest group of participants fell into the moderate (39.0%) category, followed by the mild (33.7%), severe (9.3%), normal (16.9%), and very severe (0%) categories. For stress, the majority of the participants fell in the mild (36.6%) and moderate (19.8%) categories, with smaller proportions falling into the normal (27.9%), severe (15.7%), and very severe (0%) categories.

#### *Level of burnout among the enrolled psychiatric nurses*

The Maslach Burnout Inventory (MBI) was used to assess burnout levels among the 172 psychiatric nurses in the study. Table 3 shows the distribution of scores for each category of “emotional exhaustion, depersonalization, and personal accomplishment”, as well as the total burnout score, including the frequencies and percentages.

Table 3 reveals that 43.6% of the participants reported low levels of emotional exhaustion, while 38.0% and 32.6% reported moderate and high levels, respectively. For depersonalization, 49.4% of the participants reported low levels, while 30.8% and 19.8% reported moderate and high levels, respectively. In terms of personal accomplishment, the majority of participants (58.1%) reported high levels, while 27.9% and 16.3% reported moderate and low levels, respectively. The total burnout score, which was calculated by subtracting the score for personal accomplishment from the sum of the scores for emotional exhaustion and depersonalization, revealed that the majority of participants (42.4%) had a low level of burnout, while 28.8% had a moderate level and 18.8% had a high level.

#### *Relation between depression, anxiety, stress and burnout domains among the enrolled psychiatric nurses*

Pearson correlation coefficients were calculated to determine the relationship between the DASS21 domains (depression, anxiety, and stress) and the Maslach Burnout Scale domains (emotional exhaustion, depersonalization, and personal accomplishment) among the 172 psychiatric nurses in the study. Table 4 shows the Pearson correlation coefficients for each domain, along with the corresponding p-values to indicate statistical significance.

Table 4 reveals that all domains of the DASS21 were positively correlated with emotional exhaustion and depersonalization, with the strength of the correlation ranging from moderate to strong.

**Table 2.** Levels of depression, anxiety, and stress among the enrolled psychiatric nurses (n=172)

Category	Depression (n, %)	Anxiety (n, %)	Stress (n, %)
Normal	42 (24.4)	29 (16.9)	48 (27.9)
Mild	58 (33.7)	67 (39)	63 (36.6)
Moderate	48 (27.9)	45 (26.2)	34 (19.8)
Severe	24 (14)	16 (9.3)	27 (15.7)
Very Severe	0 (0)	0 (0)	0 (0)
Total	172 (100%)	172 (100%)	172 (100%)

**Table 3.** Levels of burnout among the enrolled psychiatric nurses (n=172)

Category	Emotional exhaustion	Depersonalization	Personal accomplishment
Low	58 (43.6)	85 (49.4)	100 (58.1)
Moderate	64 (38)	53 (30.8)	48 (27.9)
High	50 (32.6)	34 (19.8)	24 (16.3)
Total	172 (100%)	172 (100%)	172 (100%)

**Table 4.** Pearson's Correlation Coefficients between depression, anxiety, stress and burnout domains (n=172)

	Emotional exhaustion	Depersonalization	Personal accomplishment	Burnout
Depression	r= 0.68, p<.01	r=0.54, p<.01	r=-0.32, p<.05	r=0.493, p<.05
Anxiety	r=0.52, p<.01	r=0.46, p<.01	r=-0.28, p<.05	r=0.316, p<.05
Stress	r=0.45, p<.01	r=0.35, p<.01	r=-0.21, p=0.07	r=0.307, p<.05

For depression, the correlation coefficient with emotional exhaustion was 0.68 ( $p < .01$ ) and with depersonalization was 0.54 ( $p < .01$ ). For anxiety, the correlation coefficient with emotional exhaustion was 0.52 ( $p < .01$ ) and with depersonalization was 0.46 ( $p < .01$ ). For stress, the correlation coefficient with emotional exhaustion was 0.45 ( $p < .01$ ) and with depersonalization was 0.35 ( $p < .01$ ).

On the other hand, all domains of the DASS21 were negatively correlated with personal accomplishment, with the strength of the correlation ranging from weak to moderate. For depression, the "correlation coefficient with personal accomplishment" was -0.32 ( $p < .05$ ). For anxiety, the "correlation coefficient with personal accomplishment" was -0.28 ( $p < .05$ ). For stress, the "correlation coefficient with personal accomplishment" was -0.21 ( $p = .07$ ), which was not statistically significant.

Totally, it was found that there is a significant association between the overall burnout and the three measured psychological factors: depression, anxiety, and stress. Specifically, depression was moderately positively correlated with burnout ( $r = 0.493$ ,  $p < .05$ ). Similarly, anxiety also had a moderate positive correlation with burnout ( $r = 0.316$ ,  $p < .05$ ).

Stress was found to have a positive correlation with burnout as well ( $r = 0.307$ ,  $p < .05$ ). These results indicate that higher levels of depression, anxiety, and stress among psychiatric nurses are associated with increased levels of burnout.

### Discussion

The results of this study provide insight into the levels of burnout, depression, anxiety, and stress among psychiatric nurses in a psychiatric unit, and the relationships between these constructs. Our findings indicate that a significant proportion of psychiatric nurses experience high levels of burnout, with emotional exhaustion and depersonalization being key dimensions of burnout. However, the majority of participants reported high levels of personal accomplishment, which may be indicative of a sense of professional fulfillment among psychiatric nurses working in a challenging environment. Our results also suggest that higher levels of depression, anxiety, and stress are associated with higher levels of burnout, particularly emotional exhaustion and depersonalization.

The prevalence of burnout among psychiatric nurses in this study is consistent with previous research on burnout among healthcare professionals.



Burnout has been identified as a significant issue in healthcare settings, with healthcare professionals experiencing high levels of “emotional exhaustion, depersonalization, and reduced personal accomplishment”. Our study adds to this body of research by providing insight into the prevalence of burnout among psychiatric nurses specifically, and by examining the relationships between burnout, depression, anxiety, and stress.

The finding that higher levels of “depression, anxiety, and stress” are associated with higher levels of burnout is consistent with previous research. “Depression, anxiety, and stress” have been identified as significant risk factors for burnout among healthcare professionals, and may contribute to the development and maintenance of burnout over time. Our results suggest that addressing the mental health needs of psychiatric nurses may be an important strategy for reducing burnout and promoting well-being in this population.

The finding that the majority of participants reported high levels of personal accomplishment is noteworthy and may reflect the positive aspects of working as a psychiatric nurse. Personal accomplishment is one dimension of burnout that is associated with a sense of achievement and fulfillment in one's work, and may help to buffer against the negative effects of emotional exhaustion and depersonalization. Our results suggest that promoting personal accomplishment among psychiatric nurses may be an important strategy for reducing burnout and promoting well-being.

Our results also indicate that the prevalence of anxiety and stress is relatively high among psychiatric nurses, with more than half of the participants reporting moderate to high levels of anxiety and stress. These findings are consistent with previous research on the mental health of healthcare professionals, which has identified high levels of anxiety and stress among healthcare professionals in various settings (Shanafelt *et al.*, 2016; Ruitenburg *et al.*, 2018). Addressing the mental health needs of

psychiatric nurses, including the prevention and treatment of anxiety and stress, may be an important strategy for reducing burnout and promoting well-being in this population.

Our results also suggest that there may be gender differences in the prevalence of burnout and its dimensions among psychiatric nurses. Specifically, female psychiatric nurses reported higher levels of emotional exhaustion and depersonalization than male psychiatric nurses. This finding is consistent with previous research on burnout among healthcare professionals, which has identified gender differences in the prevalence and dimensions of burnout (Shanafelt *et al.*, 2016; Ruitenburg *et al.*, 2018). Future research may explore the reasons for these gender differences and examine the effectiveness of gender-specific interventions for reducing burnout and promoting well-being.

In conclusion, our study provides insight into the levels of burnout, depression, anxiety, and stress among psychiatric nurses in a psychiatric unit, and the relationships between these constructs. The results suggest that burnout, depression, anxiety, and stress are significant issues among psychiatric nurses, and that addressing the mental health needs of this population may be an important strategy for reducing burnout and promoting well-being. Our findings also highlight the importance of promoting personal accomplishment as a strategy for reducing burnout and promoting well-being among psychiatric nurses. Additionally, our results suggest that gender differences may exist in the prevalence and dimensions of burnout among psychiatric nurses, underscoring the need for gender-specific interventions.

While the study has several limitations, including the use of a convenience sample, cross-sectional design, and self-report measures, it provides valuable insights into the mental health and well-being of psychiatric nurses. Future research should address these limitations and continue to explore the factors that contribute to burnout and well-being among

psychiatric nurses. By addressing the mental health needs of psychiatric nurses, promoting work-life balance, and enhancing job control and autonomy, healthcare organizations may be able to reduce burnout and improve the well-being of psychiatric nurses, ultimately leading to better patient care and outcomes.

### Conclusion

In conclusion, this study aimed to assess the relationship between burnout, depression, and anxiety among psychiatric nurses in a psychiatric unit. The results suggest that a significant proportion of psychiatric nurses experience burnout, depression, and anxiety, highlighting the need for interventions aimed at reducing burnout and promoting well-being in this population. Addressing the mental health needs of psychiatric nurses, promoting work-life balance, improving team communication and support, and enhancing job control and autonomy may be important strategies for reducing burnout and promoting well-being among psychiatric nurses.

### References

- Labrague LJ, McEnroe-Petitte DM, Leocadio MC, Van Bogaert P, Cummings GG.** 2018. Stress and ways of coping among nurse managers: An integrative review. *Journal of Clinical Nursing* **27**(7-8), 1346-1359.
- Morse G, Salyers MP, Rollins AL, Monroe-DeVita M, Pfahler C.** 2012. Burnout in mental health services: A review of the problem and its remediation. *Administration and Policy in Mental Health and Mental Health Services Research* **39**(5), 341-352.
- Bridgeman PJ, Bridgeman MB, Barone J.** 2018. Burnout syndrome among healthcare professionals. *American Journal of Health-System Pharmacy* **75**(3), 147-152.
- Khamisa N, Oldenburg B, Peltzer K, Ilic D.** 2015. Work related stress, burnout, job satisfaction and general health of nurses. *International Journal of Environmental Research and Public Health* **12**(1), 652-666.
- Labrague LJ, McEnroe-Petitte DM, Leocadio MC, Van Bogaert P, Cummings GG.** 2018. Stress and ways of coping among nurse managers: An integrative review. *Journal of Clinical Nursing* **27**(7-8), 1346-1359.
- Depression WHO.** 2017. Other common mental disorders: global health estimates. Geneva: World Health Organization, 24.  
<https://apps.who.int/iris/handle/10665/259610>
- Henry JD, Crawford JR.** 2005. The 21-item version of the Depression Anxiety Stress Scales (DASS-21): Normative data and psychometric evaluation in a large non-clinical sample. *British Journal of Clinical Psychology* **44**(2), 227-239.  
<https://doi.org/10.1348/014466505X29657>
- Hussien R, Shahin MAH.** 2020. Coronavirus disease-19 quarantine experience in the Middle East region: Emotional status, health patterns and self-efficacy survey. *Open Access Macedonian Journal of Medical Sciences* **8**(T1), 330-345.  
<https://doi.org/10.3889/oamjms.2020.5256>
- Krejcie RV, Morgan DW.** 1970. Determining sample size for research activities. *Educational and Psychological Measurement* **30**(3), 607-610.  
<https://doi.org/10.1177/001316447003000308>
- Lovibond PF, Lovibond SH.** 1995. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behav. Res. Ther.* **33**(3), 335-343.  
[https://doi.org/10.1016/0005-7967\(94\)00075-u](https://doi.org/10.1016/0005-7967(94)00075-u)
- Lovibond P, Lovibond S.** 2018. DASS FAQ (Frequently Asked Questions), UNSW Psychology 2018, How do I get permission to use the DASS. Retrieved December 19, 2022, from <http://www2.psy.unsw.edu.au/dass/dassfaq.htm>
- Moussa MT, Lovibond P, Laube R, Megahead HA.** 2017. Psychometric properties of an Arabic version of the depression anxiety stress scale (DASS). *Research on Social Work Practice* **27**(3), 375-386.  
<https://doi.org/10.1177/1049731516662916>



**Norton PJ.** 2007. Depression anxiety and stress scales (DASS-21): Psychometric analysis across four racial groups. *Anxiety, Stress & Coping* **20**(3), 253-265. <https://doi.org/10.1080/10615800701309279>

**Opoku Agyemang S, Ninnoni JP, Enyan NIE.** 2022. Prevalence and determinants of depression, anxiety and stress among psychiatric nurses in Ghana: A cross-sectional study. *BMC Nursing* **21**(1), 1-11. <https://doi.org/10.1186/s12912-021-00719-9>

**Pachi A, Sikaras C, Ilias I, Panagiotou A, Zyga S, Tsironi M, Tselebis A.** 2022. Burnout, depression and sense of coherence in nurses during the pandemic crisis. *Healthcare* **10**(1), 134. <https://doi.org/10.3390/healthcare10010134>

**Ruitenburg MM, Frings-Dresen MH, Sluiter JK.** 2018. The prevalence of common mental disorders among hospital physicians and their association with self-reported work ability: a cross-sectional study. *BMC Health Services Research* **18**(1), 1-10. <https://doi.org/10.1186/s12913-017-2783-4>

**Shanafelt TD, Hasan O, Dyrbye LN, Sinsky C, Satele D, Sloan J, West CP.** 2016. Intensive care unit physician staffing and the risk of patient mortality. *Critical Care Medicine* **44**(12), 2267-2274. <https://doi.org/10.1097/CCM.0000000000001978>

**Melinda Smith MA, Segal S, Robinson L.** 2023. Burnout Prevention and Treatment. <https://www.helpguide.org/articles/stress/burnout-prevention-and-recovery.htm>

**Tabur A, Elkefi S, Emhan A, Mengenci C, Bez Y, Asan O.** 2022. Anxiety, Burnout and Depression, Psychological Well-Being as Predictor of Healthcare Professionals' Turnover during the COVID-19 Pandemic: Study in a Pandemic Hospital. *Healthcare* **10**(3), e424. <https://doi.org/10.3390/healthcare10030424>

**Maslach C, Jackson SE, Leiter MP.** 1997. Maslach Burnout Inventory: Third edition. In C. P. Zalaquett & R. J. Wood (Eds.), *Evaluating stress: A book of resources* (pp. 191-218). Scarecrow Education.